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Piketon, Ohio

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EQ Midwest, Inc.
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TABLES

ACRONYMS

°C	degrees Celsius
Ci	curie
cm	centimeter
DCG	derived concentration guide
DOE	U.S. Department of Energy
DOE/PORTS	facilities operated by DOE (not leased to USEC) at the Portsmouth Gaseous Diffusion Plant
g	gram
kg	kilogram
km	kilometer
L	liter
m	meter
m^3	cubic meter
Fg	microgram
mg	milligram
MGD	million gallons per day
mR	milliroentgen
mrem	millirem
na	not analyzed
ND	not detected
NPDES	National Pollutant Discharge Elimination System
pCi	picocurie
PK	Peter Kiewit
PORTS	Portsmouth Gaseous Diffusion Plant
SU	standard unit
TUa	acute toxicity unit
USEC	United States Enrichment Corporation

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1. INTRODUCTION

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

This document is a compilation of the environmental monitoring data for calendar year 2002 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 Annual Environmental Report for 2002* (DOE/OR/11-3132&D1).

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2. ENVIRONMENTAL MONITORING

This section provides environmental monitoring data collected by both the Department of Energy (DOE) and the United States Enrichment Corporation (USEC) at or nearby PORTS.

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Table 2.1. Radionuclide concentrations in DOE and USEC NPDES outfall water samples for 2002

NPDES outfall[a]	Parameter[b]	Number of samples[c]	Minimum	Maximum	Average[d]	DCG[e]
			DOE Outfalls			
012	americium-241	4(4)	0	< 0.3059		30
	neptunium-237	4(4)	0	< 0.03563		30
	plutonium-238	4(4)	0	< 0.07053		40
	plutonium-239/240	4(4)	0	< 0.05698		30
	technetium-99	12(12)	0	< 7.31		100,000
	uranium	12(7)	0	1.747		
	uranium-233/234	12(1)	0.1763	0.639	0.382	500
	uranium-235	12(12)	0	< 0.02222		600
	uranium-236	12(12)	0	< 0.07981		500
	uranium-238	12(5)	0	0.5908		600
013	americium-241	4(4)	< 0.02377	< 0.1371		30
	neptunium-237	4(4)	0	0		30
	plutonium-238	4(4)	0	< 0.03918		40
	plutonium-239/240	4(4)	0	< 0.08042		30
	technetium-99	12(12)	0	< 8.79		100,000
	uranium	12(5)	< 0.05844	2.231		
	uranium-233/234	12(4)	0	1.109		500
	uranium-235	12(12)	0	< 0.05739		600
	uranium-236	12(12)	0	< 0.08054		500
	uranium-238	12(4)	< 0.01963	0.7495		600
015	americium-241	4(4)	< 0.02012	< 0.1865		30
	neptunium-237	4(4)	0	0		30
	plutonium-238	4(4)	0	< 0.162		40
	plutonium-239/240	4(4)	0	< 0.05401		30
	technetium-99	12(5)	0	151		100,000
	uranium	12(4)	< 0.2619	1.583		
	uranium-233/234	12(0)	0.6528	1.571	1.011	500
	uranium-235	12(12)	0	< 0.09749		600
	uranium-236	12(12)	0	< 0.01966		500
	uranium-238	12(3)	< 0.08795	0.5365		600
608	americium-241	4(4)	< 0.01552	< 0.3195		
	neptunium-237	4(4)	0	< 0.1891		
	plutonium-238	4(4)	< 0.04714	< 0.132		
	plutonium-239/240	4(4)	0	< 0.1048		
	technetium-99	12(12)	0	< 5.19		
	uranium	12(5)	< 0.4269	3.403		
	uranium-233/234	12(1)	0.4042	3.002	0.994	
	uranium-235	12(11)	0	0.1683		
	uranium-236	12(12)	0	< 0.05994		
	uranium-238	12(3)	< 0.1411	1.117		
610	americium-241	4(3)	0	0.3896		
	neptunium-237	4(4)	0	< 0.01961		
	plutonium-238	4(4)	0	< 0.09798		
	plutonium-239/240	4(4)	0	< 0.06884		
	technetium-99	12(3)	0	800		
	uranium	12(1)	< 0.1916	46.37	15.90	
	uranium-233/234	12(1)	< 0.08296	79.21	27.33	
	uranium-235	12(4)	< 0.02469	3.55		
	uranium-236	12(9)	0	0.6936		
	uranium-238	12(1)	< 0.0621	15.02	5.16	

Table 2.1. Radionuclide concentrations in DOE and USEC NPDES outfall water samples for 2002 (continued)

NPDES outfall[a]	Parameter[b]	Number of samples[c]	Minimum	Maximum	Average[d]	DCG[e]
611	americium-241	4(4)	0	< 0.07553		
	neptunium-237	4(4)	0	< 0.1254		
	plutonium-238	4(4)	< 0.02501	< 0.1002		
	plutonium-239/240	4(4)	< 0.01606	< 0.15		
	technetium-99	12(0)	20.2	61.8	34.1	
	uranium	12(0)	4.497	14.06	7.88	
	uranium-233/234	12(0)	6.748	25.83	12.09	
	uranium-235	12(1)	< 0.1305	0.8645	0.4506	
	uranium-236	12(9)	0	0.2198		
	uranium-238	12(0)	1.49	4.59	2.58	
612	americium-241	1(1)	< 0.2285			
	neptunium-237	1(1)	< 0.0167			
	plutonium-238	1(1)	< 0.08315			
	plutonium-239/240	1(1)	< 0.0000166			
	technetium-99	1(1)	0			
	uranium	1(1)	0			
	uranium-233/234	1(1)	0			
	uranium-235	1(1)	< 0.02577			
	uranium-236	1(1)	0			
	uranium-238	1(1)	0			
			USEC Outfalls			
001	americium-241	4(4)	< 0.05631	< 0.417		30
	neptunium-237	4(4)	0	< 0.211		30
	plutonium-238	4(4)	< 0.02779	< 0.335		40
	plutonium-239/240	4(4)	< 0.053	< 0.136		30
	technetium-99	52(36)	< 2.16	52		100,000
	uranium	52(22)	0.55	3.11		
002	americium-241	4(4)	< 0.055	< 0.494		30
	neptunium-237	4(4)	0	< 0.545		30
	plutonium-238	4(4)	< 0.05	< 0.49		40
	plutonium-239/240	4(4)	0	< 0.22		30
	technetium-99	52(49)	0	292		100,000
	uranium	52(13)	0.96	3		
003	americium-241	4(4)	< 0.156	< 0.2966		30
	neptunium-237	4(4)	0	< 1.22		30
	plutonium-238	4(4)	< 0.02584	< 0.776		40
	plutonium-239/240	4(4)	0	< 0.696		30
	technetium-99	52(14)	< 2.36	288		100,000
	uranium	52(0)	3	18.2	7.88	
004	americium-241	4(4)	< 0.145	< 0.366		30
	neptunium-237	4(4)	0	< 0.372		30
	plutonium-238	4(4)	< 0.0608	< 0.42		40
	plutonium-239/240	4(4)	0	< 0.212		30
	technetium-99	52(50)	0	12.9		100,000
	uranium	52(3)	0.83	2.03	1.23	
005	americium-241	4(4)	0	< 0.355		30
	neptunium-237	4(4)	0	< 0.502		30
	plutonium-238	4(4)	0	< 0.288		40
	plutonium-239/240	4(3)	< 0.03151	< 0.194		30
	technetium-99	52(51)	0	< 12		100,000
	uranium	52(35)	0.86	2.15		

Table 2.1. Radionuclide concentrations in DOE and USEC NPDES outfall water samples for 2002 (continued)

NPDES outfall[a]	Parameter[b]	Number of samples[c]	Minimum	Maximum	Average[d]	DCG[e]
009	americium-241	4(4)	< 0.1471	0.368		30
	neptunium-237	4(4)	0	1.06		30
	plutonium-238	4(4)	< 0.0816	0.408		40
	plutonium-239/240	4(4)	0	0.516		30
	technetium-99	52(35)	0	155		100,000
	uranium	52(0)	2.54	11.9	6.3	
010	americium-241	4(4)	< 0.1278	0.289		30
	neptunium-237	4(4)	0	0.343		30
	plutonium-238	4(4)	< 0.02393	0.235		40
	plutonium-239/240	4(4)	< 0.02392	0.151		30
	technetium-99	52(49)	0	13.3		100,000
	uranium	52(0)	1.42	7.33	3.77	
011	americium-241	4(4)	< 0.03536	0.32		30
	neptunium-237	4(4)	0	0.453		30
	plutonium-238	4(4)	0	0.263		40
	plutonium-239/240	4(4)	0	0.201		30
	technetium-99	52(49)	0	35.8		100,000
	uranium	52(21)	0.72	1.7		

[a]DOE internal NPDES Outfalls 608, 610, and 611 discharge to USEC NPDES Outfall 003 (X-6619 Sewage Treatment Plant). DOE internal NPDES Outfall 612 discharges to DOE Outfall 012.

[b]Uranium is reported in Fg/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]Averages were not calculated for outfalls which 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.

[e]Derived Concentration Guide (DCG)(pCi/L). DCGs are not provided for DOE internal outfalls (Outfalls 608, 610, 611, and 612) because water from these outfalls flows through another outfall prior to discharge from the site. A DCG is not available for uranium.

Table 2.2. DOE NPDES permit summary for January through November 2002

Effluent characteristics		Monitoring requirements		Discharge limitations	
Parameter	Units	Measurement frequency	Sampling type	Concentration	
				30-day	Daily
Outfall 012 (X-2230M Holding Pond)					
Flow rate	MGD	Daily	24-hour total[a]		
pH	SU	1/2 weeks	Grab		6.5–9.0
Total suspended solids	mg/L	1/2 weeks	Grab	30	45
Oil and grease, total	mg/L	1/2 weeks	Grab	10	20
Chlorine, total residual	mg/L	1/2 weeks[b]	Grab		
Phosphorus, total	mg/L	1/2 weeks	Grab		
Chromium, hexavalent	Fg/L	1/2 weeks	Grab		
Chromium, total	Fg/L	1/2 weeks	Grab		
Trichloroethene	Fg/L	1/2 weeks	Grab		
PCBs	Fg/L	1/quarter	Grab	*c*	*c*
Outfall 013 (X-2230N Holding Pond)					
Flow rate	MGD	Daily	24-hour total[a]		
pH	SU	1/2 weeks	Grab		6.5–9.0
Total suspended solids	mg/L	1/2 weeks	Grab	30	45
Oil and grease, total	mg/L	1/2 weeks	Grab	10	20
Chlorine, total residual	mg/L	1/2 weeks[b]	Grab		
Phosphorus, total	mg/L	1/2 weeks	Grab		
Chromium, hexavalent	Fg/L	1/2 weeks	Grab		
Chromium, total	Fg/L	1/2 weeks	Grab		
PCBs	Fg/L	1/quarter	Grab	*c*	*c*
Outfall 015 (X-624 Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hour total		
Trichloroethene	Fg/L	1/2 weeks	Grab	10	10
PCBs	Fg/L	1/quarter	Grab	*c*	*c*
Outfall 608 (X-622 Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hour total		
pH	SU	1/week	Grab		
Zinc, total	Fg/L	1/2 weeks	Grab		
Trichloroethene	Fg/L	1/2 weeks	Grab		10
1,2-trans-dichloroethene	Fg/L	1/2 weeks	Grab	25	66

Table 2.2. DOE NPDES permit summary for January through November 2002 (continued)

Effluent characteristics		Monitoring requirements		Discharge limitations	
Parameter	Units	Measurement frequency	Sampling type	Concentration	
				30-day	Daily
Outfall 610 (X-623 Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hour total		
pH	SU	1/week	Grab		
Zinc, total	Fg/L	1/2 weeks	Grab		
Trichloroethene	Fg/L	1/2 weeks	Grab	10	10
1,2-trans-dichloroethene	Fg/L	1/2 weeks	Grab	25	66
Outfall 611 (X-622T Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hour total		
Trichloroethene	Fg/L	1/2 weeks	Grab	10	10

[a]Estimated.
[b]Summer only.
[c]No detectable PCBs.

Table 2.3. DOE NPDES permit summary for December 2002

Effluent characteristics		Monitoring requirements		Discharge limitations	
Parameter	Units	Measurement frequency	Sampling type	Concentration	
				30-day	Daily
Outfall 012 (X-2230M Holding Pond)					
Flow rate	MGD	Daily	24-hour total[a]		
pH	SU	1/2 weeks	Grab		6.5–9.0
Total suspended solids	mg/L	1/2 weeks	Grab	30	45
Oil and grease, total	mg/L	1/2 weeks	Grab	10	20
Chlorine, total residual	mg/L	1/2 weeks[b]	Grab		
Iron, total recoverable	Fg/L	1/2 weeks	Grab		
Trichloroethene	Fg/L	1/2 weeks	Grab		
PCBs	Fg/L	1/quarter	Grab	*c*	*c*
Outfall 013 (X-2230N Holding Pond)					
Flow rate	MGD	Daily	24-hour total[a]		
pH	SU	1/2 weeks	Grab		6.5–9.0
Total suspended solids	mg/L	1/2 weeks	Grab	30	45
Oil and grease, total	mg/L	1/2 weeks	Grab	10	20
Chlorine, total residual	mg/L	1/2 weeks[b]	Grab		
PCBs	Fg/L	1/quarter	Grab	*c*	*c*
Outfall 015 (X-624 Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hour total		
Trichloroethene	Fg/L	1/2 weeks	Grab	10	10
PCBs	Fg/L	1/quarter	Grab	*c*	*c*
Outfall 608 (X-622 Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hour total		
pH	SU	1/2 weeks	Grab		
Trichloroethene	Fg/L	1/2 weeks	Grab		10
1,2-trans-dichloroethene	Fg/L	1/2 weeks	Grab	25	66
Outfall 610 (X-623 Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hour total		
pH	SU	1/week	Grab		
Trichloroethene	Fg/L	1/2 weeks	Grab	10	10
1,2-trans-dichloroethene	Fg/L	1/2 weeks	Grab	25	66
Outfall 611 (X-622T Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hour total		
Trichloroethene	Fg/L	1/2 weeks	Grab	10	10

Table 2.3. DOE NPDES permit summary for December 2002 (continued)

Effluent characteristics		Monitoring requirements		Discharge limitations	
Parameter	Units	Measurement frequency	Sampling type	Concentration	
				30-day	Daily
Outfall 612 (X-625 Groundwater Treatment Facility)					
Flow rate	MGD	Daily	24-hour total[a]		
pH	SU	1/2 weeks	Grab		
Iron, total recoverable	Fg/L	1/2 weeks	Grab		
Trichloroethene	Fg/L	1/2 weeks	Grab	10	10
Outfall 613 (X-6002 Particulate Separator)					
Flow rate	MGD	Daily	24-hour total[a]		
Chlorine, total residual	mg/L	1/2 weeks	Grab		
Total suspended solids	mg/L	1/2 weeks	Grab		

[a]Estimated.
[b]Summer only.
[c]No detectable PCBs.

Table 2.4. 2002 DOE NPDES discharge and compliance rates

Parameter	NPDES compliance rate (%)	Number of samples[a]	Concentration			Units
			Minimum	Maximum	Average[b]	
Outfall 012 (X-2230M Holding Pond)						
Flow rate	*c*	253	0.020	32.574	0.573	MGD
pH	100	26	6.72	8.4	7.7	SU
Total suspended solids	100	25(5)	< 2	57.6	—	mg/L
30-day average	100	12(1)	0.61	14.1	4.5	mg/L
Oil and grease, total	100	25(25)	< 5	< 5	—	mg/L
30-day average	100	12(12)	< 5	< 5		mg/L
Phosphorus, total	*d*	22(18)	< 0.05	0.17	—	mg/L
Chlorine, total residual	*d*	12(0)	0.07	0.24	0.14	mg/L
Chromium, hexavalent	*d*	22(22)	< 0.01	< 0.01	—	mg/L
Chromium, total	*d*	23(8)	1	13.1	—	Fg/L
Iron, total recoverable	*d*	3(0)	365	1300	905	Fg/L
Trichloroethene	*d*	25(25)	< 1	< 1	—	Fg/L
PCBs	*e*	4(4)	< 0.5	< 1	—	Fg/L
Outfall 013 (X-2230N Holding Pond)						
Flow rate	*c*	253	0	34.678	0.693	MGD
pH	100	26	7.1	8.9	7.9	SU
Total suspended solids	100	25(15)	< 2	12.6	—	mg/L
30-day average	100	12(4)	0.5	11.2	—	mg/L
Oil and grease, total	100	25(25)	< 5	< 5	—	mg/L
30-day average	100	12(12)	< 5	< 5	—	mg/L
Phosphorus, total	*d*	22(21)	< 0.05	0.06	—	mg/L
Chlorine, total residual	*d*	12(0)	0.03	0.25	0.12	mg/L
Chromium, hexavalent	*d*	22(22)	< 0.01	< 0.01	—	mg/L
Chromium, total	*d*	23(9)	< 1	11.1	—	Fg/L
PCBs	*e*	4(4)	< 0.5	< 1	—	Fg/L
Outfall 015 (X-624 Groundwater Treatment Facility)						
Flow rate	*c*	365	0	0.110	0.008	MGD
Trichloroethene	100	25(18)	< 1	8	—	Fg/L
30-day average	100	12(7)	< 1	5.1	—	Fg/L
PCBs	*e*	4(4)	< 0.5	< 1	—	Fg/L
Outfall 608 (X-622 Groundwater Treatment Facility)						
Flow rate	*c*	365	0.014	0.060	0.036	MGD
pH	*d*	55	6.8	8	7.6	SU
Zinc, total	*d*	22(2)	< 1.69	16.1	7.1	Fg/L
Trichloroethene	100	25(22)	< 1	1.3	—	Fg/L
1,2-trans-dichloroethene	100	25(25)	< 1	< 1	—	Fg/L
30-day average	100	12(12)	< 1	< 1	—	Fg/L

Table 2.4. 2002 DOE NPDES discharge and compliance rates (continued)

Parameter	NPDES compliance rate (%)	Number of samples[a]	Concentration			Units
			Minimum	Maximum	Average[b]	
Outfall 610 (X-623 Groundwater Treatment Facility)						
Flow rate	*c*	365	0	0.037	0.005	MGD
pH	*d*	52	6.8	8.3	7.6	SU
Zinc, total	*d*	21(0)	4	36.6	14.8	Fg/L
Trichloroethene	92	24(18)	< 1	11.3	—	Fg/L
30-day average	100	12(8)	< 1	7.3	—	Fg/L
1,2-trans-dichloroethene	100	24(24)	< 1	< 1	—	Fg/L
30-day average	100	12(12)	< 1	< 1	—	Fg/L
Outfall 611 (X-622T Groundwater Treatment Facility)						
Flow rate	*c*	365	0.018	0.049	0.029	MGD
Trichloroethene	100	25(25)	< 1	< 1	—	Fg/L
30-day average	100	12(12)	< 1	< 1	—	Fg/L
Outfall 612 (X-625 Groundwater Treatment Facility)						
Flow rate	*c*	31	0.00006	0.00057	0.0001	MGD
pH	*d*	2	6.75	6.93	6.84	SU
Iron, total recoverable	*d*	2(0)	39,600	40,300	39,950	Fg/L
Trichloroethene	100	2(2)	< 1	< 1	—	Fg/L
30-day average	100	1(1)	< 1	< 1	—	Fg/L
Outfall 613 (X-6002 Particulate Separator)						
Flow rate	*c*	31	0.000075	0.000075	0.00008	MGD
Total suspended solids	*d*	2(0)	2.2	3.4	2.8	mg/L
Chlorine, total residual	*d*	2(0)	0.04	0.07	0.06	mg/L

[a]Number in parentheses is the number of samples that were below the detection limit.

[b]Averages were not calculated for outfalls which 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.

[c]Flow rate does not have a numerical limit; therefore, no compliance rates are generated.

[d]Monitoring only required; therefore, no compliance rates are generated.

[e]The permit specifies no detectable PCBs in the effluent without setting a numerical limit of detection.

Table 2.5. 2002 USEC NPDES discharge monitoring results

Parameter	Number of samples[a]	Concentration			Units
		Minimum	Maximum	Average[b]	
Outfall 001 (X-230J7 East Holding Pond)					
Arsenic, total recoverable	12(6)	ND	25	—	Fg/L
Copper, total recoverable	12(1)	< 3.09	13.2	7	Fg/L
Fluoride, total	12(0)	0.2	0.4	0.3	mg/L
Flow rate	365	0.476	4.244	1.742	MGD
Manganese, total recoverable	12(0)	4	21	11	Fg/L
Nickel, total recoverable	52(20)	ND	403	—	Fg/L
Oil and grease, total	52(52)	ND	< 5.0	—	mg/L
pH	52	7.46	8.39	7.94	SU
Total suspended solids	52(46)	ND	8.8	—	mg/L
Zinc, total recoverable	12(0)	8	36	20	Fg/L
Outfall 002 (X-230K South Holding Pond)					
Flow rate	365	0	6.652	1.092	MGD
Fluoride, total	12(0)	0.1	0.5	0.3	mg/L
Manganese, total recoverable	51(0)	26	781	209	Fg/L
Mercury, total recoverable	24(16)	ND	0.0009	—	Fg/L
Oil and grease, total	51(51)	ND	< 5.0	—	mg/L
pH	51	7.25	8.86	7.90	SU
Silver, total recoverable	52(34)	ND	8.69	—	Fg/L
Thallium, total recoverable	25(10)	ND	57	—	Fg/L
Total suspended solids	51(1)	ND	36.2	12	mg/L
Outfall 003 (X-6619 Sewage Treatment Plant)					
Acute toxicity, *Ceriodaphnia dubia*	4(4)	ND	ND	—	TUa
Biochemical oxygen demand	52(52)	ND	< 5	—	mg/L
Chlorine, total residual	127(127)	ND	ND	—	mg/L
Copper, total recoverable	26(0)	23.9	296	46	Fg/L
Fecal coliform	27(1)	ND	43	9	#/100 mL
Flow rate	365	0.048	0.714	0.296	MGD
Mercury, total recoverable	12(0)	0.0002	0.0149	0.0041	Fg/L
Nitrogen, ammonia	26(21)	ND	9.1	—	mg/L
Nitrogen, nitrate	12(0)	3.1	7.5	5.1	mg/L
Oil and grease, total	4(4)	ND	< 5.0	—	mg/L
pH	250	7.13	8.05	7.56	SU
Silver, total recoverable	12(9)	ND	3	—	Fg/L
Total suspended solids	52(51)	ND	3	—	mg/L
Zinc, total recoverable	12(0)	15	48.4	33.6	Fg/L
Outfall 004 (Cooling Tower Blowdown)					
Acute toxicity, *Ceriodaphnia dubia*	4(0)	1.4	1.6	1.5	TUa
Acute toxicity, *Pimephales promelas*	4(0)	1	100	29	TUa
Copper, total recoverable	12(0)	2	15.2	9	Fg/L
Flow rate	235	0	1.66	1.041	MGD

Table 2.5. 2002 USEC NPDES discharge monitoring results (continued)

Parameter	Number of samples[a]	Concentration			Units
		Minimum	Maximum	Average[b]	
Outfall 004 (Cooling Tower Blowdown) (continued)					
Oil and grease, total	12(12)	ND	< 5.0	—	mg/L
Oxidants, total residual	50(49)	ND	0.1	—	mg/L
pH	12	7.09	7.58	7.36	SU
Solids, dissolved, sum of	12(0)	182	353	310	mg/L
Total suspended solids	12(5)	ND	6.4	—	mg/L
Zinc, total recoverable	12(0)	19	53.2	36	Fg/L
Outfall 005 (X-611B Lime Sludge Lagoon)					
Flow rate	249	0.179	14.81	2.416	MGD
PCB, Total	4(4)	ND	< 1	—	Fg/L
pH	52	7.84	9.25	8.65	SU
Total suspended solids	52(1)	ND	12.8	4.5	mg/L
Outfall 009 (X-230L North Holding Pond)					
Flow rate	363	0.101	3.1	0.594	MGD
Fluoride, total	12(0)	0.3	0.4	0.3	mg/L
Manganese, total recoverable	12(0)	45	194	112	Fg/L
Oil and grease, total	12(12)	ND	< 5.0	—	mg/L
pH	52	7.42	8.52	7.97	SU
Total suspended solids	52(8)	ND	97	—	mg/L
Zinc, total recoverable	12(1)	ND	88.1	28.9	Fg/L
Outfall 010 (X-230J5 Northwest Holding Pond)					
Flow rate	305	0.088	0.531	0.245	MGD
Manganese, total recoverable	26(0)	8.5	102	42.7	Fg/L
Oil and grease, total	12(11)	ND	6.2	—	mg/L
pH	27	7.3	8.61	7.83	SU
Total suspended solids	26(21)	ND	25.4	—	mg/L
Zinc, total recoverable	12(1)	ND	44.5	27	Fg/L
Outfall 011 (X-230J6 Northeast Holding Pond)					
Copper, total recoverable	12(1)	ND	11.2	5	Fg/L
Flow rate	327	0.014	0.431	0.073	MGD
Fluoride, total	12(0)	0.03	0.4	0.3	mg/L
Oil and grease, total	26(26)	ND	< 5.0	—	mg/L
pH	27	7.1	8.58	7.77	SU
Total suspended solids	26(21)	ND	11.2	—	mg/L
Water temperature	26	6.7	22	15	°C
Zinc, total recoverable	12(0)	5	124	35	Fg/L
Outfall 602 (X-621 Coal Pile Runoff Treatment Facility)					
Flow rate	365	0	0.06	0.020	MGD
Iron, total	26(0)	19.9	640	348	Fg/L
Manganese, total	26(0)	0.89	431	74	Fg/L
pH	26	8.23	9.94	8.78	SU
Total suspended solids	26(6)	ND	23.4	—	mg/L

Table 2.5. 2002 USEC NPDES discharge monitoring results (continued)

Parameter	Number of samples[a]	Concentration			Units
		Minimum	Maximum	Average[b]	
Outfall 604 (X-700 Biodenitrification Facility)					
Copper, total	4(0)	3.95	33.6	15.0	Fg/L
Flow rate	150	0	0.053	0.009	MGD
Iron, total	4(0)	94.2	1350	425	Fg/L
Nickel, total	4(1)	ND	17.3	—	Fg/L
Nitrogen, nitrate	4(1)	ND	17	—	mg/L
pH	4	7.19	8.13	7.74	SU
Zinc, total	4(0)	5.74	46.5	20.2	Fg/L
Outfall 605 (X-705 Decontamination Microfiltration System)					
Chromium, hexavalent	7(7)	ND	< 0.01	—	mg/L
Chromium, total	7(1)	ND	32.4	10.4	Fg/L
Copper, total	7(1)	ND	50.4	17.8	Fg/L
Flow rate	211	0	0.027	0.003	MGD
Iron, total	7(0)	10.6	1830	284	Fg/L
Nickel, total	7(1)	ND	89	38	Fg/L
Nitrogen, ammonia	7(7)	ND	< 0.1	—	mg/L
Nitrogen Kjeldahl, total	7(0)	0.5	1.1	0.8	mg/L
Nitrogen, nitrate	7(0)	0.26	17	6.2	mg/L
Nitrogen, nitrite	7(7)	ND	< 0.2	—	mg/L
Oil and grease, total	7(7)	ND	< 5	—	mg/L
pH	7	7.61	8.6	8.17	SU
Sulfate	7(0)	67	96	77	mg/L
Total suspended solids	7(7)	ND	< 2	—	mg/L
Trichloroethene	7(6)	ND	5	—	Fg/L
Zinc, total	7(1)	ND	40.8	16	Fg/L
Station Number 801 (Scioto River control sample, upstream of Outfalls 003 and 004)					
48-hr. acute toxicity, *Ceriodaphnia dubia*	4(4)	ND	ND	—	% affected
96-hr. acute toxicity, *Pimephales promelas*	4(4)	ND	ND	—	% affected
Station Number 901 (Scioto River near-field sample, midplume downstream of Outfalls 003 and 004)					
48-hr. acute toxicity, *Ceriodaphnia dubia*	4(4)	ND	ND	—	% affected
96-hr. acute toxicity, *Pimephales promelas*	4(4)	ND	ND	—	% affected
Station Number 902 (downstream of Outfall 001)					
Water temperature	104	8	28	18	°C
Station Number 903 (downstream of Outfall 002)					
Water temperature	104	1	28	16	°C

[a]Number in parentheses is the number of samples that were below the detection limit.

[b]Averages were not calculated for outfalls which 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, if the detection limit was available. Otherwise, the average was calculated using only the detected values.

ND – not detected.

Table 2.6. Radionuclides and PCBs in surface water runoff samples from DOE depleted uranium hexafluoride cylinder storage yards for 2002

Sample location	Parameter[a]	Number of samples[b]	Minimum	Maximum	Average[c]	DCG[d]
X745-C1	americium-241	2(2)	< 0.0186	< 0.2015		30
	neptunium-237	2(2)	0	0		30
	plutonium-238	2(2)	< 0.06355	< 0.08847		40
	plutonium-239/240	2(2)	0	< 0.04423		30
	technetium-99	12(12)	0	< 29.7		100,000
	total PCBs	2(2)	< 1	< 1		
	uranium	12(0)	1.489	5.637	3.212	
	uranium-233/234	12(0)	0.4821	2.016	1.226	500
	uranium-235	12(11)	0	0.1091		600
	uranium-236	12(12)	0	< 0.1959		500
	uranium-238	12(0)	0.5004	1.888	1.073	600
X745-C2	americium-241	2(2)	< 0.1347	< 0.1889		30
	neptunium-237	2(2)	0	0		30
	plutonium-238	2(2)	< 0.03789	< 0.04149		40
	plutonium-239/240	2(2)	< 0.0000414	< 0.1137		30
	technetium-99	12(12)	0	< 7.98		100,000
	total PCBs	2(2)	< 1	< 1		
	uranium	12(1)	< 0.507	10.37	4.31	
	uranium-233/234	12(2)	< 0.07599	1.89		500
	uranium-235	12(11)	0	0.1102		600
	uranium-236	12(12)	0	< 0.02099		500
	uranium-238	12(1)	< 0.1703	3.469	1.445	600
X745-C3	americium-241	2(2)	0	< 0.07236		30
	neptunium-237	2(2)	0	0		30
	plutonium-238	2(2)	< 0.03099	< 0.05646		40
	plutonium-239/240	2(2)	0	< 0.01881		30
	technetium-99	12(12)	0	< 11.8		100,000
	total PCBs	2(2)	< 1	< 1		
	uranium	12(5)	< 0.04617	1.946		
	uranium-233/234	12(3)	< 0.04313	1.072		500
	uranium-235	12(12)	0	< 0.08957		600
	uranium-236	12(12)	0	< 0.06882		500
	uranium-238	12(5)	< 0.02016	0.6467		600
X745-C4	americium-241	2(2)	< 0.000282	< 0.03925		30
	neptunium-237	2(2)	0	< 0.03201		30
	plutonium-238	2(2)	< 0.06889	< 0.07975		40
	plutonium-239/240	2(2)	0	0		30
	technetium-99	12(11)	0	12.6		100,000
	total PCBs	2(2)	< 1	< 1		
	uranium	12(1)	< 0.6459	8.318	2.845	
	uranium-233/234	12(6)	< 0.08777	1.913		500
	uranium-235	12(11)	0	0.1584		600
	uranium-236	12(12)	0	< 0.06056		500
	uranium-238	12(0)	0.2152	2.774	0.950	600

Table 2.6. Radionuclides and PCBs in surface water runoff samples from DOE depleted uranium hexafluoride cylinder storage yards for 2002 (continued)

Sample location	Parameter[a]	Number of samples[b]	Minimum	Maximum	Average[c]	DCG[d]
X745-E1	americium-241	2(2)	0	< 0.0793		30
	neptunium-237	2(2)	0	0		30
	plutonium-238	2(2)	0	< 0.09991		40
	plutonium-239/240	2(2)	0	< 0.0000261		30
	technetium-99	12(11)	0	14.1		100,000
	total PCBs	2(2)	< 1	< 1		
	uranium	12(6)	0	2.093		
	uranium-233/234	12(5)	< 0.01637	0.9113		500
	uranium-235	12(12)	0	< 0.08817		600
	uranium-236	12(12)	0	< 0.03572		500
	uranium-238	12(4)	0	0.6955		600

[a]Uranium and total PCBs are reported in Fg/L; all other parameters are reported in pCi/L.
[b]Number in parentheses is the number of samples that were below the detection limit.
[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.
[d]Derived Concentration Guide (DCG)(pCi/L). DCGs are not available for total PCBs and uranium.

Table 2.7. Ambient air monitoring program summary for radionuclides and fluoride – 2002

Sampling Location	Parameter[a]	No. of measurements[b]	Minimum[c]	Maximum[c]	Average[c]
		On-site air samplers			
A8	americium-241	12(12)	0	1.1E-05	
	fluoride	52(17)	1.4E-02	7.0E-02	3.8E-02
	neptunium-237	12(12)	0	1.1E-05	
	plutonium-238	12(12)	0	2.8E-05	
	plutonium-239/240	12(12)	0	1.1E-05	
	technetium-99	12(12)	0	3.5E-03	
	uranium	12(0)	3.5E-04	1.6E-03	7.0E-04
	uranium-233/234	12(1)	7.2E-05	1.3E-03	3.5E-04
	uranium-235	12(7)	0	4.9E-05	
	uranium-236	12(11)	0	7.7E-06	
	uranium-238	12(0)	1.2E-04	5.2E-04	2.3E-04
A10	americium-241	12(12)	0	3.1E-05	
	fluoride	52(7)	2.3E-02	1.9E-01	6.1E-02
	neptunium-237	12(12)	0	1.2E-05	
	plutonium-238	12(12)	0	9.3E-06	
	plutonium-239/240	12(12)	0	5.7E-06	
	technetium-99	12(12)	0	3.4E-03	
	uranium	12(0)	4.3E-04	8.9E-04	6.3E-04
	uranium-233/234	12(0)	1.9E-04	3.4E-04	2.7E-04
	uranium-235	12(6)	0	2.6E-05	
	uranium-236	12(11)	0	1.9E-05	
	uranium-238	12(0)	1.4E-04	3.0E-04	2.1E-04
A29	americium-241	12(12)	0	8.6E-05	
	fluoride	52(14)	1.1E-02	1.0E-01	5.1E-02
	neptunium-237	12(12)	0	1.6E-05	
	plutonium-238	12(12)	0	1.2E-05	
	plutonium-239/240	12(12)	0	6.1E-06	
	technetium-99	12(12)	0	5.1E-03	
	uranium	12(1)	4.7E-04	1.4E-03	8.2E-04
	uranium-233/234	12(0)	1.9E-04	1.5E-03	4.4E-04
	uranium-235	12(8)	1.6E-09	4.2E-05	
	uranium-236	12(12)	0	9.2E-06	
	uranium-238	12(1)	1.6E-04	4.5E-04	2.7E-04
A36	americium-241	7(7)	2.3E-06	1.5E-04	
	fluoride	52(0)	1.7E-02	2.2E-01	7.6E-02
	neptunium-237	7(6)	0	2.0E-05	
	plutonium-238	7(7)	0	1.0E-05	
	plutonium-239/240	7(7)	0	5.9E-06	
	technetium-99	7(7)	0	3.8E-03	
	uranium	7(0)	2.8E-04	1.3E-02	2.9E-03
	uranium-233/234	7(0)	2.5E-04	4.9E-03	1.1E-03
	uranium-235	7(2)	1.0E-05	2.7E-04	
	uranium-236	7(6)	0	2.1E-05	
	uranium-238	7(0)	9.2E-05	4.3E-03	9.7E-04
A40	fluoride	51(1)	3.2E-02	2.4E-01	8.8E-02

Table 2.7. Ambient air monitoring program summary for radionuclides and fluoride – 2002 (continued)

Sampling Location	Parameter[a]	No. of measurements[b]	Minimum[c]	Maximum[c]	Average[c]
		On-site air samplers			
T7	americium-241	12(12)	0	1.7E-05	
	neptunium-237	12(12)	0	1.1E-05	
	plutonium-238	12(12)	0	1.4E-05	
	plutonium-239/240	12(12)	0	8.3E-06	
	technetium-99	12(12)	0	3.6E-03	
	uranium	12(0)	3.9E-04	1.3E-03	6.5E-04
	uranium-233/234	12(0)	1.2E-04	4.1E-04	2.6E-04
	uranium-235	12(7)	0	2.8E-05	
	uranium-236	12(12)	00	6.9E-06	
	uranium-238	12(0)	1.3E-04	4.5E-04	2.2E-04
		Off-site air samplers			
A3	americium-241	12(12)	0	1.1E-05	
	fluoride	52(7)	1.3E-02	1.1E-01	5.6E-02
	neptunium-237	12(12)	0	1.8E-05	
	plutonium-238	12(12)	0	2.3E-05	
	plutonium-239/240	12(12)	0	8.4E-06	
	technetium-99	12(11)	0	5.4E-03	
	uranium	12(0)	3.5E-04	1.4E-03	7.6E-04
	uranium-233/234	12(0)	1.4E-04	2.8E-03	4.9E-04
	uranium-235	12(8)	0	1.3E-04	
	uranium-236	12(12)	0	1.1E-05	
	uranium-238	12(0)	1.2E-04	4.5E-04	2.5E-04
A6	americium-241	12(12)	0	1.9E-05	
	fluoride	49(20)	2.2E-02	1.5E-01	4.5E-02
	neptunium-237	12(12)	0	1.7E-05	
	plutonium-238	12(12)	0	1.6E-05	
	plutonium-239/240	12(12)	0	7.3E-06	
	technetium-99	12(12)	0	5.2E-03	
	uranium	12(1)	4.2E-04	1.0E-03	7.2E-04
	uranium-233/234	12(0)	1.4E-04	6.4E-04	2.9E-04
	uranium-235	12(5)	3.7E-10	4.0E-05	
	uranium-236	12(11)	0	1.2E-05	
	uranium-238	12(1)	1.4E-04	3.4E-04	2.4E-04
A9	americium-241	12(12)	0	2.9E-05	
	fluoride	52(15)	1.0E-02	7.8E-02	4.0E-02
	neptunium-237	12(12)	0	1.7E-05	
	plutonium-238	12(12)	0	9.1E-06	
	plutonium-239/240	12(12)	0	7.8E-06	
	technetium-99	12(11)	0	1.1E-02	
	uranium	12(0)	5.0E-04	9.7E-04	7.1E-04
	uranium-233/234	12(0)	1.4E-04	2.9E-03	5.1E-04
	uranium-235	12(6)	0	1.0E-04	
	uranium-236	12(11)	0	2.0E-05	
	uranium-238	12(0)	1.7E-04	3.1E-04	2.4E-04

Table 2.7. Ambient air monitoring program summary for radionuclides and fluoride – 2002 (continued)

Sampling Location	Parameter[a]	No. of measurements[b]	Minimum[c]	Maximum[c]	Average[c]
A12	americium-241	12(12)	0	3.2E-05	
	fluoride	52(6)	2.5E-02	1.5E-01	5.1E-02
	neptunium-237	12(12)	0	9.4E-06	
	plutonium-238	12(12)	0	8.2E-06	
	plutonium-239/240	12(12)	0	8.4E-06	
	technetium-99	12(12)	0	4.0E-03	
	uranium	12(0)	4.1E-04	8.9E-04	6.8E-04
	uranium-233/234	12(0)	1.4E-04	4.5E-04	2.9E-04
	uranium-235	12(6)	2.8E-06	2.3E-05	
	uranium-236	12(11)	0	1.3E-05	
	uranium-238	12(0)	1.3E-04	3.0E-04	2.3E-04
A15	americium-241	12(12)	0	2.1E-05	
	fluoride	52(8)	2.3E-02	1.0E-01	4.5E-02
	neptunium-237	12(12)	0	1.6E-05	
	plutonium-238	12(12)	0	1.8E-05	
	plutonium-239/240	12(12)	0	9.2E-06	
	technetium-99	12(12)	0	4.4E-03	
	uranium	12(0)	3.8E-04	1.4E-03	7.2E-04
	uranium-233/234	12(0)	1.6E-04	2.2E-03	4.2E-04
	uranium-235	12(8)	0	1.0E-04	
	uranium-236	12(12)	0	6.3E-06	
	uranium-238	12(0)	1.3E-04	4.8E-04	2.4E-04
A23	americium-241	12(12)	0	1.8E-05	
	fluoride	52(12)	1.8E-02	3.0E-01	6.4E-02
	neptunium-237	12(12)	0	2.7E-05	
	plutonium-238	12(12)	0	9.3E-06	
	plutonium-239/240	12(12)	0	4.7E-06	
	technetium-99	12(12)	0	4.9E-03	
	uranium	12(1)	4.0E-04	4.2E-03	1.0E-03
	uranium-233/234	12(0)	1.8E-04	8.5E-03	9.8E-04
	uranium-235	12(5)	0	3.6E-04	
	uranium-236	12(11)	0	1.5E-05	
	uranium-238	12(1)	1.3E-04	1.4E-03	3.4E-04
A24	americium-241	12(12)	0	2.3E-05	
	fluoride	52(9)	1.0E-02	1.2E-01	6.1E-02
	neptunium-237	12(12)	0	1.6E-05	
	plutonium-238	12(11)	0	1.3E-05	
	plutonium-239/240	12(12)	0	7.9E-06	
	technetium-99	12(12)	0	4.7E-03	
	uranium	12(0)	4.4E-04	1.4E-03	8.3E-04
	uranium-233/234	12(0)	1.7E-04	2.2E-03	5.8E-04
	uranium-235	12(7)	0	7.7E-05	
	uranium-236	12(12)	0	9.0E-06	
	uranium-238	12(0)	1.5E-04	4.7E-04	2.8E-04

Table 2.7. Ambient air monitoring program summary for radionuclides and fluoride – 2002 (continued)

Sampling Location	Parameter[a]	No. of measurements[b]	Minimum[c]	Maximum[c]	Average[c, d]
A28	americium-241	12(11)	0	1.7E-05	
	fluoride	52(13)	2.7E-02	7.9E-02	4.5E-02
	neptunium-237	12(12)	0	1.5E-05	
	plutonium-238	12(12)	0	1.1E-05	
	plutonium-239/240	12(12)	0	7.0E-06	
	technetium-99	12(11)	0	5.0E-03	
	uranium	12(0)	1.1E-04	9.3E-04	5.0E-04
	uranium-233/234	12(0)	3.1E-05	5.0E-04	2.2E-04
	uranium-235	12(10)	0	2.0E-05	
	uranium-236	12(12)	0	1.5E-05	
	uranium-238	12(0)	3.6E-05	3.1E-04	1.7E-04
A37	americium-241	12(12)	0	3.3E-05	
(background)	fluoride	52(7)	2.4E-02	1.1E-01	5.1E-02
	neptunium-237	12(12)	0	1.3E-05	
	plutonium-238	12(12)	0	1.4E-05	
	plutonium-239/240	12(12)	0	3.8E-06	
	technetium-99	12(12)	0	4.1E-03	
	uranium	12(0)	4.0E-04	8.2E-04	6.3E-04
	uranium-233/234	12(0)	1.2E-04	1.2E-03	3.1E-04
	uranium-235	12(8)	9.5E-09	6.6E-05	
	uranium-236	12(10)	0	1.2E-05	
	uranium-238	12(0)	1.3E-04	2.8E-04	2.1E-04
A41	americium-241	12(12)	0	2.4E-05	
	fluoride	52(12)	2.3E-02	8.0E-02	4.2E-02
	neptunium-237	12(12)	0	1.4E-05	
	plutonium-238	12(12)	0	1.5E-05	
	plutonium-239/240	12(12)	0	4.6E-06	
	technetium-99	12(12)	0	8.8E-03	
	uranium	12(0)	4.8E-04	1.7E-03	9.4E-04
	uranium-233/234	12(0)	1.2E-04	9.0E-04	3.9E-04
	uranium-235	12(5)	0	2.8E-05	
	uranium-236	12(12)	0	3.8E-06	
	uranium-238	12(0)	1.6E-04	5.6E-04	3.2E-04

[a]All parameters are measured in pCi/m^3 with the exception of uranium and fluoride which are measured in Fg/m^3.

[b]Radiological samples are analyzed monthly, samples for fluoride are analyzed weekly. Number in parentheses is the number of samples that were below the detection limit.

[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).

[d]For radionuclides, averages are not calculated for locations that had greater than 15% of the results 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. Averages were calculated for fluoride at all sampling locations.

Table 2.8. DOE gamma radiation monitoring program quarterly radiation measurements (mR) – 2002

Location	First quarter[a]	Second quarter[a]	Third quarter[a]	Fourth quarter[a]
#1404A	19	24	25	25
#518	20	24	24	26
#862	23	28	31	31
#874	115	135	150	160
#906	18	22	22	24
#933	29	35	38	40
A12	20	24	26	26
A15	21	25	26	28
A23	20	26	26	27
A24	21	25	26	27
A28	19	23	25	24
A29	21	26	26	27
A3	19	26	24	26
A36	20	25	25	26
A40	17	21	21	23
A6	20	24	25	25
A8	22	26	28	30
A9	21	24	26	28
X-230J2	22	25	26	29

[a]Days in field: first quarter 84, second quarter 91, third quarter 98, fourth quarter 99.

Table 2.9. Quarterly dose measurements (mrem/quarter[a]) at locations near the depleted uranium cylinder storage yards – 2002

Location	First quarter			Second quarter		
	Deep[b,c]		Shallow[b,d]	Deep[b,c]		Shallow[b,d]
	X+G	N		X+G	N	
#41	ND	ND	ND	ND	ND	ND
#868	150	40	190	220	30	250
#874	70	40	110	90	6800[e]	6900[e]
#882	140	30	170	150	50	200
#890	ND	ND	ND	ND	ND	ND

Location	Third quarter			Fourth quarter		
	Deep[b,c]		Shallow[b,d]	Deep[b,c]		Shallow[b,d]
	X+G	N		X+G	N	
#41	ND	ND	ND	ND	ND	ND
#868	110	ND	110	190	ND	190
#874	210	ND	210	120	ND	120
#882	180	ND	180	180	ND	180
#890	ND	ND	ND	ND	ND	ND

[a]Days in field: first quarter 84, second quarter 91, third quarter 98, fourth quarter 99.

[b]ND – not detected.

[c]Deep dose (dose equivalent at a tissue depth of 1 cm) applies to external whole body exposure and consists of x-ray and gamma radiation (X+G) and neutron radiation (N).

[d]Shallow dose (dose equivalent at a tissue depth of 0.007 cm) applies to exposure of the skin or an extremity.

[e]These results are most likely inaccurate and could have been caused by moisture in or damage to the dosimeter.

Table 2.10. Local surface water monitoring program results for chemical and radiological parameters – 2002

Location	Parameter[a,b]	April/May[c]	June[c]	August/ September[c]	December[c]
Scioto	aluminum	3550	715N	178BN	299
River	americium-241	0.07697U	na	0U	na
RW-1	antimony	13.9U	13.9U	18.4U	20.2B
(downstream)	arsenic	39U	39U	17.4U	17.4U
	barium	72.8	68.8	73.9	67.7
	beryllium	0.51B	0.184U	0.949U	0.279U
	cadmium	2.22U	2.22U	2.84BJ	2.21U
	calcium	62800	79200	59700J	83400
	chromium	13.1B	4.86B	4.24B	4.86B
	cobalt	4.09U	4.09U	2.53U	2.53U
	copper	4.73B	4.43B	3.52JU	3.52U
	fluoride	0.3	na	0.5	na
	iron	4190	1360N	299N	461
	lead	34.5U	34.5U	18.3U	18.3U
	lithium	7.47B	4.08B	13.5B	14.2B
	magnesium	22500	24700	27200	28700
	manganese	62.5	62.1	98.6	34.7
	molybdenum	6.34B	7.85B	8.45B	7.72B
	neptunium-237	0.08031U	na	-0.2055U	na
	nickel	13.8B	9.66U	8.22B	4.95U
	PCB, total	0.5U	1U	4U	1U
	phosphorus	271	215	114B	274
	plutonium-238	0.0267U	na	0.06148U	na
	plutonium-239	0.0267U	na	0.02049U	na
	potassium	4220B	3580B	5210BJ	5210B
	selenium	48.8U	48.8U	35.8U	35.8U
	silicon	7530	2510J	388*JN	2980
	silver	5.52U	5.52U	4.48U	4.48U
	sodium	19000J	20200	46300	35700
	technetium-99	8.13U	na	8.49U	na
	thallium	22.3U	22.3U	13.2U	13.8B
	tin	13U	13U	13.2U	13.2U
	titanium	41.2	1.49U	1.9U	1.9U
	total phosphate as phosphorus	0.28	na	0.15	na
	uranium	1.487	na	1.062	na
	uranium-233/234	0.3674	na	0.4279	na
	uranium-235	0.05911U	na	-0.02112U	na
	uranium-236	0.01769U	na	0.01896U	na
	uranium-238	0.4902	na	0.3601	na
	vanadium	6.17B	3.09U	1.51B	1.57B
	zinc	15.7B	10.9B	5.69B	14B

Table 2.10. Local surface water monitoring program results for chemical and radiological parameters – 2002 (continued)

Location	Parameter[a,b]	April/May[c]	June[c]	August/ September[c]	December[c]
Scioto	aluminum	3170	1100N	888N	256B
River	americium-241	0.04618U	na	0.03967U	na
RW-6	antimony	13.9U	13.9U	18.4U	18.4U
(upstream)	arsenic	39U	39U	22.5B	17.4U
	barium	74.6	70.8	87.5	63.5
	beryllium	1.19B	0.184U	0.949U	0.38B
	cadmium	2.22U	2.22U	2.21JU	2.21U
	calcium	66500	78600	71800*J	79300
	chromium	10.8B	4.35U	6.96B	4.57B
	cobalt	4.09U	4.09U	2.53U	2.53U
	copper	7.06B	3.09U	4.84*BJ	3.52U
	fluoride	0.3	na	0.5	na
	iron	4000	2120	977	419
	lead	34.5U	34.5U	18.3U	18.3U
	lithium	8.59B	3.96B	23.1	14B
	magnesium	23700	24600	27600	27300
	manganese	72.5	76.7	95.7	42.2
	molybdenum	5.67B	4.24B	12.3B	9.1B
	neptunium-237	-0.1479U	na	0U	na
	nickel	11.7B	9.66U	8.64B	4.95U
	PCB, total	0.5U	1U	2U	1U
	phosphorus	267	197	181	273
	plutonium-238	0.08801U	na	0.09432U	na
	plutonium-239/240	-0.08852U	na	0.03141U	na
	potassium	4740B	3260B	6050BJ	5050B
	selenium	48.8U	48.8U	35.8U	39.9B
	silicon	6780	3020J	3310JN	2750
	silver	5.52U	5.52U	4.48U	4.48U
	sodium	19400J	20700	47200	35100
	technetium-99	6.78U	na	8.11U	na
	thallium	22.3U	22.3U	13.2U	13.2U
	tin	13U	13U	13.2U	22.6B
	titanium	30.5	5.52B	21	1.9U
	total phosphate as phosphorus	0.28	na	0.2	na
	uranium	1.442U	na	1.043	na
	uranium-233/234	0.3481	na	0.5218	na
	uranium-235	-0.01709U	na	0.03576U	na
	uranium-236	0.01541U	na	0.01605U	na
	uranium-238	0.4871U	na	0.3448	na
	vanadium	7.62B	3.09U	5.81B	1.66B
	zinc	18.8	15.2B	9.68*B	16.2B

Table 2.10. Local surface water monitoring program results for chemical and radiological parameters – 2002 (continued)

Location	Parameter[a,b]	April/May[c]	September[c]
Little Beaver	americium-241	0.05512U	0.07073U
Creek	neptunium-237	-0.0885U	-0.03817U
RW-7	plutonium-238	-0.08882U	0.07613U
(downstream)	plutonium-239/240	0.0005608U	0U
	technetium-99	5.29U	11.2
	uranium	1.559	0.5729U
	uranium-233/234	2.424	1.098
	uranium-235	0.08796U	0.01575U
	uranium-236	0.01975U	-0.01414U
	uranium-238	0.5101	0.1911
RW-8	americium-241	-0.07501U	0U
(downstream)	neptunium-237	-0.05301U	0.03882U
	plutonium-238	-0.07929U	-0.03871U
	plutonium-239/240	0.02643U	0.03872U
	technetium-99	15.5	3.15U
	uranium	0.7702U	0.6318U
	uranium-233/234	1.561	0.789
	uranium-235	0.07335U	0.03973U
	uranium-236	0U	-0.03567U
	uranium-238	0.2473	0.2089
RW-12	americium-241	0.02372U	0.01825U
(upstream)	neptunium-237	-0.01528U	-0.1069U
	plutonium-238	-0.01864U	0U
	plutonium-239/240	0.0201U	0.1066U
	technetium-99	2.36U	1.13U
	uranium	0.3181U	0.1805U
	uranium-233/234	0.1551U	0.1126U
	uranium-235	0.04252U	0.05208U
	uranium-236	-0.01909U	-0.03117U
	uranium-238	0.1004	0.05618U
Big Beaver Creek	americium-241	0.1051U	0.184
RW-13	neptunium-237	-0.3204U	0.06631U
(downstream)	plutonium-238	0.001164U	0.09919U
	plutonium-239/240	-0.02241U	0.06613U
	technetium-99	6.01U	8.24U
	uranium	0.3243U	0.6284U
	uranium-233/234	0.4544R	1.299
	uranium-235	0.07233RU	0.04273U
	uranium-236	0.01624RU	-0.01918U
	uranium-238	0.0976RU	0.2074
RW-5	americium-241	0.0717U	0.1047U
(upstream)	neptunium-237	-0.1192U	-0.1336U
	plutonium-238	-0.07507U	0.04441U
	plutonium-239/240	0.02591U	-0.1332U
	technetium-99	6.19U	8.31U
	uranium	-0.1833U	0.482U
	uranium-233/234	0.287U	0.8578
	uranium-235	0.09305U	0.03919U
	uranium-236	0.06212U	-0.0176U
	uranium-238	-0.0764U	0.1585

Table 2.10. Local surface water monitoring program results for chemical and radiological parameters – 2002 (continued)

Location	Parameter[a,b]	April/May[c]	September[c]
Big Run Creek	americium-241	0.01817U	0.07269U
RW-2	neptunium-237	0.05789U	0.06353U
(downstream)	plutonium-238	0.03134U	0.03168U
	plutonium-239/240	0.03063U	0.03168U
	technetium-99	4.35U	3.67U
	uranium	0.2294U	0.5788U
	uranium-233/234	0.2022R	0.1097U
	uranium-235	0.01559RU	-0.06763U
	uranium-236	-0.00000163RU	-0.02024U
	uranium-238	0.07465RU	0.2006
RW-3	americium-241	0.02257U	0.03327U
(downstream)	neptunium-237	0.0005565U	-0.1524U
	plutonium-238	0.02161U	0.0608U
	plutonium-239/240	0.02217U	0.0912U
	technetium-99	9.66U	0.856U
	uranium	0.5476U	0.9803U
	uranium-233/234	0.6796	0.8241
	uranium-235	0.01612U	0.04729U
	uranium-236	-0.01448U	0U
	uranium-238	0.1815	0.3252
RW-33	americium-241	0.06596U	0.1056U
(upstream)	neptunium-237	-0.3247U	0U
	plutonium-238	-0.04421U	0.07426U
	plutonium-239/240	-0.04361U	-0.0495U
	technetium-99	4.01U	8.58U
	uranium	0.1623U	0.3366U
	uranium-233/234	-0.09202U	0.8945R
	uranium-235	0.09464	0.01724RU
	uranium-236	0.03399U	-0.01548RU
	uranium-238	0.03966U	0.1116RU
Background creeks	americium-241	0.09024U	0.07578U
RW-10N	neptunium-237	-0.08453U	0U
	plutonium-238	0.001704U	0.1576U
	plutonium-239/240	0.0005678U	0U
	technetium-99	5.72U	-1.13U
	uranium	0.5981U	0.1946U
	uranium-233/234	0.2746U	-0.06542RU
	uranium-235	0U	0.000001886RU
	uranium-236	0U	0.0145RU
	uranium-238	0.201	0.06533RU

Table 2.10. Local surface water monitoring program results for chemical and radiological parameters – 2002 (continued)

Location	Parameter[a,b]	April/May[c]	September[c]
Background creeks	americium-241	0.02407U	0.06917U
RW-10S	neptunium-237	-0.162U	-0.08222U
	plutonium-238	0.001167U	0.06149U
	plutonium-239/240	0.02449U	0.0205U
	technetium-99	5.52U	2.23U
	uranium	-0.04418U	-0.2939U
	uranium-233/234	0.1684U	-0.4347U
	uranium-235	0.02077U	0U
	uranium-236	0.01865U	-0.02189U
	uranium-238	-0.01818U	-0.09861U
RW-10E	americium-241	0.03906U	0.07881U
	neptunium-237	0.01287U	0U
	plutonium-238	0.0271U	0U
	plutonium-239/240	0.06962U	-0.04622U
	technetium-99	1.89U	0.36U
	uranium	0.1218U	0.4751U
	uranium-233/234	0.1361U	0.1491RU
	uranium-235	0.02398U	-0.01532RU
	uranium-236	0U	-0.02752RU
	uranium-238	0.03721U	0.1612R
RW-10W	americium-241	0.08351U	0.06887U
	neptunium-237	-0.0701U	-0.03111U
	plutonium-238	0.0006214U	0.03102U
	plutonium-239/240	-0.02454U	0.1241U
	technetium-99	1.87U	3U
	uranium	0.2001U	-0.0009572U
	uranium-233/234	0.1036U	-0.1462U
	uranium-235	-0.0213U	0.000000753U
	uranium-236	0.03825U	-0.06073U
	uranium-238	0.07035U	0.000003053U

[a]Parameters are reported in the following units: radionuclides [americium-241, neptunium-237, plutonium isotopes, technetium-99 and uranium isotopes (not including uranium)] in pCi/L, fluoride and total phosphate as phosphorus in mg/L, and all other parameters (metals, including uranium, and PCBs) in Fg/L.

[b]The derived concentration guide (DCG) for each radionuclide is as follows: americium-241, 30 pCi/L; neptunium-237, 30 pCi/L; plutonium-238, 40 pCi/L; plutonium-239/240, 30 pCi/L; technetium-99, 100,000 pCi/L; uranium-233/234, 500 pCi/L; uranium-235, 600 pCi/L; uranium-236, 500 pCi/L; uranium-238, 600 pCi/L. All results are well below these DOE standards. A DCG is not available for total uranium.

[c]Abbreviations and data qualifiers are as follows: * - duplicate analysis is not within control limits; B – result is less than the practical quantitation limit but greater than or equal to the instrument detection limit; J – estimated value; N – sample spike recovery is not within control limits; U – undetected; R – tracer recovery is less than 30% or greater than 110%. na – not analyzed.

Table 2.11. Sediment monitoring program results – 2002

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
		Scioto River			
		RM-6		*RM-1*	
		Upstream @ Piketon		*Downstream @ Lucasville*	
Aluminum	mg/kg	3060	5180	3130	5430*
Americium-241	pCi/g	0.04748U	-0.01478U	0.008193U	0.02237U
Antimony	mg/kg	1.74BN	2.47BN	1.37*NU	1.034*NU
Arsenic	mg/kg	5.71B	7.91B	8.04B	7.78B
Barium	mg/kg	46.2N	43.3	37.4N	57
Beryllium	mg/kg	0.27	0.303	0.28	0.315
Bismuth	mg/kg	3.41U	3.15U	4.37	2.124U
Cadmium	mg/kg	0.75B	0.647B	0.903B	0.664B
Calcium	mg/kg	19600	21800	21200	25100
Chromium	mg/kg	6.26N	8.58	15N	7.92
Cobalt	mg/kg	5.5	5.15	5.49	4.86
Copper	mg/kg	10.2	9.14	11.4	11.4
Iron	mg/kg	9990J	10900	11400*J	10500
Lead	mg/kg	8.97B	6.6B	8.33B	7.67B
Lithium	mg/kg	5.35	9.02	5.09	9.06
Magnesium	mg/kg	8530	7860	8870	5210
Manganese	mg/kg	293	267	289*	320
Mercury	mg/kg	0.025U	0.026	0.028	0.025U
Molybdenum	mg/kg	1.82B	0.877B	6.37	1.09B
Neptunium-237	pCi/g	0.03856U	-0.02228U	-0.04881U	0.007304U
Nickel	mg/kg	11.1	11.6	11.6	11.9
PCB-1016	µg/g	2U	1U	1U	1U
PCB-1221	µg/g	4U	2U	2U	2U
PCB-1232	µg/g	2U	2U	1U	2U
PCB-1242	µg/g	2U	1U	1U	1U
PCB-1248	µg/g	2U	1U	1U	1U
PCB-1254	µg/g	2U	1U	1U	1U
PCB-1260	µg/g	2U	1U	1U	1U
PCB-1268	µg/g	2U	1U	1U	1U
Phosphorus	mg/kg	275	313	307*	348
Plutonium-238	pCi/g	0.01538U	0.01483U	0.006953U	0.01454U
Plutonium-239/240	pCi/g	0.007692U	-0.007407U	0.006952U	0.007269U
Potassium	mg/kg	753	878N	501B	856N
Selenium	mg/kg	4.76U	4.01B	5.3B	4.81B
Silicon	mg/kg	179J	226J	175*J	189*J
Silver	mg/kg	0.538U	0.51B	0.546U	2.54B
Sodium	mg/kg	101JN	103JN	66JN	105JN
Technetium-99	pCi/g	0.000845U	0.121U	0.0166U	0.147
Thallium	mg/kg	2.17U	5.19B	4.88B	3.67B
Tin	mg/kg	13.3	4.71B	5.45B	1.84B
Titanium	mg/kg	41.9N	63.1N	36.6N	42N
Uranium	µg/g	1.958	1.546	1.674	1.366
Uranium-233/234	pCi/g	0.439	0.4292	0.5049	0.4553

Table 2.11. Sediment monitoring program results – 2002 (continued)

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
			Scioto River		
		RM-6		*RM-1*	
		Upstream @ Piketon		*Downstream @ Lucasville*	
Uranium-235	pCi/g	0.00967U	0.03114U	0.02966U	0.05435U
Uranium-236	pCi/g	0U	0.02797U	0.008876U	-0.01627U
Uranium-238	pCi/g	0.6565	0.5165	0.5579	0.4544
Vanadium	mg/kg	12	17.2	17.6	15.3
Zinc	mg/kg	56.4J	51.7JN	54.8J	77.9JN
			Little Beaver Creek		
		RM-12		*RM-11*	
		Upstream		*X-230J7 Discharge*	
Aluminum	mg/kg	3790	3570	2860*	3070
Americium-241	pCi/g	0.007301U	0.05379U	0.01555U	0.0556U
Antimony	mg/kg	1.39*NU	1.5NU	1.38*NU	1.822NU
Arsenic	mg/kg	9.35B	8.08B	8.27B	19.6B
Barium	mg/kg	37.2	27.4	30	30.7
Beryllium	mg/kg	0.363	0.361	0.27	0.567
Bismuth	mg/kg	3.49UW	3.08U	3.47UW	3.743NU
Cadmium	mg/kg	0.891B	0.618B	0.608B	1.44B
Calcium	mg/kg	769	385	2910	1150J
Chromium	mg/kg	7.71	7.68	6.06	14
Cobalt	mg/kg	8.55	5.83	6.36	12
Copper	mg/kg	7.52	5.36	7.12	15.4
Iron	mg/kg	13100J	11500J	9760*J	24500J
Lead	mg/kg	9.92B	9.37B	6.64B	19.6B
Lithium	mg/kg	7.9	6.64	5.75	4.65
Magnesium	mg/kg	754	574	729	808
Manganese	mg/kg	402	0.4	272	635
Mercury	mg/kg	0.025U	0.025U	0.025U	0.025U
Molybdenum	mg/kg	0.391U	0.4U	0.7B	3.44B
Neptunium-237	pCi/g	0.01175U	-0.03447U	-0.004729U	-0.01506U
Nickel	mg/kg	8.61B	6.2B	6.98B	11.8
PCB-1016	µg/g	1U	1U	1U	1U
PCB-1221	µg/g	5U	2U	5U	2U
PCB-1232	µg/g	5U	2U	5U	2U
PCB-1242	µg/g	1U	1U	1U	1U
PCB-1248	µg/g	1U	1U	1U	1U
PCB-1254	µg/g	1U	1U	1U	1U
PCB-1260	µg/g	1U	1U	1U	1U
PCB-1268	µg/g	1U	1U	1U	1U
Phosphorus	mg/kg	169N	144	137N	237
Plutonium-238	pCi/g	0.01172U	0.006892U	0.04784U	0.01509U
Plutonium-239/240	pCi/g	0.007813U	0.006885U	0.0009103U	0.02264U
Potassium	mg/kg	617BN	477BN	466BN	356BN
Selenium	mg/kg	4.87U	2.92U	4.84U	3.53U
Silicon	mg/kg	68.7*J	71.5*J	56.7J	109
Silver	mg/kg	0.551U	0.421*B	0.547U	0.442U

Table 2.11. Sediment monitoring program results – 2002 (continued)

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
		Little Beaver Creek			
		RM-12 Upstream		*RM-11 X-230J7 Discharge*	
Sodium	mg/kg	60.2J	45.2	71.4J	45.8J
Technetium-99	pCi/g	0.0781U	0.243	2.5	4.75
Thallium	mg/kg	2.23U	4.51B	2.21U	2.32B
Tin	mg/kg	5.77B	12.5J	3.71B	7.07BN
Titanium	mg/kg	29.8N	27.8	24*N	35.2N
Uranium	µg/g	1.571	2.465	2.985	2.881
Uranium-233/234	pCi/g	0.6751	1.108	3.118	2.721
Uranium-235	pCi/g	0.02192U	0.1065	0.0634	0.03668U
Uranium-236	pCi/g	-0.01312U	-0.01594U	0.0253U	0.01647U
Uranium-238	pCi/g	0.5245	0.8189	0.993	0.9646
Vanadium	mg/kg	16.9	15.9B	12.8	28
Zinc	mg/kg	34.2J	22.2	29.4J	62.8J
		Little Beaver Creek			
		RM-8 Downstream @ PL		*RM-7 Downstream @ Confluence*	
Aluminum	mg/kg	4220*	5390	2530	4230
Americium-241	pCi/g	0.02097U	0.01924U	0.07311U	-0.0157U
Antimony	mg/kg	1.39*NU	1.81B	1.38NU	1.521NU
Arsenic	mg/kg	8.89B	7.81BN	3.88U	8.13B
Barium	mg/kg	28	100	35.7	55.1
Beryllium	mg/kg	0.275	0.51	0.247	0.447
Bismuth	mg/kg	3.49UW	3.124U	3.48UW	3.124U
Cadmium	mg/kg	0.878B	1.61B	0.776B	1.08B
Calcium	mg/kg	6040	2880	3250	4980
Chromium	mg/kg	7.41	22.8	7.49	13.7
Cobalt	mg/kg	6.03	11.9	6.37	8.66
Copper	mg/kg	10.3	19.4	7.27	10.9
Iron	mg/kg	12000*J	15200	8490J	13800
Lead	mg/kg	8.03B	12.5BN	4.13B	10.2B
Lithium	mg/kg	4.69	8.51	4.236	8.02
Magnesium	mg/kg	3460	1900	1720	2580
Manganese	mg/kg	236	290	357J	347
Mercury	mg/kg	0.025U	0.11	0.027	0.032
Molybdenum	mg/kg	2.06B	4.78	1.49B	1.98B
Neptunium-237	pCi/g	-0.01943U	0.262	0U	0.05916U
Nickel	mg/kg	11.2	50.6	13.1	19.4
PCB-1016	µg/g	1U	20U	1U	1U
PCB-1221	µg/g	5U	40U	5U	2U
PCB-1232	µg/g	5U	40U	5U	2U
PCB-1242	µg/g	1U	20U	1U	1U
PCB-1248	µg/g	1U	20U	1U	1U
PCB-1254	µg/g	1U	5U	1U	1U
PCB-1260	µg/g	1U	5U	1U	1U

Table 2.11. Sediment monitoring program results – 2002 (continued)

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
		Little Beaver Creek			
		RM-8 Downstream @ PL		*RM-7 Downstream @ Confluence*	
PCB-1268	µg/g	1U	5U	1U	1U
Phosphorus	mg/kg	136N	317	140	223
Plutonium-238	pCi/g	0.02907U	0.01275U	0.01717U	0.009838U
Plutonium-239/240	pCi/g	-0.01938U	0.0701	0.02575U	-0.01964U
Potassium	mg/kg	502BN	709N	412B	523BN
Selenium	mg/kg	4.87U	2.959U	4.85U	2.959U
Silicon	mg/kg	52J	269J	31.1JN	163J
Sodium	mg/kg	0.551U	0.76B	0.549*U	1.07B
Silver	mg/kg	59.8J	73.5	48.8JN	57.1JN
Technetium-99	pCi/g	0.661	689	22.2	17.8
Thallium	mg/kg	2.23U	4.36B	2.22U	5.97B
Tin	mg/kg	5B	4.56B	2.28B	5.38B
Titanium	mg/kg	40.5*N	51.7N	17.4	40.7N
Uranium	µg/g	3.057	35.11	4.266	4.232
Uranium-233/234	pCi/g	1.137	37.85	5.163	6.044
Uranium-235	pCi/g	0.04104U	1.863	0.173	0.1672
Uranium-236	pCi/g	-0.006141U	0.1254U	0.04726U	0.01501U
Uranium-238	pCi/g	1.021	11.63	1.406	1.407
Vanadium	mg/kg	15.5	24.3	11.4	18.2
Zinc	mg/kg	43.6J	159	60.9J	87.1JN
			Big Beaver Creek		
			RM-5 Upstream		*RM-13 Downstream*
Aluminum	mg/kg	3810	3980	3520	5240
Americium-241	pCi/g	0.04204U	0.000007649U	0.03485U	0.03349U
Antimony	mg/kg	1.39NU	1.62BN	1.37NU	1.673NU
Arsenic	mg/kg	5.18B	1.299U	9.24B	9.32B
Barium	mg/kg	40.1	45.2	38.6	41.9
Beryllium	mg/kg	0.325	0.329	0.332	0.384
Bismuth	mg/kg	3.5UW	2.821U	3.46UW	3.436U
Cadmium	mg/kg	0.832B	0.544B	0.899B	0.808B
Calcium	mg/kg	3760	771	1650	1080
Chromium	mg/kg	7.07	6.78	9.8	8.2
Cobalt	mg/kg	7.45	6.39	7.56	6.91
Copper	mg/kg	8.99	6.92	7.87	7.78
Iron	mg/kg	10600J	9140	12100J	11000
Lead	mg/kg	8.14B	6.57B	8.39B	8.11B
Lithium	mg/kg	7.17	7.43	6.17	9.31
Magnesium	mg/kg	2410	942	1180	1230
Manganese	mg/kg	403J	175	533J	280
Mercury	mg/kg	0.024U	0.025U	0.027	0.025U
Molybdenum	mg/kg	1.44B	0.665B	1.43B	1.69B
Neptunium-237	pCi/g	0.00809U	-0.04731U	-0.01764U	-0.02191U

Table 2.11. Sediment monitoring program results – 2002 (continued)

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
			Big Beaver Creek		
			RM-5 Upstream		*RM-13 Downstream*
Nickel	mg/kg	12.8	10.7	17.4	13.6
PCB-1016	µg/g	1U	1U	1U	1U
PCB-1221	µg/g	5U	2U	5U	2U
PCB-1232	µg/g	5U	2U	5U	2U
PCB-1242	µg/g	1U	1U	1U	1U
PCB-1248	µg/g	1U	1U	1U	1U
PCB-1254	µg/g	1U	1U	1U	1U
PCB-1260	µg/g	1U	1U	1U	1U
PCB-1268	µg/g	1U	1U	1U	1U
Phosphorus	mg/kg	178	150	204	194
Plutonium-238	pCi/g	0.03227U	0.00001349U	0U	0.007311U
Plutonium-239/240	pCi/g	0.008067U	0U	0.02639U	0.01461U
Potassium	mg/kg	643B	567N	491B	839N
Selenium	mg/kg	4.88U	2.672U	4.82U	3.255U
Silicon	mg/kg	44.7JN	245J	48.8JN	334*J
Silver	mg/kg	0.551*U	0.334U	0.545*U	0.407*U
Sodium	mg/kg	58.7JN	56.7JN	47.7JN	66.3
Technetium-99	pCi/g	0.186	0.724	14.6	2.66
Thallium	mg/kg	2.23U	2.8B	2.2U	6.18B
Tin	mg/kg	4.34B	3.37B	2.93B	14.6J
Titanium	mg/kg	25.5	46.3N	24	55.6
Uranium	µg/g	2.369	1.921	5.478	2.843
Uranium-233/234	pCi/g	0.6301	0.7144	6.609	1.988
Uranium-235	pCi/g	0.03887	0.04406U	0.261	0.09289U
Uranium-236	pCi/g	0.006981U	0U	0.0568	-0.00000027U
Uranium-238	pCi/g	0.7898	0.6417	1.8	0.9468
Vanadium	mg/kg	14.8	13.9	14.4	18.1N
Zinc	mg/kg	48.6J	27.6JN	58J	37.1
			Big Run Creek		
			RM-33 Upstream		*RM-3 Downstream*
Aluminum	mg/kg	3850	5270	2180	3570
Americium-241	pCi/g	0.01676U	0.05317U	-0.05424U	-0.05351U
Antimony	mg/kg	2.12BN	2.44B	1.38NU	1.72NU
Arsenic	mg/kg	18.9B	16.6BN	7.84B	13.9B
Barium	mg/kg	42.2	44.1	24.6	30.6
Beryllium	mg/kg	0.567	0.717	0.359	0.564
Bismuth	mg/kg	3.48UW	2.739U	3.47UW	3.533U
Cadmium	mg/kg	1.61B	1.19B	0.78B	0.888B
Calcium	mg/kg	418	621	1340	1640
Chromium	mg/kg	11.8	15.5	6.71	11.9
Cobalt	mg/kg	13	13.9	8.5	12.8
Copper	mg/kg	9.82	11	6.19	7.8
Iron	mg/kg	23200J	25600	12100J	14900

Table 2.11. Sediment monitoring program results – 2002 (continued)

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
			Big Run Creek		
		RM-33 Upstream		*RM-3 Downstream*	
Lead	mg/kg	16.1B	17.5BN	7.53B	9.21B
Lithium	mg/kg	6.17	9.07	2.26	4.36
Magnesium	mg/kg	540	703	760	1010
Manganese	mg/kg	402J	335	438J	272
Mercury	mg/kg	0.025U	0.025U	0.025U	0.025U
Molybdenum	mg/kg	8.24	6.06	4.13	6.51
Neptunium-237	pCi/g	0.007431U	0.00003255U	0.01941U	0.007151U
Nickel	mg/kg	14.8	16.6	8.76B	12.7
PCB-1016	µg/g	1U	5U	1U	20U
PCB-1221	µg/g	5U	10U	5U	40U
PCB-1232	µg/g	5U	10U	5U	40U
PCB-1242	µg/g	1U	5U	1U	20U
PCB-1248	µg/g	1U	5U	1U	20U
PCB-1254	µg/g	1U	1U	1U	5U
PCB-1260	µg/g	1U	1U	1U	5U
PCB-1268	µg/g	1U	1U	1U	5U
Phosphorus	mg/kg	232	283	171	229
Plutonium-238	pCi/g	0U	0.02438U	0.009677U	0.01423U
Plutonium-239/240	pCi/g	0.00741U	-0.008106U	0U	0U
Potassium	mg/kg	664B	611N	236B	330BN
Selenium	mg/kg	4.85U	2.594U	4.84U	3.346U
Silicon	mg/kg	117JN	54.7	49.3*JN	315*J
Silver	mg/kg	0.548*U	0.325U	0.547U	0.419U
Sodium	mg/kg	45.7JN	26.7	87.7JN	107JN
Technetium-99	pCi/g	0.0612U	0.117U	0.86	1.09
Thallium	mg/kg	2.21U	6.03B	2.21U	4.25B
Tin	mg/kg	6.8B	2.98B	5.79B	2.29B
Titanium	mg/kg	26.4	26.7N	27.6	45.1N
Uranium	µg/g	3.346	2.32	3.637	4.628
Uranium-233/234	pCi/g	1.086	0.6174	2.011	3.109
Uranium-235	pCi/g	0.03807	0U	0.07586	0.1037
Uranium-236	pCi/g	0.01367U	-0.01396U	0.006814U	0.05319U
Uranium-238	pCi/g	1.118	0.7797	1.21	1.545
Vanadium	mg/kg	28	33	14.9	26.1
Zinc	mg/kg	58.6J	66.5	49J	58.6JN
			Big Run Creek		
		RM-2 Downstream @ Wakefield			
Aluminum	mg/kg	3580	5700		
Americium-241	pCi/g	0.02215U	0.01561U		
Antimony	mg/kg	1.38NU	9.31BN		
Arsenic	mg/kg	8.32B	22.3B		
Barium	mg/kg	31.6	41		
Beryllium	mg/kg	0.461	0.854		

Table 2.11. Sediment monitoring program results – 2002 (continued)

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
				Big Run Creek	
		RM-2			
		Downstream @ Wakefield			
Bismuth	pCi/g	3.49UW	5.478U		
Cadmium	mg/kg	1.37B	2.08B		
Calcium	mg/kg	3570	951		
Chromium	mg/kg	8.21	16.2		
Cobalt	mg/kg	10.7	15.9		
Copper	mg/kg	10.6	12.9		
Iron	mg/kg	13500J	34500		
Lead	mg/kg	29B	19.5B		
Lithium	mg/kg	6.52	10.5		
Magnesium	mg/kg	1780	983		
Manganese	mg/kg	174J	304		
Mercury	mg/kg	0.025U	0.025U		
Molybdenum	mg/kg	3.65B	5.19B		
Neptunium-237	pCi/g	0.03158U	-0.03432U		
Nickel	mg/kg	18.7	26.8		
PCB-1016	µg/g	1U	5U		
PCB-1221	µg/g	10U	10U		
PCB-1232	µg/g	10U	10U		
PCB-1242	µg/g	1U	5U		
PCB-1248	µg/g	1U	5U		
PCB-1254	µg/g	1U	1U		
PCB-1260	µg/g	1U	1U		
PCB-1268	µg/g	1U	1U		
Phosphorus	mg/kg	203	372		
Plutonium-238	pCi/g	0.01575U	0.02057U		
Plutonium-239/240	pCi/g	-0.01574U	0.006853U		
Potassium	mg/kg	636B	754BN		
Selenium	mg/kg	4.86U	5.188U		
Silicon	mg/kg	105JN	448J		
Silver	mg/kg	0.55*U	0.649U		
Sodium	mg/kg	125JN	98.7JN		
Technetium-99	pCi/g	1.25	1.18		
Thallium	mg/kg	2.22U	12.5B		
Tin	mg/kg	11.9B	3.54B		
Titanium	mg/kg	29.5	50.9N		
Uranium	µg/g	3.408	2.84		
Uranium-233/234	pCi/g	2.221	0.8323		
Uranium-235	pCi/g	0.1163	0.0723		
Uranium-236	pCi/g	0.01305U	0.03895U		
Uranium-238	pCi/g	1.127	0.9476		
Vanadium	mg/kg	19.1	45.1		
Zinc	mg/kg	86.6J	81.5JN		

Table 2.11. Sediment monitoring program results – 2002 (continued)

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
			West Outfalls		
		RM-9 Outfall 012		*RM-10 USEC Outfall 010/DOE Outfall 013*	
Aluminum	mg/kg	3100	6070	3190*	4660
Americium-241	pCi/g	-0.0148U	0.07286U	0.01447U	-0.01417U
Antimony	mg/kg	1.38NU	11.429U	1.39*BN	1.53B
Arsenic	mg/kg	23.5B	10.807NU	10.2B	11.8BN
Barium	mg/kg	68.1	48	28.7	47.2
Beryllium	mg/kg	0.45	1.4	0.368	0.612
Bismuth	mg/kg	3.47UW	23.478U	3.44UW	2.93U
Cadmium	mg/kg	1.66B	2.26B	0.858B	1B
Calcium	mg/kg	2070	1480	959	1860
Chromium	mg/kg	27.4	23.1B	11.3	11.8
Cobalt	mg/kg	10.3	20B	5.87	8.42
Copper	mg/kg	9.45	17.2B	6.75	9.1
Iron	mg/kg	22200J	56600*	13000*J	19100
Lead	mg/kg	8.13B	11.366NU	8.2B	10.7BN
Lithium	mg/kg	2.63	8.48B	3.69	5.03
Magnesium	mg/kg	1110	1690	766	1390
Manganese	mg/kg	483J	644	180	381
Mercury	mg/kg	0.024U	0.025U	0.025U	0.025U
Molybdenum	mg/kg	4.34	11.3B	1.44B	1.78B
Neptunium-237	pCi/g	-0.0108U	0.01548U	-0.02423U	-0.02264U
Nickel	mg/kg	20	36.3B	9.37B	12.4
PCB-1016	µg/g	1U	1U	1U	1U
PCB-1221	µg/g	5U	2U	5U	2U
PCB-1232	µg/g	5U	2U	5U	2U
PCB-1242	µg/g	1U	1U	1U	1U
PCB-1248	µg/g	1U	1U	1U	1U
PCB-1254	µg/g	1U	1U	1U	1U
PCB-1260	µg/g	1U	1U	1U	1U
PCB-1268	µg/g	1U	1U	1U	1U
Phosphorus	mg/kg	203	411	212N	331
Plutonium-238	pCi/g	0.04309U	0.04607U	0U	0.01509U
Plutonium-239/240	pCi/g	0.03231U	-0.01532U	0.003452U	0.007551U
Potassium	mg/kg	458B	874BN	362BN	461BN
Selenium	mg/kg	4.84U	22.236U	4.79U	2.775U
Silicon	mg/kg	68.5JN	293J	56.2J	95.5J
Silver	mg/kg	0.547*U	2.783U	0.542U	0.347U
Sodium	mg/kg	54.1JN	44.3B	42.7J	41.9
Technetium-99	pCi/g	0.0174U	0.317	0.326	0.32
Thallium	mg/kg	2.21U	22B	2.19U	4.11B
Tin	mg/kg	4.66B	8.199U	4.42B	4.95B
Titanium	mg/kg	27.8	43.3N	33.6*N	41N
Uranium	µg/g	2.41	1.828	3.297	2.435
Uranium-233/234	pCi/g	0.8425	0.5845	0.9484	0.6433

Table 2.11. Sediment monitoring program results – 2002 (continued)

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
			West Outfalls		
		RM-9		*RM-10*	
		Outfall 012		*USEC Outfall 010/DOE Outfall 013*	
Uranium-235	pCi/g	0.02475U	0.03434U	0.05024U	0.05291U
Uranium-236	pCi/g	0.00000074U	0.00000077U	0.000000964U	0.03167U
Uranium-238	pCi/g	0.8058	0.6111	1.1	0.8132
Vanadium	mg/kg	21.5	51.9	16.4	23.7
Zinc	mg/kg	73.1J	118	59.7J	51.4
			Background Creeks		
		RM-10N		*RM-10E*	
		North Background		*East Background*	
Aluminum	mg/kg	3630	3830	2290	3000
Americium-241	pCi/g	0.000000715U	0.02876U	0.01607U	0.06387U
Antimony	mg/kg	1.36*NU	1.804NU	1.84*BN	1.6NU
Arsenic	mg/kg	4.74B	2.16B	3.87U	3.05B
Barium	mg/kg	40	33.2	35.8	30.2
Beryllium	mg/kg	0.409	0.295	0.327	0.262
Bismuth	pCi/g	3.42UW	3.95	3.47UW	3.287U
Cadmium	mg/kg	1.03B	0.685B	0.489B	0.372B
Calcium	mg/kg	3600	4580	1020	855
Chromium	mg/kg	6.51	6.51	5.12	6.1
Cobalt	mg/kg	7.82	6.73	4.27	4.14
Copper	mg/kg	9.52	7.03	3.97	3.1
Iron	mg/kg	10800J	8360J	6620J	6330J
Lead	mg/kg	17.4B	12.2B	8.83B	7.44B
Lithium	mg/kg	7.58	6.89	2.89	3.82
Magnesium	mg/kg	2390	2930	333	423
Manganese	mg/kg	262	167	243	175
Mercury	mg/kg	0.025U	0.025U	0.025U	0.025U
Molybdenum	mg/kg	1.3B	0.754B	0.389U	0.427U
Neptunium-237	pCi/g	-0.01665U	-0.04668U	0.00849U	0.02037U
Nickel	mg/kg	19	15.4	5.1B	4.78B
PCB-1016	µg/g	1U	1U	1U	1U
PCB-1221	µg/g	5U	2U	5U	2U
PCB-1232	µg/g	5U	2U	5U	2U
PCB-1242	µg/g	1U	1U	1U	2U
PCB-1248	µg/g	1U	1U	1U	2U
PCB-1254	µg/g	1U	1U	1U	2U
PCB-1260	µg/g	1U	1U	1U	2U
PCB-1268	µg/g	1U	1U	1U	2U
Phosphorus	mg/kg	211	196	135	131
Plutonium-238	pCi/g	0.03321U	0.006672U	0.0254U	0.00002704U
Plutonium-239/240	pCi/g	-0.0166U	0U	0.008466U	0.00002028U
Potassium	mg/kg	586B	717N	251B	451BN
Selenium	mg/kg	4.77U	3.51U	4.84U	3.113U
Silicon	mg/kg	298*J	363*J	298J	237*J

Table 2.11. Sediment monitoring program results – 2002 (continued)

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
		Background Creeks			
		RM-10N		*RM-10E*	
		North Background		*East Background*	
Silver	mg/kg	0.539U	0.439*U	0.548U	0.465*B
Sodium	mg/kg	51.7J	68.7	206J	292
Technetium-99	pCi/g	0.0496U	0.00897U	0.016U	-0.157U
Thallium	mg/kg	2.18U	3.27B	2.21U	1.6B
Tin	mg/kg	6.27B	13.3J	7.38B	10.6BJ
Titanium	mg/kg	52.8*	76.4	37.4*	34.9
Uranium	µg/g	1.827	1.393	1.83	2.101
Uranium-233/234	pCi/g	0.5568	0.5004	0.4093	0.569
Uranium-235	pCi/g	0.03774U	0.02806U	0.02443U	0.09301
Uranium-236	pCi/g	-0.01355U	0.0126U	0U	0.000008719U
Uranium-238	pCi/g	0.6081	0.4654	0.6112	0.6977
Vanadium	mg/kg	13.2	12.8N	10	11.1N
Zinc	mg/kg	63.6J	45.4	34J	18.8
			Background Creeks		
		RM-10S		*RM-10W*	
		South Background		*West Background*	
Aluminum	mg/kg	4140	8520	2230	4850
Americium-241	pCi/g	0.01499U	0.0567U	0.03733U	0.03633U
Antimony	mg/kg	1.35*NU	1.614NU	3.51*BN	1.93*BN
Arsenic	mg/kg	9.79B	21.6B	15.8B	29.1B
Barium	mg/kg	49.3	76.9	24.5	38.6
Beryllium	mg/kg	0.46	0.949	0.4	0.657
Bismuth	mg/kg	3.41UW	3.316U	3.47UW	2.976U
Cadmium	mg/kg	0.891B	1.09B	1.67B	2.14
Calcium	mg/kg	1380	13800	694	605
Chromium	mg/kg	10.4	24.6	7.85	13.1
Cobalt	mg/kg	9.62	14.1	10.9	15.3
Copper	mg/kg	8.24	14.8	9.01	14.7
Iron	mg/kg	16800J	27700J	15400J	24400J
Lead	mg/kg	18B	29.7B	10.3B	14.5B
Lithium	mg/kg	8.11	17.1	4.33	7.81
Magnesium	mg/kg	1110	7560	566	726
Manganese	mg/kg	559	650	408	454
Mercury	mg/kg	0.025U	0.034	0.025U	0.025
Molybdenum	mg/kg	0.382U	0.431U	14.1	25.8
Neptunium-237	pCi/g	-0.02829U	0.03085U	-0.007364U	0.006516U
Nickel	mg/kg	8.4B	14.8	18.6	27.8
PCB-1016	µg/g	1U	1U	1U	1U
PCB-1221	µg/g	5U	2U	5U	2U
PCB-1232	µg/g	5U	2U	5U	2U
PCB-1242	µg/g	1U	1U	1U	1U
PCB-1248	µg/g	1U	1U	1U	1U
PCB-1254	µg/g	1U	1U	1U	1U
PCB-1260	µg/g	1U	1U	1U	1U

Table 2.11. Sediment monitoring program results – 2002 (continued)

Parameter	Unit	Spring[a]	Fall[a]	Spring[a]	Fall[a]
		Background Creeks			
		RM-10S South Background		*RM-10W West Background*	
PCB-1268	µg/g	1U	1U	1U	1U
Phosphorus	mg/kg	189	339	111	180
Plutonium-238	pCi/g	0.03762U	0.00001535U	0.03672U	0.02592U
Plutonium-239/240	pCi/g	0.01881U	0.000007674U	-0.02937U	-0.006459U
Potassium	mg/kg	541B	1190N	471B	1080*N
Selenium	mg/kg	4.76U	3.14U	4.83U	2.819U
Silicon	mg/kg	210J	1100*J	290*J	170J
Silver	mg/kg	0.538U	0.393*U	0.547U	0.353U
Sodium	mg/kg	37.5J	112	38.1J	35
Technetium-99	pCi/g	0.0568U	-0.0011U	0.0383U	0.144
Thallium	mg/kg	2.17U	13.5B	2.21U	10.1B
Tin	mg/kg	11.2B	8.29BJ	6.83B	7.52BJ
Titanium	mg/kg	46.2*	101	31.8	31.7
Uranium	µg/g	1.992	2.64	4.307	4.138
Uranium-233/234	pCi/g	0.7255	2.595	1.457	1.205
Uranium-235	pCi/g	0.03996U	0.07261U	0.07125U	0.04848U
Uranium-236	pCi/g	-0.007173U	-0.01446U	0.007108U	0.05804U
Uranium-238	pCi/g	0.6632	0.8806	1.436	1.386
Vanadium	mg/kg	22.2	36.1N	26.6	51.2N
Zinc	mg/kg	49.6J	103	64.4J	99.9

[a]Abbreviations and data qualifiers are as follows: * - duplicate analysis is not within control limits; B – result is less than the practical quantitation limit but greater than or equal to the instrument detection limit; J – estimated value; N – sample spike recovery is not within control limits; U – undetected; W – post-digestion spike recovery was out of control limits.

Table 2.12. Soil and vegetation monitoring at ambient air monitoring stations – 2002

Station ID	Parameter	April 2002[a, b]		October 2002[a, b]	
		Vegetation	Soil	Vegetation	Soil
A3	Americium-241	-0.02494U	0.02649U		
	Neptunium-237	-0.02135U	-0.02675U		
	Plutonium-238	0.02129U	0.02252U		
	Plutonium-239/240	0.007096U	0.008624U		
	Technetium-99	-0.00638U	-0.0322U		
	Uranium	-0.005469U	2.958		
	Uranium-233/234	0.03832U	0.8161		
	Uranium-235	-0.02026U	0.02271U		
	Uranium-236	-0.006065U	-0.02039U		
	Uranium-238	0.001343U	0.9906		
A6	Americium-241	0.08946U	0.01344U		
	Neptunium-237	-0.03576U	0.02124U		
	Plutonium-238	0.0214U	0.006833U		
	Plutonium-239/240	0U	0.01401U		
	Technetium-99	-0.0354U	-0.0465U		
	Uranium	0.02246U	1.909		
	Uranium-233/234	-0.02012U	0.5194		
	Uranium-235	0.008275U	0.007199U		
	Uranium-236	0.02229U	0.006465U		
	Uranium-238	0.006146U	0.6402		
A8	Americium-241	0.007146U	0.02852U		
	Neptunium-237	-0.01413U	0.03241U		
	Plutonium-238	0.007045U	0.02974U		
	Plutonium-239/240	-0.007045U	0.007433U		
	Technetium-99	0.0284U	-0.0177U		
	Uranium	-0.01935U	2.171		
	Uranium-233/234	-0.01455U	0.6625		
	Uranium-235	0.008972U	0.05019		
	Uranium-236	-0.008057U	-0.006437U		
	Uranium-238	-0.007854U	0.7217		
A9	Americium-241	-0.01292U	0.04322U		
	Neptunium-237	0U	-0.01761U		
	Plutonium-238	0.02965U	0.02026U		
	Plutonium-239/240	0.007412U	0.02093U		
	Technetium-99	0.0217U	-0.121U		
	Uranium	0.002515U	0.913U		
	Uranium-233/234	-0.01453U	0.3444		
	Uranium-235	0.008969U	0.01349U		
	Uranium-236	0.008053U	-0.0000002U		
	Uranium-238	-0.000591U	0.3047		

Table 2.12. Soil and vegetation monitoring at ambient air monitoring stations – 2002 (continued)

Station ID	Parameter	April 2002[a, b]		October 2002[a, b]	
		Vegetation	Soil	Vegetation	Soil
A10	Americium-241	0.05314U	0.03046U		
	Neptunium-237	0.006014U	-0.01806U		
	Plutonium-238	0.005998U	0.01295U		
	Plutonium-239/240	0.005997U	0U		
	Technetium-99	-0.017U	-0.0511U		
	Uranium	0.03969U	1.229		
	Uranium-233/234	0.000006236U	0.4624		
	Uranium-235	0.000001923U	0.01542U		
	Uranium-236	0U	0U		
	Uranium-238	0.01334U	0.4106		
A12	Americium-241	0.0268U	-0.007408U		
	Neptunium-237	-0.006663U	-0.01373U		
	Plutonium-238	0.01993U	0.007607U		
	Plutonium-239/240	0.006644U	0U		
	Technetium-99	0.0388U	-0.107U		
	Uranium	0.002291U	1.97		
	Uranium-233/234	0.04638U	0.6914		
	Uranium-235	0.008173U	0.06241		
	Uranium-236	0.007338U	0.006226U		
	Uranium-238	-0.0005418U	0.6522		
A15	Americium-241			0.03285U	-0.007251U
	Neptunium-237			-0.07357U	-0.02698U
	Plutonium-238			0.008686U	-0.004467U
	Plutonium-239/240			0.000004388U	0U
	Technetium-99	-0.0364U	-0.0775U	-0.0659U	0.000279U
	Uranium	0.02161U	2.188	0.0256U	1.315
	Uranium-233/234		0.8	0.04994B	0.3788
	Uranium-235		0.08772	-0.005593U	0.008203U
	Uranium-236	0.01642U		0.005032U	0.01105U
	Uranium-238		0.7216	0.009073U	0.4411
A23	Americium-241		0.006803U	-0.01325U	
	Neptunium-237		0.04072U	-0.0508U	
	Plutonium-238		0.02437U	0.02351U	
	Plutonium-239/240		-0.008121U	0.01172U	
	Technetium-99	-0.0193U	-0.0532U	0.0485U	
	Uranium	-0.03998U	1.469	-0.01645U	
	Uranium-233/234		0.4637	-0.02925U	
	Uranium-235		0.04904U	-0.01548U	
	Uranium-236	0.01667U	0.000002078U	0.004638U	
	Uranium-238		0.486	-0.00417U	

Table 2.12. Soil and vegetation monitoring at ambient air monitoring stations – 2002 (continued)

Station ID	Parameter	April 2002[a, b]		October 2002[a, b]	
		Vegetation	Soil	Vegetation	Soil
A24	Americium-241			-0.008701U	0.00000375U
	Neptunium-237			-0.0248U	0.007812U
	Plutonium-238			0.05456U	0.007787U
	Plutonium-239/240			0.00001122U	0.01556U
	Technetium-99	-0.119U	1.02	0U	-0.000563U
	Uranium	-0.08873U	1.661	-0.04148U	2.045
	Uranium-233/234		0.6406	-0.003383U	0.7257
	Uranium-235		0.04032U	-0.004211U	0.04132
	Uranium-236	0.01674U	-0.00724U	0.01136U	0.004122U
	Uranium-238		0.5519	-0.01362U	0.6834
A28	Americium-241		0.01344U	0.04043U	
	Neptunium-237		0.003003U	-0.008532U	
	Plutonium-238		0.008295U	-0.01275U	
	Plutonium-239/240		0.0003743U	0.000007973U	
	Technetium-99	0.00708U	-0.0969U	0.00412U	
	Uranium	0.04383U	1.962	-0.01488U	
	Uranium-233/234		0.5175	-0.03627U	
	Uranium-235		0.04092	-0.005594U	
	Uranium-236	-0.02429U	0.007349U	0.005038U	
	Uranium-238		0.6528	-0.004525U	
A29	Americium-241			-0.01476U	0.007654U
	Neptunium-237			-0.007048U	-0.007909U
	Plutonium-238			0.02847U	0U
	Plutonium-239/240			-0.02831U	0.01188U
	Technetium-99	-0.0119U	1.45	0.236	0.0385U
	Uranium	-0.06547U	1.578	0.04204U	0.9566
	Uranium-233/234		0.6051	-0.007236U	0.2899
	Uranium-235		0.03428U	-0.004478U	0.000004167U
	Uranium-236	-0.0008617U	-0.02058U	0.004029U	0U
	Uranium-238		0.5252	0.01451U	0.3214
A36	Americium-241	-0.006382U	0.04892U		
	Neptunium-237	-0.02148U	0.008164U		
	Plutonium-238	0.007142U	0.02963U		
	Plutonium-239/240	0U	0.0003671U		
	Technetium-99	-0.0335U	-0.00588U		
	Uranium	-0.06249U	1.656		
	Uranium-233/234	-0.03506U	0.7186		
	Uranium-235	0U	0.02686U		
	Uranium-236	0.000001036U	0.01206U		
	Uranium-238	-0.021U	0.5524		

Table 2.12. Soil and vegetation monitoring at ambient air monitoring stations – 2002 (continued)

Station ID	Parameter	April 2002[a, b]		October 2002[a, b]	
		Vegetation	Soil	Vegetation	Soil
A37	Americium-241	0.02091U	0.0145U		
	Neptunium-237	-0.02252U	-0.005779U		
	Plutonium-238	0.01497U	0.03687U		
	Plutonium-239/240	0U	-0.02744U		
	Technetium-99	0.103U	0.023U		
	Uranium	0.02609U	1.632		
	Uranium-233/234	0.007164U	0.6181		
	Uranium-235	0.01767U	0.00778U		
	Uranium-236	0.007933U	0.006986U		
	Uranium-238	0.005976U	0.5471		
A41	Americium-241	0.05386U	0.007434U		
	Neptunium-237	-0.01794U	0.0124U		
	Plutonium-238	0.01789U	0.01183U		
	Plutonium-239/240	-0.008943U	0.02204U		
	Technetium-99	-0.00909U	-0.00786U		
	Uranium	-0.02287U	1.781		
	Uranium-233/234	-0.005758U	0.536		
	Uranium-235	-0.02132U	0.04048U		
	Uranium-236	-0.006381U	-0.01212U		
	Uranium-238	-0.004335U	0.5923		
T7	Americium-241			-0.003522U	0.003854U
	Neptunium-237			-0.01146U	0.01303U
	Plutonium-238			0.03057U	0.008654U
	Plutonium-239/240			-0.01144U	0.008652U
	Technetium-99	0.193	0.0221U	0.0112U	-0.0519U
	Uranium	0.01707U	1.431	0.0432U	0.6827
	Uranium-233/234	-0.005679U	0.6471	0.02412U	0.2667
	Uranium-235	-0.01633U	0.01646U	0.008488U	0.003825U
	Uranium-236			0.003816U	0.006873U
	Uranium-238	0.008316U	0.4783	0.01374U	0.229

[a]Abbreviations and data qualifiers are as follows: U – undetected.
[b]Some samples collected in April 2002 were not analyzed for all required parameters. These locations were sampled again in October 2002. Both sets of data are provided for these locations.

Table 2.13. Biota (fish) monitoring program results – 2002

Parameter	Unit	Location/type of fish/results[a]		
		Scioto River upstream at dam striped bass	*Scioto River upstream at dam drum*	*Scioto River (RW-1) drum #1*
Americium-241	pCi/g	0.006687U	0.02509U	0.007983U
Chromium	mg/kg	4.75	3.6	5.8
Neptunium-237	pCi/g	0.003646U	0U	0U
PCBs	Fg/g	2U[b]	2U[b]	2U[b]
Plutonium-238	pCi/g	0.01091U	0.01801	0.003438U
Plutonium-239/240	pCi/g	0U	0.003602U	0.003438U
Technetium-99	pCi/g	-0.0438U	-0.0389U	-0.106U
Uranium (total)	Fg/g	0.01623U	-0.03044U	0.03601U
Uranium-233/234	pCi/g	0.002732U	-0.0198U	0U
Uranium-235	pCi/g	0U	-0.004072U	0.02113
Uranium-236	pCi/g	0U	0.003658U	-0.007588U
Uranium-238	pCi/g	0.005453U	-0.009883U	0.01026U
		Scioto River (RW-1) drum #2	*Scioto River (RW-1) catfish*	*Little Beaver Creek/ Big Beaver Creek (RW-7) large mouth bass*
Americium-241	pCi/g	0.004089U	0.01181U	0.007869U
Chromium	mg/kg	4.03	2.09B	3.16
Neptunium-237	pCi/g	-0.03662U	-0.03031U	0.01264U
PCBs	Fg/g	2U[b]	2U[b]	2.9[b]
Plutonium-238	pCi/g	0.02922U	0.003779U	0.01261U
Plutonium-239/240	pCi/g	0U	0U	0U
Technetium-99	pCi/g	-0.0923U	-0.023U	-0.145U
Uranium (total)	Fg/g	0.001767U	0.01006U	0.01513U
Uranium-233/234	pCi/g	0U	0U	0.008111U
Uranium-235	pCi/g	0.003707U	0.003745U	-0.003335U
Uranium-236	pCi/g	0.003329U	0.003363U	-0.002995U
Uranium-238	pCi/g	0U	0.00303U	0.005397U
		Little Beaver Creek (RW-8) sunfish	*Little Beaver Creek (RW-8) creek chub*	*Little Beaver Creek (RW-8) large mouth bass #1*
Americium-241	pCi/g	0.01157U	0U	0.004036U
Chromium	mg/kg	5.82	4.34	5.19
Neptunium-237	pCi/g	-0.004937U	-0.01628U	0.01789U
PCBs	Fg/g	2U[b]	2U[b]	2.9[b]
Plutonium-238	pCi/g	0.009847U	0.008118U	0.01427U
Plutonium-239/240	pCi/g	-0.004923U	-0.004059U	0U
Technetium-99	pCi/g	0.0132U	0.00715U	-0.017U
Uranium (total)	Fg/g	-0.00236U	0.4058U	0.008762U
Uranium-233/234	pCi/g	0.004015U	0.2692	0.01466U
Uranium-235	pCi/g	-0.004953U	0.006991U	-0.00000012U
Uranium-236	pCi/g	-0.004447U	0.000000418U	0.003249U
Uranium-238	pCi/g	0.000000201U	0.1357	0.002927U
		Little Beaver Creek (RW-8) large mouth bass #2	*Little Beaver Creek (RW-8) shad*	
PCBs	Fg/g	2.12	1U	

[a]Abbreviations and data qualifiers are as follows: B – result is less than the practical quantitation limit but greater than or equal to the instrument detection limit; U – undetected.

[b]PCB analyses for these samples exceeded the method holding time. Additional samples were collected and analyzed for PCBs only.

Table 2.14. Biota (crops) monitoring program results – 2002

Type	Location	Tc-99[a, b]	U	U-233/234	U-235	U-238
amaranth	Offsite 1	0.0105U	-0.002042U	-0.01971U	-0.008104U	0.0005373U
bitter melon	Offsite 1	-0.0312U	-0.06234U	-0.04724U	-0.008325U	-0.01965U
corn	Offsite 1	-0.00616U	-0.01913U	-0.03619U	0.008929U	-0.007815U
eggplant	Offsite 1	0.0508U	-0.11U	-0.02145U	-0.01764U	-0.03451U
onion	Offsite 1	0.00698U	0.04733	0.02236U	0U	0.01594
pumpkin	Offsite 1	0.0306U	0.03867U	0.02073U	-0.008522U	0.01436U
tomato	Offsite 1	0.0135U	-0.02017U	-0.03375U	0U	-0.006736U
bell pepper	Offsite 2	0.0549U	-0.03632U	-0.03865U	-0.01362U	-0.01012U
corn	Offsite 2	0.0161U	0.03881U	-0.06588U	-0.01806U	0.01581U
cucumber	Offsite 2	-0.0115U	0.02064U	-0.03475U	0U	0.006936U
green beans	Offsite 2	0.0294U	0.0356U	-0.05698U	0.007029U	0.01091U
tomato	Offsite 2	-0.0134U	0.04226U	-0.03372U	0.008318U	0.01291U
zucchini	Offsite 2	0.0156U	-0.0235U	-0.02281U	0U	-0.007588U
broccoli	Offsite 3	-0.0537U	0.01988U	0.04683U	0U	0.006677U
corn	Offsite 3	0.0153U	-0.01425U	-0.005422U	0.006696U	-0.00586U
cucumber	Offsite 3	0.0112U	0.001559U	-0.09685U	0.007469U	-0.0004927U
green beans	Offsite 3	0.0695U	0.108U	0.06141U	0.02525U	0.03237
tomato	Offsite 3	-0.0103JU	0.04036U	0.02569U	0.007921U	0.01229U
corn	Offsite 4	0.0007U	-0.03737U	0.00631U	0U	-0.01259U
green beans	Offsite 4	0.00248U	-0.0195U	-0.01195U	-0.00737U	-0.005475U
tomato	Offsite 4	-0.000327U	-0.0194U	-0.01291U	0U	-0.006445U
corn	Offsite 5	-0.0133U	-0.1015U	-0.04401U	-0.01357U	-0.03204U
green beans	Offsite 5	0.0432U	-0.0002249U	-0.01296U	0U	0U
tomato	Offsite 5	0.0563U	0.1072U	-0.02355U	0.007273U	0.03481U

[a]Results are reported in Fg/g (uranium) and pCi/g (all other parameters). Abbreviations are as follows: Tc-99 – technetium-99, U – uranium, U-233/234 – uranium-233/234, U-235 – uranium-235, U-238 – uranium-238. Data qualifiers are as follows: U – undetected.

[b]Samples were also analyzed for transuranic radionuclides (americium-241, neptunium-237, plutonium-238, and plutonium-239/240) and uranium-236. None of these radionuclides were detected in the samples.

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3. DOSE

This section provides summary tables for dose calculations completed for the PORTS site. Information is provided for the dose calculation required by 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/PORTS air emission sources in 2002
- Table 3.2. Predicted radiation doses from airborne releases at PORTS in 2002
- Table 3.3. Dose calculations for ambient air monitoring stations in 2002

Table 3.1. Emissions (Ci/year) from DOE/PORTS air emission sources in 2002

Radionuclide	X-622 Groundwater Treatment Facility[a,b]		X-623 Groundwater Treatment Facility[a, b]	X-624 Groundwater Treatment Facility[a,b]
	Air stripper	Clarifier		
Americium-241	6.4E-08	3.3E-08	6.2E-07	1.1E-06
Neptunium-237	2.7E-08	4.8E-09	6.0E-07	1.6E-06
Plutonium-238	2.8E-08	9.6E-09	3.9E-07	7.6E-07
Plutonium-239/240	1.8E-08	4.9E-09	3.4E-07	9.7E-07
Technetium-99	6.6E-07	6.3E-08	3.1E-05	5.1E-05
Uranium-233/234	-	-	8.7E-07	1.5E-06
Uranium-234	1.9E-05	1.3E-06	-	-
Uranium-235	4.3E-08	2.9E-09	2.0E-07	5.4E-07
Uranium-236	-	-	2.6E-07	5.3E-07
Uranium-238	1.3E-07	8.5E-09	4.1E-07	7.6E-07
Total	2.0E-05	1.4E-06	3.5E-05	5.9E-05

[a]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).

[b]Emissions are based on the results of the most recent air emissions testing completed for each facility (2002 for X-622 and 2001 for X-623 and X-624). The highest emissions of each nuclide were assumed to be emitted from each facility during each hour of operation for the facility in 2002.

Table 3.2. Predicted radiation doses from airborne releases at PORTS in 2002

Effective dose equivalent to:	DOE releases	All PORTS releases (DOE and USEC)
Maximally exposed individual (mrem/year)	0.0046	0.031
Population[a] (person-rem/year)	0.010	0.105
Nearest community[b] (person-rem/year)	0.0012	0.011

[a]Population within 50 miles (80 km) of plant site.
[b]Piketon, Ohio [for modeling purposes assumed to be 2 miles (3500 m) north of the plant site].

Table 3.3. Dose calculations for ambient air monitoring stations in 2002

Station	Parameter[a]	Dose[b] (mrem/year)	Total dose for station[c]	Net dose for station[d]
A3	Americium-241	1.2E-09		
	Neptunium-237	2.1E-09		
	Plutonium-238	4.1E-09		
	Plutonium-239/240	1.4E-09		
	Technetium-99	1.1E-03		
	Uranium-233/234	2.5E-06		
	Uranium-235	1.2E-07		
	Uranium-236	5.4E-09	(0.0011)	(0.00068)
	Uranium-238	4.4E-07	1.1E-03	6.8E-04
A6	**Americium-241**	2.0E-09		
	Neptunium-237	2.1E-09		
	Plutonium-238	2.9E-09		
	Plutonium-239/240	1.2E-09		
	Technetium-99	5.3E-04		
	Uranium-233/234	5.7E-07		
	Uranium-235	3.7E-08		
	Uranium-236	1.1E-08	(0.00053)	(0.00011)
	Uranium-238	3.3E-07	5.3E-04	1.1E-04
A8	Americium-241	1.2E-09		
	Neptunium-237	1.3E-09		
	Plutonium-238	5.1E-09		
	Plutonium-239/240	1.9E-09		
	Technetium-99	3.5E-04		
	Uranium-233/234	1.2E-06		
	Uranium-235	4.5E-08		
	Uranium-236	2.8E-09	(0.00036)	
	Uranium-238	5.1E-07	3.6E-04	0

Table 3.3. Dose calculations for ambient air monitoring stations in 2002 (continued)

Station	Parameter[a]	Dose[b] (mrem/year)	Total dose for station[c]	Net dose for station[d]
A9	Americium-241	3.1E-09		
	Neptunium-237	2.0E-09		
	Plutonium-238	1.6E-09		
	Plutonium-239/240	1.3E-09		
	Technetium-99	2.3E-03		
	Uranium-233/234	2.6E-06		
	Uranium-235	9.6E-08		
	Uranium-236	1.9E-08	(0.0023)	(0.0019)
	Uranium-238	3.1E-07	2.3E-03	1.9E-03
A10	Americium-241	3.4E-09		
	Neptunium-237	1.4E-09		
	Plutonium-238	1.7E-09		
	Plutonium-239/240	9.5E-10		
	Technetium-99	3.5E-04		
	Uranium-233/234	3.0E-07		
	Uranium-235	2.4E-08		
	Uranium-236	1.8E-08	(0.00035)	
	Uranium-238	2.9E-07	3.5E-04	0
A12	Americium-241	3.4E-09		
	Neptunium-237	1.1E-09		
	Plutonium-238	1.5E-09		
	Plutonium-239/240	1.4E-09		
	Technetium-99	4.1E-04		
	Uranium-233/234	4.0E-07		
	Uranium-235	2.1E-08		
	Uranium-236	1.1E-08	(0.00041)	
	Uranium-238	3.0E-07	4.1E-04	0
A15	Americium-241	2.3E-09		
	Neptunium-237	1.9E-09		
	Plutonium-238	3.2E-09		
	Plutonium-239/240	1.5E-09		
	Technetium-99	4.5E-04		
	Uranium-233/234	1.9E-06		
	Uranium-235	9.5E-08		
	Uranium-236	3.0E-09	(0.00045)	(0.000031)
	Uranium-238	4.8E-07	4.5E-04	3.1E-05
A23	Americium-241	2.0E-09		
	Neptunium-237	3.2E-09		
	Plutonium-238	1.7E-09		
	Plutonium-239/240	7.8E-10		
	Technetium-99	5.0E-04		
	Uranium-233/234	7.5E-06		
	Uranium-235	3.3E-07		
	Uranium-236	1.4E-08	(0.00051)	(0.000084)
	Uranium-238	1.3E-06	5.1E-04	8.4E-05

Table 3.3. Dose calculations for ambient air monitoring stations in 2002 (continued)

Station	Parameter[a]	Dose[b] (mrem/year)	Total dose for station[c]	Net dose for station[d]
A24	**Americium-241**	2.5E-09		
	Neptunium-237	1.9E-09		
	Plutonium-238	4.1E-09		
	Plutonium-239/240	1.3E-09		
	Technetium-99	4.8E-04		
	Uranium-233/234	2.0E-06		
	Uranium-235	7.2E-08		
	Uranium-236	4.2E-09	(0.00049)	(0.000064)
	Uranium-238	4.6E-07	4.9E-04	6.4E-05
A28	**Americium-241**	1.9E-09		
	Neptunium-237	1.8E-09		
	Plutonium-238	2.0E-09		
	Plutonium-239/240	1.2E-09		
	Technetium-99	1.0E-03		
	Uranium-233/234	4.4E-07		
	Uranium-235	1.8E-08		
	Uranium-236	7.2E-09	(0.0010)	(0.00061)
	Uranium-238	3.1E-07	1.0E-03	6.1E-04
A29	Americium-241	9.3E-09		
	Neptunium-237	1.9E-09		
	Plutonium-238	2.1E-09		
	Plutonium-239/240	1.0E-09		
	Technetium-99	5.2E-04		
	Uranium-233/234	1.3E-06		
	Uranium-235	3.9E-08		
	Uranium-236	4.3E-09	(0.00052)	(0.000099)
	Uranium-238	4.5E-07	5.2E-04	9.9E-05
A36	Americium-241	1.6E-08		
	Neptunium-237	3.7E-09		
	Plutonium-238	1.9E-09		
	Plutonium-239/240	9.8E-10		
	Technetium-99	3.9E-04		
	Uranium-233/234	4.3E-06		
	Uranium-235	2.5E-07		
	Uranium-236	1.9E-08	(0.00040)	
	Uranium-238	4.3E-06	4.0E-04	0
A37	Americium-241	3.6E-09		
	Neptunium-237	1.5E-09		
	Plutonium-238	2.5E-09		
	Plutonium-239/240	6.3E-10		
	Technetium-99	4.2E-04		
	Uranium-233/234	1.1E-06		
	Uranium-235	6.2E-08		
	Uranium-236	1.1E-08	(0.00042)	
	Uranium-238	2.7E-07	4.2E-04	-

Table 3.3. Dose calculations for ambient air monitoring stations in 2002 (continued)

Station	Parameter[a]	Dose[b] (mrem/year)	Total dose for station[c]	Net dose for station[d]
A41	Americium-241	5.2E-09		
	Neptunium-237	1.7E-09		
	Plutonium-238	2.7E-09		
	Plutonium-239/240	7.8E-10		
	Technetium-99	9.0E-04		
	Uranium-233/234	7.9E-07		
	Uranium-235	2.6E-08		
	Uranium-236	1.8E-09	(0.00090)	0.00048)
	Uranium-238	5.6E-07	9.0E-04	4.8E-04
T7	Americium-241	3.6E-09		
	Neptunium-237	1.3E-09		
	Plutonium-238	2.6E-09		
	Plutonium-239/240	1.4E-09		
	Technetium-99	3.7E-04		
	Uranium-233/234	3.7E-07		
	Uranium-235	2.6E-08		
	Uranium-236	3.2E-09	(0.00037)	
	Uranium-238	4.5E-07	3.7E-04	0

[a]Parameters listed in **bold** type were detected at least once in the samples collected in 2002 (see Table 2.7).

[b]The dose calculation is based on the maximum detection of each parameter at each station. For parameters that were not detected, half the maximum detection limit for the parameter was used to calculate the concentration 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. If the net dose is a negative number (i.e., the total dose at the station was less than the background dose at A37), the net dose is entered as zero. When the net dose is not zero, 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 2002 at the following locations:

- X-749/X-120/Peter Kiewit (PK) Landfill
- Quadrant I Groundwater Investigative Area/X-749A Classified Materials Disposal Facility
- Quadrant II Groundwater Investigative Area
- X-701B Holding Pond
- X-633 Pumphouse/Cooling Towers Area
- X-616 Chromium Sludge Surface Impoundments
- X-740 Waste Oil Handling Facility
- X-611A Former Lime Sludge Lagoons
- X-735 Landfills
- X-734 Landfills
- X-533 Switchyard Area
- Surface water monitoring locations
- Exit pathway monitoring locations

Results for radiological parameters and volatile organic compounds are reported 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 2002. Results for chromium at the X-616 Chromium Sludge Surface Impoundments are also included in this section because chromium is a primary contaminant in this area. Results are provided for metals at the X-633 Pumphouse/Cooling Towers Area, X-611A Former Lime Sludge Lagoons, and X-533 Switchyard Area because these are the only analytical parameters for these areas.

Only those volatile organic compounds that were detected in at least one sampling event are listed in this section. A table for volatile organic compounds at the X-735 Landfills is not provided because routine monitoring at this landfill in 2002 did not detect any volatile organic compounds. Complete groundwater monitoring results for sampling completed as required by the *Integrated Groundwater Monitoring Plan* are provided in the *2002 Groundwater Monitoring Report for the Portsmouth Gaseous Diffusion Plant*.

The following tables are included in this section:

- Table 4.1. Volatile organic compounds detected at the X-749/X-120/PK Landfill
- Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill
- Table 4.3. Volatile organic compounds detected at the Quadrant I Groundwater Investigative Area
- Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area
- Table 4.5. Volatile organic compounds detected at the Quadrant II Groundwater Investigative Area
- Table 4.6. Results for radionuclides at the Quadrant II Groundwater Investigative Area

- Table 4.7. Volatile organic compounds detected at the X-701B Holding Pond
- Table 4.8. Results for radionuclides at the X-701B Holding Pond
- Table 4.9. Results for chromium at the X-633 Pumphouse/Cooling Towers Area
- Table 4.10. Volatile organic compounds detected at the X-616 Chromium Sludge Surface Impoundments
- Table 4.11. Results for chromium at the X-616 Chromium Sludge Surface Impoundments
- Table 4.12. Results for radionuclides at the X-616 Chromium Sludge Surface Impoundments
- Table 4.13. Volatile organic compounds detected at the X-740 Waste Oil Handling Facility
- Table 4.14. Results for radionuclides at the X-740 Waste Oil Handling Facility
- Table 4.15. Results for beryllium and chromium at the X-611A Former Lime Sludge Lagoons
- Table 4.16. Results for radionuclides at the X-735 Landfills
- Table 4.17. Volatile organic compounds detected at the X-734 Landfills
- Table 4.18. Results for radionuclides at the X-734 Landfills
- Table 4.19. Results for cadmium, cobalt, and nickel at the X-533 Switchyard Area
- Table 4.20. Volatile organic compounds detected at surface water monitoring locations
- Table 4.21. Results for radionuclides at surface water monitoring locations
- Table 4.22. Results for radionuclides at exit pathway monitoring locations

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

Data qualifier	Meaning
B	Inorganics (metals): the result was less than the practical quantitation limit but greater than or equal to the instrument detection limit. Radionuclides: the method blank was not statistically different from the sample at 95% level of confidence.
E	The reported value is estimated because of the presence of interferences.
J	The reported value is qualified as estimated.
M	Radionuclides: the expected and measured value for the matrix spike is statistically different at the 95% level of confidence.
R	Tracer recovery is less than 30% or greater than 110%.
U	Undetected

Some results for radionuclides are reported in exponential 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). Data qualifiers, if any, are to the right of the result (for example, 5.66E-07 U, where U is the data qualifier that indicates the parameter was undetected).

Table 4.1. Volatile organic compounds detected at the X-749/X-120/PK Landfill

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
PK-16G	cis-1,2-Dichloroethene	µg/L	2 U		2	
	Vinyl chloride	µg/L	1 U		2	
PK-17B	1,1-Dichloroethane	µg/L	2		5	
	cis-1,2-Dichloroethene	µg/L	27		51	
	trans-1,2-Dichloroethene	µg/L	2 U		2	
	Trichloroethene	µg/L	2		4	
	Vinyl chloride	µg/L	15		36	
PK-20B	1,1-Dichloroethane	µg/L	2 U		14	
	cis-1,2-Dichloroethene	µg/L	2 U		2	
	Vinyl chloride	µg/L	1 U		2	
PK-21B	1,1-Dichloroethane	µg/L	220		240	
	cis-1,2-Dichloroethene	µg/L	13		15	
	Vinyl chloride	µg/L	44		34	
PK-PL6	1,1,1-Trichloroethane	µg/L	7	7	7	4
	1,1-Dichloroethane	µg/L	17	19	26	18
	1,1-Dichloroethene	µg/L	6	7	12	7
	cis-1,2-Dichloroethene	µg/L	2	3	3	3
	Trichloroethene	µg/L	3	4	5	4
	Vinyl chloride	µg/L	1 U	1 U	2	1
PK-PL6A	1,1,1-Trichloroethane	µg/L	11	7	12	5
	1,1-Dichloroethane	µg/L	26	17	38	23
	1,1-Dichloroethene	µg/L	9	8	18	9
	cis-1,2-Dichloroethene	µg/L	3	3	4	3
	Trichloroethene	µg/L	4	4	8	5
	Vinyl chloride	µg/L	1	1	4	1
X120-05G	Trichloroethene	µg/L		7		7
X120-08G	1,1,1-Trichloroethane	µg/L		17		14
	1,1-Dichloroethane	µg/L		9		7
	1,1-Dichloroethene	µg/L		39		33
	Trichloroethene	µg/L		17		16
X120-11G	Trichloroethene	µg/L		610		570
X749-04G	Trichloroethene	µg/L				880
X749-06G	1,1,1-Trichloroethane	µg/L		1300		1300
	1,1-Dichloroethane	µg/L		2300		2300
	1,1-Dichloroethene	µg/L		2100		2200
	cis-1,2-Dichloroethene	µg/L		350		370
	Trichloroethene	µg/L		5500		6400
X749-07G	1,1,1-Trichloroethane	µg/L		460		400

Table 4.1. Volatile organic compounds detected at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-07G	1,1-Dichloroethane	µg/L		190		100 U
	1,1-Dichloroethene	µg/L		430		400
	Trichloroethene	µg/L		780		690
X749-08G	1,1,1-Trichloroethane	µg/L		650		390
	1,1,2-Trichloroethane	µg/L		20 U		3
	1,1-Dichloroethane	µg/L		230		180
	1,1-Dichloroethene	µg/L		770		520
	1,2-Dichloroethane	µg/L		37		33
	Chloroethane	µg/L		40 U		5
	Chloroform	µg/L		20 U		7
	cis-1,2-Dichloroethene	µg/L		200		170
	Trichloroethene	µg/L		800		700
	Vinyl chloride	µg/L		10		10
X749-09GA	1,1,1-Trichloroethane	µg/L				67.9
	1,1-Dichloroethane	µg/L				15.9
	1,1-Dichloroethene	µg/L				92.1
	1,2-Dichloroethane	µg/L				2.1
	Chloroform	µg/L				2
	cis-1,2-Dichloroethene	µg/L				12.8
	Trichloroethene	µg/L				37.1
	Vinyl chloride	µg/L				1.2
X749-10GA	1,1-Dichloroethane	µg/L				33.1
	1,1-Dichloroethene	µg/L				51.4
	cis-1,2-Dichloroethene	µg/L				10.7
X749-13G	1,1,1-Trichloroethane	µg/L		86		130
	1,1-Dichloroethane	µg/L		10		52
	1,1-Dichloroethene	µg/L		130		180
	1,2-Dichloroethane	µg/L		4 U		10
	Chloroform	µg/L		5		4 U
	cis-1,2-Dichloroethene	µg/L		13		53
	Trichloroethene	µg/L		130		160 J
X749-20G	1,1,1-Trichloroethane	µg/L				27
	1,1-Dichloroethane	µg/L				27
	1,1-Dichloroethene	µg/L				43
	1,2-Dichloroethane	µg/L				8
	Chloroform	µg/L				4
	cis-1,2-Dichloroethene	µg/L				15
	Trichloroethene	µg/L				180

Table 4.1. Volatile organic compounds detected at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-21G	1,1,1-Trichloroethane	µg/L		2 U		2
	Trichloroethene	µg/L		10		10
X749-25G	1,1,1-Trichloroethane	µg/L		67		100
	1,1-Dichloroethane	µg/L		17		13
	1,1-Dichloroethene	µg/L		89		140
	1,2-Dichloroethane	µg/L		3		2 U
	Chloroform	µg/L		2 U		5
	cis-1,2-Dichloroethene	µg/L		17		16
	Trichloroethene	µg/L		70		140 J
X749-26G	1,1,1-Trichloroethane	µg/L				150
	1,1-Dichloroethane	µg/L				300
	1,1-Dichloroethene	µg/L				240
	1,2-Dichloroethane	µg/L				130
	cis-1,2-Dichloroethene	µg/L				31
	Trichloroethene	µg/L				400 J
X749-35G	1,1,1-Trichloroethane	µg/L				320
	1,1-Dichloroethane	µg/L				21
	1,1-Dichloroethene	µg/L				130
	Trichloroethene	µg/L				310
X749-36G	1,1,1-Trichloroethane	µg/L				58
	1,1-Dichloroethane	µg/L				27
	1,1-Dichloroethene	µg/L				110
	Trichloroethene	µg/L				58
X749-37G	1,1,1-Trichloroethane	µg/L		220		270
	1,1-Dichloroethane	µg/L		120		140
	1,1-Dichloroethene	µg/L		360		460
	Trichloroethene	µg/L		360		470
X749-41G	Trichloroethene	µg/L		350		400
X749-42G	Trichloroethene	µg/L		81		110
X749-44G	1,1,1-Trichloroethane	µg/L		2		3
	1,1-Dichloroethane	µg/L		6		7
	1,1-Dichloroethene	µg/L		5		5
	1,2-Dichloroethane	µg/L		2		3
	Trichloroethene	µg/L		10		11
X749-45G	1,1-Dichloroethane	µg/L		2 U		2
	Trichloroethene	µg/L		6		7
X749-50B	1,1-Dichloroethane	µg/L				2
X749-54B	Trichloroethene	µg/L		29		27 J

Table 4.1. Volatile organic compounds detected at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-97G	Trichloroethene	µg/L		3		3 J
X749-EPW	1,1,1-Trichloroethane	µg/L	39		2 U	
	1,1-Dichloroethane	µg/L	86		3	
	1,1-Dichloroethene	µg/L	100		3	
	1,2-Dichloroethane	µg/L	15		2 U	
	Chloroform	µg/L	7		2 U	
	cis-1,2-Dichloroethene	µg/L	62		3	
	Trichloroethene	µg/L	510		38	
	Vinyl chloride	µg/L	8		1 U	
X749-PZ02G	Trichloroethene	µg/L		2		2 J
X749-PZ04G	1,1,1-Trichloroethane	µg/L	2 U	14	18	15
	1,1-Dichloroethane	µg/L	18	40	51	50
	1,1-Dichloroethene	µg/L	12	26	32	30
	1,2-Dichloroethane	µg/L	6	10	12	12
	cis-1,2-Dichloroethene	µg/L	6	14	14	17
	Trichloroethene	µg/L	58	120	150	160
X749-WPW	1,1,1-Trichloroethane	µg/L	100 U		73	
	1,1-Dichloroethane	µg/L	100 U		92	
	1,1-Dichloroethene	µg/L	100		120	
	cis-1,2-Dichloroethene	µg/L	100 U		71	
	Trichloroethene	µg/L	590		690	
	Vinyl chloride	µg/L	50 U		15	

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
PK-10G	Americium-241	pCi/L	0.257 U		-0.04221 U	
	Neptunium-237	pCi/L	-0.079 U		-0.0376 U	
	Plutonium-238	pCi/L	0.0528 U		0.01875 U	
	Plutonium-239/240	pCi/L	0.0264 U		0.01875 U	
	Technetium-99	pCi/L	4.15 U		-4.41 U	
	Uranium	µg/L	-0.142 U		0.2113 U	
	Uranium-233/234	pCi/L	0.0496 U		0.1284 U	
	Uranium-235	pCi/L	0.0204 U		-0.02262 U	
	Uranium-236	pCi/L	0 U		-0.04063 U	
	Uranium-238	pCi/L	-0.051 U		0.07471 U	
PK-11G	Americium-241	pCi/L	0.2634 U		0.01963 U	
	Neptunium-237	pCi/L	-0.275 U		-0.185 U	
	Plutonium-238	pCi/L	0 U		0.05535 U	
	Plutonium-239/240	pCi/L	0.0249 U		-0.01845 U	
	Technetium-99	pCi/L	5.39 U		-1.21 U	
	Uranium	µg/L	0.2339 U		-0.000328 U	
	Uranium-233/234	pCi/L	0.1149 U		0 U	
	Uranium-235	pCi/L	0.0236 U		0 U	
	Uranium-236	pCi/L	0 U		-0.02115 U	
	Uranium-238	pCi/L	0.0749 U		0 U	
PK-14G	Americium-241	pCi/L	-0.020 U		0.1803 U	
	Neptunium-237	pCi/L	-0.152 U		0.01768 U	
	Plutonium-238	pCi/L	-0.030 U		0.03527 U	
	Plutonium-239/240	pCi/L	-0.030 U		0.01763 U	
	Technetium-99	pCi/L	-7.73 U		2.72 U	
	Uranium	µg/L	0.8673		0.4615 U	
	Uranium-233/234	pCi/L	0.8515		0.1164 U	
	Uranium-235	pCi/L	0.0224 U		0 U	
	Uranium-236	pCi/L	0.0201 U		0.04296 U	
	Uranium-238	pCi/L	0.2878		0.1548 U	
PK-15B	Americium-241	pCi/L	0.0940 U		0.1028 U	
	Neptunium-237	pCi/L	0.0218 U		-0.09268 U	
	Plutonium-238	pCi/L	0.0651 U		0.03697 U	
	Plutonium-239/240	pCi/L	0.0651 U		0 U	
	Technetium-99	pCi/L	-7.14 U		8.08 U	
	Uranium	µg/L	-0.054 U		0.07842 U	
	Uranium-233/234	pCi/L	0.0892 U		0.3501	
	Uranium-235	pCi/L	0 U		0.02371 U	

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
PK-15B	Uranium-236	pCi/L	-0.04 U		0.0009314 U	
	Uranium-238	pCi/L	-0.018 U		0.02264 U	
PK-16G	Americium-241	pCi/L	0.0988 U		0.1005 U	
	Neptunium-237	pCi/L	-0.056 U		-0.03536 U	
	Plutonium-238	pCi/L	0.1123 U		0.03527 U	
	Plutonium-239/240	pCi/L	-0.028 U		0 U	
	Technetium-99	pCi/L	-6.69 U		2.51 U	
	Uranium	µg/L	2.465		1.677 U	
	Uranium-233/234	pCi/L	0.8768		0.5631	
	Uranium-235	pCi/L	0.0649 U		0.02105 U	
	Uranium-236	pCi/L	0.0194 U		-0.0756 U	
	Uranium-238	pCi/L	0.8182		0.5606 U	
PK-17B	Americium-241	pCi/L	0.1172 U		0.151 U	
	Neptunium-237	pCi/L	-0.109 U		0.01776 U	
	Plutonium-238	pCi/L	0 U		0.05312 U	
	Plutonium-239/240	pCi/L	0.0542 U		-0.1062 U	
	Technetium-99	pCi/L	-5.94 U		6 U	
	Uranium	µg/L	1.167		-0.03601 U	
	Uranium-233/234	pCi/L	0.187 U		-0.05318 U	
	Uranium-235	pCi/L	0 U		0.02015 U	
	Uranium-236	pCi/L	0.0414 U		-0.0857 U	
	Uranium-238	pCi/L	0.392		-0.01478 U	
PK-18B	Americium-241	pCi/L	0.1784 U		-0.009528 U	
	Neptunium-237	pCi/L	0.0601 U		-0.01823 U	
	Plutonium-238	pCi/L	0.03 U		0.07273 U	
	Plutonium-239/240	pCi/L	0.0899 U		0 U	
	Technetium-99	pCi/L	-5.43 U		3.55 U	
	Uranium	µg/L	0.164 U		-0.2049 U	
	Uranium-233/234	pCi/L	0.089 U		0.05157 U	
	Uranium-235	pCi/L	0.0219 U		0 U	
	Uranium-236	pCi/L	-0.02 U		-0.0381 U	
	Uranium-238	pCi/L	0.0518 U		-0.06867 U	
PK-19B	Americium-241	pCi/L	0.0423 U		-0.09307 U	
	Neptunium-237	pCi/L	-0.044 U		-0.07265 U	
	Plutonium-238	pCi/L	-0.044 U		0.07245 U	
	Plutonium-239/240	pCi/L	0.0665 U		0 U	
	Technetium-99	pCi/L	2.88 U		3.97 U	
	Uranium	µg/L	-3E-06 U		0.3564 U	

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
PK-19B	Uranium-233/234	pCi/L	-0.018 U		-0.1003 U	
	Uranium-235	pCi/L	0 U		1.649E-06 U	
	Uranium-236	pCi/L	0 U		-0.06664 U	
	Uranium-238	pCi/L	0 U		0.1201 U	
PK-20B	Americium-241	pCi/L	0.1477 U		0.103 U	
	Neptunium-237	pCi/L	-0.102 U		0 U	
	Plutonium-238	pCi/L	0 U		0.06179 U	
	Plutonium-239/240	pCi/L	0.0816 U		0.0206 U	
	Technetium-99	pCi/L	6.24 U		7.6 U	
	Uranium	µg/L	2.425		6.683	
	Uranium-233/234	pCi/L	1.409		3.82	
	Uranium-235	pCi/L	0.0209 U		0.08849 U	
	Uranium-236	pCi/L	0 U		0.09931 U	
	Uranium-238	pCi/L	0.8116		2.231	
PK-21B	Americium-241	pCi/L	0.1844 U		0.01776 U	
	Neptunium-237	pCi/L	-0.422 RU		-0.1194 U	
	Plutonium-238	pCi/L	0.1684 RU		0.1118 U	
	Plutonium-239/240	pCi/L	-0.084 RU		0.01891 U	
	Technetium-99	pCi/L	5.76 U		7.42 U	
	Uranium	µg/L	-0.055 U		0.4187 U	
	Uranium-233/234	pCi/L	0.0184 U		1.066	
	Uranium-235	pCi/L	0 U		0.03751 U	
	Uranium-236	pCi/L	-0.020 U		0.01684 U	
	Uranium-238	pCi/L	-0.018 U		0.1347	
PK-PL6	Americium-241	pCi/L	0.1905 U	0 U	0.03414 U	-0.0443 U
	Neptunium-237	pCi/L	0 U	-0.0866 U	0.05535 U	-0.07775 U
	Plutonium-238	pCi/L	0.036 U	9.7E-05 U	0.0736 U	0.07761 U
	Plutonium-239/240	pCi/L	0 U	0.02168 U	0 U	0 U
	Technetium-99	pCi/L	-0.164 U	9.86 U	4.67 U	0.669 U
	Uranium	µg/L	8.38	9.631	7.343	4.784
	Uranium-233/234	pCi/L	7.693	9.052	6.852	3.865
	Uranium-235	pCi/L	0.3507	0.6768	0.522	0.1555
	Uranium-236	pCi/L	0.1181	0.02026 U	0.0721 U	0.02332 U
	Uranium-238	pCi/L	2.76	3.131	2.385	1.593
PK-PL6A	Americium-241	pCi/L	0.753 RU	0.01983 U	0.148 U	-0.07927 U
	Neptunium-237	pCi/L	0.0798 U	-0.3016 U	-0.101 U	-0.119 U
	Plutonium-238	pCi/L	0.0597 U	-6E-06 U	0 U	6.79E-05 U
	Plutonium-239/240	pCi/L	0.0398 U	-0.0231 U	0 U	0.03395 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
PK-PL6A	Technetium-99	pCi/L	1 U	9.07 U	5.13 U	-2.26 U
	Uranium	µg/L	14.52	2.805	1.936	3.098
	Uranium-233/234	pCi/L	8.413	0.8617	0.9285	1.276
	Uranium-235	pCi/L	0.3265	0.04832 U	0.06136 U	0.05339 U
	Uranium-236	pCi/L	-0.021 U	0 U	-0.03674 U	0.04791 U
	Uranium-238	pCi/L	4.827	0.935	0.6413	1.036
X120-05G	Americium-241	pCi/L		0.1384 U		0.08887 U
	Neptunium-237	pCi/L		-0.0245 U		-0.09045 U
	Plutonium-238	pCi/L		0.09786 U		0.0542 U
	Plutonium-239/240	pCi/L		0 U		0.03615 U
	Technetium-99	pCi/L		2.89 U		-3.24 U
	Uranium	µg/L		0.05376 U		0.1743 U
	Uranium-233/234	pCi/L		-0.0364 U		0.000122 U
	Uranium-235	pCi/L		0 U		-0.02507 U
	Uranium-236	pCi/L		-0.0202 U		-0.02251 U
	Uranium-238	pCi/L		0.01817 U		0.06092 U
X120-08G	Americium-241	pCi/L		0.04109 U		0.1456 U
	Neptunium-237	pCi/L		-0.2763 U		-0.04747 U
	Plutonium-238	pCi/L		0.1102 U		2.37E-05 U
	Plutonium-239/240	pCi/L		0 U		0.02373 U
	Technetium-99	pCi/L		2.38 U		-1.06 U
	Uranium	µg/L		-0.0586 U		0.000213 U
	Uranium-233/234	pCi/L		-0.0707 U		0.09176 U
	Uranium-235	pCi/L		-0.0218 U		2.82E-05 U
	Uranium-236	pCi/L		-0.0196 U		0 U
	Uranium-238	pCi/L		-0.0162 U		6.85E-05 U
X120-11G	Americium-241	pCi/L		0.04176 U		-0.07185 U
	Neptunium-237	pCi/L		-0.1076 U		-0.09765 U
	Plutonium-238	pCi/L		0.05364 U		0.02444 U
	Plutonium-239/240	pCi/L		-0.0536 U		0.0488 U
	Technetium-99	pCi/L		4.14 U		3.75 U
	Uranium	µg/L		0.3041		0.2609 U
	Uranium-233/234	pCi/L		0.1593 U		0.1101 U
	Uranium-235	pCi/L		-0.0437 U		0 U
	Uranium-236	pCi/L		0.0196 U		-0.02428 U
	Uranium-238	pCi/L		0.1089		0.08778 U
X749-04G	Americium-241	pCi/L				-0.1068 U
	Neptunium-237	pCi/L				-0.0175 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-04G	Plutonium-238	pCi/L				0.0701 U
	Plutonium-239/240	pCi/L				0.01752 U
	Technetium-99	pCi/L				-0.944 U
	Uranium	µg/L				0.1454 U
	Uranium-233/234	pCi/L				-0.196 U
	Uranium-235	pCi/L				0 U
	Uranium-236	pCi/L				-0.02711 U
	Uranium-238	pCi/L				0.04901 U
X749-06G	Americium-241	pCi/L		0 U		-0.02315 U
	Neptunium-237	pCi/L		-0.1247 U		-0.06394 U
	Plutonium-238	pCi/L		0.07463 U		0.08522 U
	Plutonium-239/240	pCi/L		0.04975 U		0.0213 U
	Technetium-99	pCi/L		38.1		59.9
	Uranium	µg/L		0.09957 U		-0.00708 U
	Uranium-233/234	pCi/L		0.1508 U		-0.06517 U
	Uranium-235	pCi/L		2.8E-06 U		-0.02685 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0.03345 U		2.17E-05 U
X749-07G	Americium-241	pCi/L		0.07225 U		-0.05634 U
	Neptunium-237	pCi/L		-0.0917 U		-0.05212 U
	Plutonium-238	pCi/L		0.06858 U		0.03475 U
	Plutonium-239/240	pCi/L		-2E-06 U		0.01739 U
	Technetium-99	pCi/L		134		104
	Uranium	µg/L		0.228 U		-0.1485 U
	Uranium-233/234	pCi/L		0.3257		0.07544 U
	Uranium-235	pCi/L		0 U		0 U
	Uranium-236	pCi/L		0.02122 U		0.02781 U
	Uranium-238	pCi/L		0.07648 U		-0.05004 U
X749-08G	Americium-241	pCi/L		0.06008 U		0.03662 U
	Neptunium-237	pCi/L		-1E-05 U		-0.01854 U
	Plutonium-238	pCi/L		-4E-06 U		-0.01851 U
	Plutonium-239/240	pCi/L		0 U		0.01856 U
	Technetium-99	pCi/L		23.8		15.2
	Uranium	µg/L		0.1722 U		0.05443 U
	Uranium-233/234	pCi/L		0.2314		0.1444 U
	Uranium-235	pCi/L		0 U		-0.0254 U
	Uranium-236	pCi/L		0.02136 U		-0.0228 U
	Uranium-238	pCi/L		0.05774 U		0.02067 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-09GA	Americium-241	pCi/L				0.07894 U
	Neptunium-237	pCi/L				0.05284 U
	Plutonium-238	pCi/L				0.05266 U
	Plutonium-239/240	pCi/L				-0.01753 U
	Technetium-99	pCi/L				8.22 U
	Uranium	µg/L				1.533
	Uranium-233/234	pCi/L				0.4799
	Uranium-235	pCi/L				0.1615 U
	Uranium-236	pCi/L				0.04838 U
	Uranium-238	pCi/L				0.5006
X749-10GA	Americium-241	pCi/L				-0.05957 U
	Neptunium-237	pCi/L				0.1488 U
	Plutonium-238	pCi/L				0.01856 U
	Plutonium-239/240	pCi/L				0.05563 U
	Technetium-99	pCi/L				-0.665 U
	Uranium	µg/L				-0.01497 U
	Uranium-233/234	pCi/L				0.4181
	Uranium-235	pCi/L				-0.05717 U
	Uranium-236	pCi/L				-0.02564 U
	Uranium-238	pCi/L				0.000182 U
X749-13G	Americium-241	pCi/L		-0.0391 U		0.04619 U
	Neptunium-237	pCi/L		0.0387 U		-0.2128 U
	Plutonium-238	pCi/L		-0.0193 U		-0.02827 U
	Plutonium-239/240	pCi/L		1.6E-06 U		-0.01414 U
	Technetium-99	pCi/L		57.7		2.24 U
	Uranium	µg/L		0.5888 U		0.6762 U
	Uranium-233/234	pCi/L		0.2704		0.0993 U
	Uranium-235	pCi/L		4.8E-06 U		-0.04072 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0.1979 U		0.2309
X749-14B	Americium-241	pCi/L				0.1023 U
	Neptunium-237	pCi/L				-0.1173 U
	Plutonium-238	pCi/L				0.03908 U
	Plutonium-239/240	pCi/L				-0.01947 U
	Technetium-99	pCi/L				-3.4 U
	Uranium	µg/L				-0.05141 U
	Uranium-233/234	pCi/L				0.06955 U
	Uranium-235	pCi/L				0 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-14B	Uranium-236	pCi/L				0 U
	Uranium-238	pCi/L				-0.01728 U
X749-20G	Americium-241	pCi/L				0.3631
	Neptunium-237	pCi/L				-0.2452 U
	Plutonium-238	pCi/L				0.08642 U
	Plutonium-239/240	pCi/L				0.0144 U
	Technetium-99	pCi/L				2.54 U
	Uranium	µg/L				1.167
	Uranium-233/234	pCi/L				1.751
	Uranium-235	pCi/L				0 U
	Uranium-236	pCi/L				-0.0395 U
	Uranium-238	pCi/L				0.3923
X749-21G	Americium-241	pCi/L		0.01994 U		-0.02811 U
	Neptunium-237	pCi/L		-0.0949 MU		-0.1404 U
	Plutonium-238	pCi/L		0.09463 U		0.0527 U
	Plutonium-239/240	pCi/L		0.02366 U		1.78E-05 U
	Technetium-99	pCi/L		9.18 U		4.2 U
	Uranium	µg/L		-0.0061 U		-0.2479 U
	Uranium-233/234	pCi/L		0.05577 U		-0.08343 U
	Uranium-235	pCi/L		-0.0229 U		0 U
	Uranium-236	pCi/L		0 U		0.03094 U
	Uranium-238	pCi/L		0.00152 U		-0.08346 U
X749-23G	Americium-241	pCi/L		0.06265 U		0.1671 U
	Neptunium-237	pCi/L		-0.0556 U		-0.03505 U
	Plutonium-238	pCi/L		0.1108 U		0.1405 U
	Plutonium-239/240	pCi/L		0.02771 U		0.01754 U
	Technetium-99	pCi/L		5.51 U		-5.4 U
	Uranium	µg/L		0.1187 U		0.4748 U
	Uranium-233/234	pCi/L		0 U		0.0524 U
	Uranium-235	pCi/L		0 U		0.03227 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0.03988 U		0.1567 U
X749-24G	Americium-241	pCi/L		0.03018 U		0.1076 U
X749-42G	Neptunium-237	pCi/L		0.08549 U		3.7E-05 U
X749-24G	Neptunium-237	pCi/L		-0.0232 U		-0.1922 U
	Plutonium-238	pCi/L		0.04622 U		0.08751 U
	Plutonium-239/240	pCi/L		-0.0231 U		-0.01745 U
	Technetium-99	pCi/L		3.9 U		-5.44 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-24G	Uranium	µg/L		0.1058 U		-0.00872 U
	Uranium-233/234	pCi/L		0.1015 U		-0.05757 U
	Uranium-235	pCi/L		0.02087 U		-0.03563 U
	Uranium-236	pCi/L		-0.0187 U		0.03203 U
	Uranium-238	pCi/L		0.03238 U		8.65E-05 U
X749-25G	Americium-241	pCi/L		0.08922		0.000135 U
	Neptunium-237	pCi/L		-0.1622 U		-0.1921 U
	Plutonium-238	pCi/L		0.06065 U		0.1344 U
	Plutonium-239/240	pCi/L		1.4E-06 U		-0.01916 U
	Technetium-99	pCi/L		20.9		-4.22 U
	Uranium	µg/L		0.0545 U		0.32 U
	Uranium-233/234	pCi/L		0.1336 U		0.111 U
	Uranium-235	pCi/L		0.0206 U		-0.03417 U
	Uranium-236	pCi/L		-0.037 U		-0.03068 U
	Uranium-238	pCi/L		0.0153 U		0.1107 U
X749-26G	Americium-241	pCi/L				0.1831 U
	Neptunium-237	pCi/L				-0.08365 U
	Plutonium-238	pCi/L				0.1844 U
	Plutonium-239/240	pCi/L				-0.01672 U
	Technetium-99	pCi/L				1.4 U
	Uranium	µg/L				0.5682 U
	Uranium-233/234	pCi/L				2.232
	Uranium-235	pCi/L				0.05737 U
	Uranium-236	pCi/L				0 U
	Uranium-238	pCi/L				0.1857 U
X749-35G	Americium-241	pCi/L				0.02862 U
	Neptunium-237	pCi/L				0.000308 U
	Plutonium-238	pCi/L				0.000329 U
	Plutonium-239/240	pCi/L				0.1197 U
	Technetium-99	pCi/L				-0.869 U
	Uranium	µg/L				0.506 U
	Uranium-233/234	pCi/L				0.058 U
	Uranium-235	pCi/L				-0.03563 U
	Uranium-236	pCi/L				0 U
	Uranium-238	pCi/L				0.1732 U
X749-36G	Americium-241	pCi/L				0.08942 U
	Neptunium-237	pCi/L				0.01813 U
	Plutonium-238	pCi/L				0.03614 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-36G	Plutonium-239/240	pCi/L				3.61E-05 U
	Technetium-99	pCi/L				0.183 U
	Uranium	µg/L				0.2663 U
	Uranium-233/234	pCi/L				0.02322 U
	Uranium-235	pCi/L				-0.0285 U
	Uranium-236	pCi/L				-0.05118 U
	Uranium-238	pCi/L				0.09231 U
X749-37G	Americium-241	pCi/L		0.04267 U		0.2646 U
	Neptunium-237	pCi/L		-0.0426 U		-0.09346 U
	Plutonium-238	pCi/L		0.02122 U		0.07472 U
	Plutonium-239/240	pCi/L		-0.0212 U		0.03738 U
	Technetium-99	pCi/L		27.3		24.5
	Uranium	µg/L		-0.2119 U		-0.1405 U
	Uranium-233/234	pCi/L		0.107 U		-0.1181 U
	Uranium-235	pCi/L		-1E-06 U		0 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		-0.0712 U		-0.0472 U
X749-41G	Americium-241	pCi/L		0.08178 U		0.1028 U
	Neptunium-237	pCi/L		0.1769 U		5.06E-05 U
	Plutonium-238	pCi/L		8.8E-06 U		0.03366 U
	Plutonium-239/240	pCi/L		0.0441 U		0.03364 U
	Technetium-99	pCi/L		4.28 U		-3.47 U
	Uranium	µg/L		0.01757 U		0.05778 U
	Uranium-233/234	pCi/L		0.1784 U		0.0435 U
	Uranium-235	pCi/L		0.06603 U		-0.02674 U
	Uranium-236	pCi/L		0 U		0.02403 U
	Uranium-238	pCi/L		-0.0044 U		0.02167 U
X749-42G	Americium-241	pCi/L		0.07442 U		2.18E-05 U
	Plutonium-238	pCi/L		0.02132 U		0.01846 U
	Plutonium-239/240	pCi/L		1.1E-05 U		-0.01843 U
	Technetium-99	pCi/L		1.22 U		2.14 U
	Uranium	µg/L		-0.0588 U		-0.1511 U
	Uranium-233/234	pCi/L		0.1584 U		-0.02275 U
	Uranium-235	pCi/L		0 U		-0.0564 U
	Uranium-236	pCi/L		0 U		-0.02532 U
	Uranium-238	pCi/L		-0.0198 U		-0.04561 U
X749-44G	Americium-241	pCi/L		0.05503 U		0.1683 U
	Neptunium-237	pCi/L		-0.1721 U		0.03439 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-44G	Plutonium-238	pCi/L		-0.0191 U		0.06859 U
	Plutonium-239/240	pCi/L		0.05723 U		0.06859 U
	Technetium-99	pCi/L		15.5		11.1 U
	Uranium	µg/L		0.4625		0.06321 U
	Uranium-233/234	pCi/L		0.48		-0.03813 U
	Uranium-235	pCi/L		0.02368 U		0.02356 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0.1517		0.01914 U
X749-45G	Americium-241	pCi/L		0 U		0.2565 U
	Neptunium-237	pCi/L		0.02213 U		-0.01663 U
	Plutonium-238	pCi/L		0.1103 U		0 U
	Plutonium-239/240	pCi/L		1.5E-06 U		1.66E-05 U
	Technetium-99	pCi/L		6.71 U		3.86 U
	Uranium	µg/L		-0.0463 U		0.000984 U
	Uranium-233/234	pCi/L		0.1087 U		0.1289 U
	Uranium-235	pCi/L		2.6E-06 U		0 U
	Uranium-236	pCi/L		-0.0172 U		0.05711 U
	Uranium-238	pCi/L		-0.0155 U		2.57E-05 U
X749-50B	Americium-241	pCi/L				0.07327 U
	Neptunium-237	pCi/L				-0.1074 U
	Plutonium-238	pCi/L				-0.05333 U
	Plutonium-239/240	pCi/L				0.05365 U
	Technetium-99	pCi/L				10.6 U
	Uranium	µg/L				0.494 U
	Uranium-233/234	pCi/L				-0.04253 U
	Uranium-235	pCi/L				-0.05284 U
	Uranium-236	pCi/L				-0.09489 U
	Uranium-238	pCi/L				0.1712 U
X749-51B	Americium-241	pCi/L				-0.01672 U
	Neptunium-237	pCi/L				-0.04718 U
	Plutonium-238	pCi/L				0.07864 U
	Plutonium-239/240	pCi/L				0 U
	Technetium-99	pCi/L				1.46 U
	Uranium	µg/L				0.4503 U
	Uranium-233/234	pCi/L				0.4548
	Uranium-235	pCi/L				0 U
	Uranium-236	pCi/L				0 U
	Uranium-238	pCi/L				0.1513 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-54B	Americium-241	pCi/L		0.1836 U		0.04712 U
	Neptunium-237	pCi/L		-0.1717 U		-0.1489 U
	Plutonium-238	pCi/L		0 U		0.07437 U
	Plutonium-239/240	pCi/L		0.02446 U		0.03718 U
	Technetium-99	pCi/L		4.32 U		-5.54 U
	Uranium	µg/L		-0.0535 U		0.06046 U
	Uranium-233/234	pCi/L		0.146 U		-0.06088 U
	Uranium-235	pCi/L		0 U		0 U
	Uranium-236	pCi/L		0.04042 U		2.25E-05 U
	Uranium-238	pCi/L		-0.0182 U		0.02032 U
X749-60B	Americium-241	pCi/L				0.09357 U
	Neptunium-237	pCi/L				-0.03496 U
	Plutonium-238	pCi/L				0.03501 U
	Plutonium-239/240	pCi/L				0.06998 U
	Technetium-99	pCi/L				3.15 U
	Uranium	µg/L				0.8179 U
	Uranium-233/234	pCi/L				1.144
	Uranium-235	pCi/L				0 U
	Uranium-236	pCi/L				0 U
	Uranium-238	pCi/L				0.2748
X749-63B	Americium-241	pCi/L				-0.04536 U
	Neptunium-237	pCi/L				-0.09077 U
	Plutonium-238	pCi/L				9.07E-05 U
	Plutonium-239/240	pCi/L				0.1211 U
	Technetium-99	pCi/L				-6.42 U
	Uranium	µg/L				-0.4902 U
	Uranium-233/234	pCi/L				-0.07333 U
	Uranium-235	pCi/L				2.27E-05 U
	Uranium-236	pCi/L				0.04074 U
	Uranium-238	pCi/L				-0.1649 U
X749-64B	Americium-241	pCi/L				-0.1286 U
	Neptunium-237	pCi/L				-0.03768 U
	Plutonium-238	pCi/L				0.03766 U
	Plutonium-239/240	pCi/L				-0.01881 U
	Technetium-99	pCi/L				-7.66 U
	Uranium	µg/L				2.15
	Uranium-233/234	pCi/L				2.342
	Uranium-235	pCi/L				0.0572 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-64B	Uranium-236	pCi/L				0 U
	Uranium-238	pCi/L				0.7173
X749-68G	Americium-241	pCi/L				0.08623 U
	Neptunium-237	pCi/L				7.2E-05 U
	Plutonium-238	pCi/L				0.0539 U
	Plutonium-239/240	pCi/L				1.8E-05 U
	Technetium-99	pCi/L				2.71 U
	Uranium	µg/L				0.2294 U
	Uranium-233/234	pCi/L				-0.01921 U
	Uranium-235	pCi/L				2.39E-05 U
	Uranium-236	pCi/L				-0.04285 U
	Uranium-238	pCi/L				0.07732 U
X749-96G	Americium-241	pCi/L		0.03926 U		0.02811 U
	Neptunium-237	pCi/L		-0.0489 U		-0.05489 U
	Plutonium-238	pCi/L		-0.0731 U		0.07315 U
	Plutonium-239/240	pCi/L		-4E-06 U		0.01828 U
	Technetium-99	pCi/L		6.29 U		-0.976 U
	Uranium	µg/L		0.06161 U		0.1971 U
	Uranium-233/234	pCi/L		0.2073		-0.0886 U
	Uranium-235	pCi/L		0 U		0 U
	Uranium-236	pCi/L		0 U		-0.04911 U
	Uranium-238	pCi/L		0.02069 U		0.0665 U
X749-97G	Americium-241	pCi/L		0.02034 U		0.1489 U
	Neptunium-237	pCi/L		-0.336 U		-0.1521 U
	Plutonium-238	pCi/L		0.2133 U		0 U
	Plutonium-239/240	pCi/L		0.03047 U		1.9E-05 U
	Technetium-99	pCi/L		7.23 U		1.26 U
	Uranium	µg/L		-0.0495 U		0.05689 U
	Uranium-233/234	pCi/L		0.09436 U		0.09512 U
	Uranium-235	pCi/L		0.02328 U		0 U
	Uranium-236	pCi/L		0.0209 U		0.02109 U
	Uranium-238	pCi/L		-0.0204 U		0.019 U
X749-98G	Americium-241	pCi/L		0 U		0.02068 U
	Neptunium-237	pCi/L		-0.2473 U		6.58E-05 U
	Plutonium-238	pCi/L		0.02242 U		0.0438 U
	Plutonium-239/240	pCi/L		-0.0224 U		0.04377 U
	Technetium-99	pCi/L		5.03 U		-3.61 U
	Uranium	µg/L		0.3426 U		0.4548 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-98G	Uranium-233/234	pCi/L		0.1763 U		0.1077 U
	Uranium-235	pCi/L		-0.0242 U		0.0266 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0.1189 U		0.1505
X749-99M	Americium-241	pCi/L		0.02055 U		0.1659 U
	Neptunium-237	pCi/L		-0.156 U		0.02001 U
	Plutonium-238	pCi/L		0.06666 U		5.95E-05 U
	Plutonium-239/240	pCi/L		0.02222 U		0.03967 U
	Technetium-99	pCi/L		2.87 U		-6.49 U
	Uranium	µg/L		3.2E-06 U		-0.00768 U
	Uranium-233/234	pCi/L		0.01989 U		-0.08543 U
	Uranium-235	pCi/L		0 U		-0.02635 U
	Uranium-236	pCi/L		0 U		-0.04732 U
	Uranium-238	pCi/L		0 U		2.13E-05 U
X749-100M	Americium-241	pCi/L		0.04047 U		0.1053 U
	Neptunium-237	pCi/L		-0.0789 U		5.08E-05 U
	Plutonium-238	pCi/L		-0.059 U		0.06758 U
	Plutonium-239/240	pCi/L		0.01967 U		0.01689 U
	Technetium-99	pCi/L		6.96 U		-4.42 U
	Uranium	µg/L		0.1921 U		0.2188 U
	Uranium-233/234	pCi/L		0.133 U		-0.1891 U
	Uranium-235	pCi/L		-0.0205 U		0.02922 U
	Uranium-236	pCi/L		-1E-06 U		2.62E-05 U
	Uranium-238	pCi/L		0.06775 U		0.07091 U
X749-101M	Americium-241	pCi/L		0.05978 U		0.1238 U
	Neptunium-237	pCi/L		-0.0901 U		0.1487 U
	Plutonium-238	pCi/L		0.04491 U		-0.02112 U
	Plutonium-239/240	pCi/L		-0.0449 U		0.02116 U
	Technetium-99	pCi/L		3.15 U		-0.6 U
	Uranium	µg/L		0.4199		0.05548 U
	Uranium-233/234	pCi/L		0.0871 U		0.04205 U
	Uranium-235	pCi/L		0.02149 U		-0.02578 U
	Uranium-236	pCi/L		0.01929 U		0 U
	Uranium-238	pCi/L		0.1376		0.02094 U
X749-EPW	Americium-241	pCi/L	0.0900 U		0.06164 U	
	Neptunium-237	pCi/L	0.0207 U		-0.05428 U	
	Plutonium-238	pCi/L	0.0414 U		0.03609 U	
	Plutonium-239/240	pCi/L	0.0414 U		-0.01804 U	

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-EPW	Technetium-99	pCi/L	40.4		72.8	
	Uranium	µg/L	-0.0003 U		0.006072 U	
	Uranium-233/234	pCi/L	0.0534 U		0.05291 U	
	Uranium-235	pCi/L	0 U		0.02177 U	
	Uranium-236	pCi/L	-0.02 U		0.01954 U	
	Uranium-238	pCi/L	0 U		-0.00145 U	
X749-PZ02G	Americium-241	pCi/L		0.2944 U		0.000257 U
	Neptunium-237	pCi/L		-0.0251 U		0.03205 U
	Plutonium-238	pCi/L		0.07504 U		0.04797 U
	Plutonium-239/240	pCi/L		0.02501 U		-0.01596 U
	Technetium-99	pCi/L		11.1 U		-4.68 U
	Uranium	µg/L		0.05372 U		-0.4283 U
	Uranium-233/234	pCi/L		0.4361 B		-0.1012 U
	Uranium-235	pCi/L		0 U		-0.02501 U
	Uranium-236	pCi/L		-0.0201 U		-0.02246 U
	Uranium-238	pCi/L		0.01813 U		-0.1416 U
X749-PZ03G	Americium-241	pCi/L	0.0184 U	0.08264 U	-0.1073 U	0.2182 U
	Neptunium-237	pCi/L	0.0212 U	-0.0203 U	0 U	-0.05266 U
	Plutonium-238	pCi/L	0.0844 U	0.04038 U	0.06474 U	0.07016 U
	Plutonium-239/240	pCi/L	-0.021 U	-3E-06 U	0 U	0.03508 U
	Technetium-99	pCi/L	-1.21 U	7.21 U	8.03 U	-0.295 U
	Uranium	µg/L	0.0589 U	0.1854 U	0.005736 U	0.1362 U
	Uranium-233/234	pCi/L	0.1462 U	0.04006 U	-0.1113 U	0.1147 U
	Uranium-235	pCi/L	0.0401 U	0.02471 U	0.02288 U	0 U
	Uranium-236	pCi/L	0 U	0.02218 U	-0.02054 U	2.53E-05 U
	Uranium-238	pCi/L	0.0136 U	0.05833 U	-0.001517 U	0.04576 U
X749-PZ04G	Americium-241	pCi/L	0.2212 U	0.04386 U	0.08351 U	0.06503 U
	Neptunium-237	pCi/L	-0.225 U	-0.105 U	-0.05486 U	-0.07029 U
	Plutonium-238	pCi/L	0.025 U	0.04188 U	0.05471 U	0.0351 U
	Plutonium-239/240	pCi/L	0.025 U	-8E-06 U	0.07294 U	-0.01751 U
	Technetium-99	pCi/L	22	58.9	76.6	73.4
	Uranium	µg/L	0.2536 U	0.06121 U	0.05381 U	-0.05988 U
	Uranium-233/234	pCi/L	0.2341	-0.0205 U	-0.1087 U	0.1023 U
	Uranium-235	pCi/L	0 U	0 U	0 U	2.52E-05 U
	Uranium-236	pCi/L	0.0472 U	0.0227 U	0 U	0.04529 U
	Uranium-238	pCi/L	0.085 U	0.02045 U	0.01809 U	-0.02036 U
X749-PZ05G	Americium-241	pCi/L	-0.018 U	0 U	0.109 U	-0.01841 U
	Neptunium-237	pCi/L	-0.023 U	0.02704 U	0 U	-0.03355 U

Table 4.2. Results for radionuclides at the X-749/X-120/PK Landfill (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749-PZ05G	Plutonium-238	pCi/L	0.0908 U	0.02693 U	0.04901 U	0.03354 U
	Plutonium-239/240	pCi/L	0.0681 U	0.02692 U	-0.04901 U	0 U
	Technetium-99	pCi/L	0.156 U	2.47 U	3.06 U	-3.16 U
	Uranium	µg/L	0.3318 U	0.00582 U	0.2246 U	0.4366 U
	Uranium-233/234	pCi/L	0.2826	-0.1595 U	0.1361 U	0.06218 U
	Uranium-235	pCi/L	0.0194 U	0.0246 U	-0.02399 U	0.02552 U
	Uranium-236	pCi/L	0.0174 U	-0.0442 U	0 U	-0.02287 U
	Uranium-238	pCi/L	0.1084 U	-0.0016 U	0.07921 U	0.1445 U
X749-PZ06G	Americium-241	pCi/L				0.08966 U
	Neptunium-237	pCi/L				-0.01821 U
	Plutonium-238	pCi/L				0.05489 U
	Plutonium-239/240	pCi/L				0.01829 U
	Technetium-99	pCi/L				-3.09 U
	Uranium	µg/L				0.2051 U
	Uranium-233/234	pCi/L				-0.1611 U
	Uranium-235	pCi/L				0 U
	Uranium-236	pCi/L				-0.02552 U
	Uranium-238	pCi/L				0.06905 U
X749-WPW	Americium-241	pCi/L	0.1433 U		0.04386 U	
	Neptunium-237	pCi/L	-0.131 U		-0.02056 U	
	Plutonium-238	pCi/L	0.0651 U		0.02051 U	
	Plutonium-239/240	pCi/L	0.0217 U		0.04101 U	
	Technetium-99	pCi/L	670		289	
	Uranium	µg/L	0.5152 U		-0.01131 U	
	Uranium-233/234	pCi/L	0.1349 U		0.1181 U	
	Uranium-235	pCi/L	0 U		-0.04161 U	
	Uranium-236	pCi/L	0 U		-0.01868 U	
	Uranium-238	pCi/L	0.1731		0.002761 U	

Table 4.3. Volatile organic compounds detected at the Quadrant I Groundwater Investigative Area

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X230K-15G	Trichloroethene	µg/L			6	
X231A-01G	1,1-Dichloroethane	µg/L			5	
	Trichloroethene	µg/L			17	
X231A-04G	Trichloroethene	µg/L			95	
X231B-02G	cis-1,2-Dichloroethene	µg/L	320		200 U	
	Trichloroethene	µg/L	3300		300	
X231B-03G	1,1-Dichloroethene	µg/L	74		64	
	cis-1,2-Dichloroethene	µg/L	36		20 U	
	Trichloroethene	µg/L	320		570	
X231B-04G	Trichloroethene	µg/L	160		220	
X231B-06G	1,1,1-Trichloroethane	µg/L	2 U		17	
	1,1-Dichloroethane	µg/L	9		10 U	
	1,1-Dichloroethene	µg/L	27		29	
	cis-1,2-Dichloroethene	µg/L	22		11	
	Trichloroethene	µg/L	260		250	
X231B-08G	Trichloroethene	µg/L	140		85	
X231B-12G	Trichloroethene	µg/L	140		44	
X231B-14G	1,1,1-Trichloroethane	µg/L	10 U		12	
	1,1-Dichloroethene	µg/L	75		60	
	cis-1,2-Dichloroethene	µg/L	13		10 U	
	Trichloroethene	µg/L	250		220	
X231B-15G	1,1-Dichloroethene	µg/L	6		2	
	Trichloroethene	µg/L	2		2 U	
X231B-16G	1,1-Dichloroethene	µg/L	3		4	
X231B-20G	cis-1,2-Dichloroethene	µg/L	7		20 U	
	Trichloroethene	µg/L	990		580	
	Vinyl chloride	µg/L	1		10 U	
X231B-23G	1,1-Dichloroethene	µg/L	4 U		9	
	Trichloroethene	µg/L	120		16	
X231B-37G	1,1-Dichloroethane	µg/L	12		9	
	1,1-Dichloroethene	µg/L	16		9	
	cis-1,2-Dichloroethene	µg/L	13		8	
	Trichloroethene	µg/L	68		45	
X326-09G	cis-1,2-Dichloroethene	ug/L	17		200 U	
	Trichloroethene	ug/L	2800		3400	
X326-10G	Chloroform	ug/L	3		2 U	
	Trichloroethene	ug/L	4		3	
X626-07G	Trichloroethene	µg/L	2900		1600	

Table 4.3. Volatile organic compounds detected at the Quadrant I Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749A-01G	Trichloroethene	µg/L		25		
X770-MW17G	Chloroform	ug/L	3		2 U	
	cis-1,2-Dichloroethene	ug/L	220		220	
	trans-1,2-Dichloroethene	ug/L	2		2 U	
	Trichloroethene	ug/L	6900		6200	

Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X230K-11G	Americium-241	pCi/L			0.03826 U	
	Neptunium-237	pCi/L			-0.076 U	
	Plutonium-238	pCi/L			0.07579 U	
	Plutonium-239/240	pCi/L			-0.05052 U	
	Technetium-99	pCi/L			-8.32 U	
	Uranium	µg/L			0.4148 U	
	Uranium-233/234	pCi/L			0.4882	
	Uranium-235	pCi/L			0.02409 U	
	Uranium-236	pCi/L			0.1514	
	Uranium-238	pCi/L			0.1348 U	
X230K-15G	Americium-241	pCi/L			0.0337 U	
	Neptunium-237	pCi/L			-0.2054 U	
	Plutonium-238	pCi/L			0.03724 U	
	Plutonium-239/240	pCi/L			0.01862 U	
	Technetium-99	pCi/L			-2.45 U	
	Uranium	µg/L			-0.07333 U	
	Uranium-233/234	pCi/L			2.832E-06 U	
	Uranium-235	pCi/L			-0.08421 U	
	Uranium-236	pCi/L			-0.0189 U	
	Uranium-238	pCi/L			-0.01145 U	
X231A-01G	Americium-241	pCi/L			0.07441 U	
	Neptunium-237	pCi/L			-0.07589 U	
	Plutonium-238	pCi/L			0.01892 U	
	Plutonium-239/240	pCi/L			0 U	
	Technetium-99	pCi/L			20.1	
	Uranium	µg/L			21.86	
	Uranium-233/234	pCi/L			7.258	
	Uranium-235	pCi/L			0.2865	
	Uranium-236	pCi/L			0.1072 U	
	Uranium-238	pCi/L			7.302	
X231A-04G	Americium-241	pCi/L			-0.01683 U	
	Neptunium-237	pCi/L			-0.06034 U	
	Plutonium-238	pCi/L			0.02006 U	
	Plutonium-239/240	pCi/L			0.04011 U	
	Technetium-99	pCi/L			11.5	
	Uranium	µg/L			0.2931 U	
	Uranium-233/234	pCi/L			0 U	
	Uranium-235	pCi/L			-0.051 U	

Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X231A-04G	Uranium-236	pCi/L			-0.0229 U	
	Uranium-238	pCi/L			0.1065 U	
X231B-02G	Americium-241	pCi/L	-0.018 U		0.061 U	
	Neptunium-237	pCi/L	-0.195 U		-0.02131 U	
	Plutonium-238	pCi/L	0.0779 U		0.04251 U	
	Plutonium-239/240	pCi/L	-0.019 U		0.02125 U	
	Technetium-99	pCi/L	3.81 U		29.1	
	Uranium	µg/L	0.57 U		0.4745 U	
	Uranium-233/234	pCi/L	0.233 U		-0.1068 U	
	Uranium-235	pCi/L	-0.024 U		-4.75E-06 U	
	Uranium-236	pCi/L	-0.022 U		-0.05912 U	
	Uranium-238	pCi/L	0.1954 U		0.1598 U	
X231B-03G	Americium-241	pCi/L	0.0944 U		0.02438 U	
	Neptunium-237	pCi/L	-0.105 U		0.03604 U	
	Plutonium-238	pCi/L	0.0626 U		0.01797 U	
	Plutonium-239/240	pCi/L	0.0209 U		0 U	
	Technetium-99	pCi/L	8.78 U		7.5 U	
	Uranium	µg/L	0.6071		0.09502 U	
	Uranium-233/234	pCi/L	0.1518 U		0.2725	
	Uranium-235	pCi/L	0.0208 U		-0.02102 U	
	Uranium-236	pCi/L	0.0374 U		-0.03774 U	
	Uranium-238	pCi/L	0.2006		0.03538 U	
X231B-04G	Americium-241	pCi/L	0.0946 U		0.1084	
	Neptunium-237	pCi/L	0.0705 U		-0.1498 U	
	Plutonium-238	pCi/L	0.0468 U		0.09957 U	
	Plutonium-239/240	pCi/L	-0.023 U		0 U	
	Technetium-99	pCi/L	33.6		28.6	
	Uranium	µg/L	19.93		3.593	
	Uranium-233/234	pCi/L	52.02		9.304	
	Uranium-235	pCi/L	2.166		0.308	
	Uranium-236	pCi/L	0.3647		-4.3E-06 U	
	Uranium-238	pCi/L	6.356		1.159	
X231B-06G	Americium-241	pCi/L	0.033 U		0.03647 U	
	Neptunium-237	pCi/L	0 U		0.05579 U	
	Plutonium-238	pCi/L	0.0654 U		0.01855 U	
	Plutonium-239/240	pCi/L	0.0436 U		0.03709 U	
	Technetium-99	pCi/L	85.9		26.9	
	Uranium	µg/L	1.757 U		0.5276 U	

Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X231B-06G	Uranium-233/234	pCi/L	2.044		0.7723	
	Uranium-235	pCi/L	-3E-07 U		0.06352 U	
	Uranium-236	pCi/L	0.0374 U		0.05703 U	
	Uranium-238	pCi/L	0.5902 U		0.1671 U	
X231B-08G	Americium-241	pCi/L	-0.114 U		0.2707 U	
	Neptunium-237	pCi/L	-0.04 U		-0.01775 U	
	Plutonium-238	pCi/L	-0.02 U		0.07081 U	
	Plutonium-239/240	pCi/L	0.0198 U		0 U	
	Technetium-99	pCi/L	11.6 U		11.4 U	
	Uranium	µg/L	0.5574 U		0.3689 U	
	Uranium-233/234	pCi/L	0.3764 B		0.2487 U	
	Uranium-235	pCi/L	0.0884 U		1.703E-06 U	
	Uranium-236	pCi/L	0.0993 U		-0.02295 U	
	Uranium-238	pCi/L	0.173 U		0.1241 U	
X231B-12G	Americium-241	pCi/L	-0.027 U		0.1388 U	
	Neptunium-237	pCi/L	0.0371 U		0 U	
	Plutonium-238	pCi/L	0.0741 U		0.03265 U	
	Plutonium-239/240	pCi/L	0.0185 U		-0.01632 U	
	Technetium-99	pCi/L	4.18 U		-0.428 U	
	Uranium	µg/L	0.3974 U		0.2173 U	
	Uranium-233/234	pCi/L	0.3627		0.1315 U	
	Uranium-235	pCi/L	0.0203 U		-0.02316 U	
	Uranium-236	pCi/L	0.0183 U		0.02081 U	
	Uranium-238	pCi/L	0.1303 U		0.07651 U	
X231B-14G	Americium-241	pCi/L	0.0478 U		0.05947 U	
	Neptunium-237	pCi/L	-0.169 U		-0.08667 U	
	Plutonium-238	pCi/L	0.0843 U		0.01729 U	
	Plutonium-239/240	pCi/L	0.0211 U		0.01728 U	
	Technetium-99	pCi/L	9.37 U		-0.499 U	
	Uranium	µg/L	0.8263		0.4492	
	Uranium-233/234	pCi/L	0.177 U		0.2613	
	Uranium-235	pCi/L	0 U		0.02302 U	
	Uranium-236	pCi/L	0 U		-0.02067 U	
	Uranium-238	pCi/L	0.2777		0.1475	
X231B-15G	Americium-241	pCi/L	0.1901 U		0.04461 U	
	Neptunium-237	pCi/L	-0.019 U		0 U	
	Plutonium-238	pCi/L	0.038 U		-0.02997 U	
	Plutonium-239/240	pCi/L	0 U		0.02996 U	

Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X231B-15G	Technetium-99	pCi/L	2.94 U		3.36 U	
	Uranium	µg/L	0.2103 U		0.2705	
	Uranium-233/234	pCi/L	-0.055 U		0.1094 U	
	Uranium-235	pCi/L	-0.022 U		0 U	
	Uranium-236	pCi/L	0.0201 U		-0.0202 U	
	Uranium-238	pCi/L	0.0741 U		0.091	
X231B-16G	Americium-241	pCi/L	0.0787 U		0.03756 U	
	Neptunium-237	pCi/L	-0.199 U		-0.05486 U	
	Plutonium-238	pCi/L	0.0720 U		0.01824 U	
	Plutonium-239/240	pCi/L	-0.054 U		0.01823 U	
	Technetium-99	pCi/L	-1.61 U		4.33 U	
	Uranium	µg/L	0.34 U		0.05327 U	
	Uranium-233/234	pCi/L	0.0187 U		0.08062 U	
	Uranium-235	pCi/L	0.0231 U		-0.02486 U	
	Uranium-236	pCi/L	0.0207 U		0 U	
	Uranium-238	pCi/L	0.1105 U		0.02176 U	
X231B-20G	Americium-241	pCi/L	0.0512 U		-0.02846 U	
	Neptunium-237	pCi/L	-0.075 U		-0.02011 U	
	Plutonium-238	pCi/L	0.0372 U		0.06018 U	
	Plutonium-239/240	pCi/L	0.0186 U		0 U	
	Technetium-99	pCi/L	-0.953 U		13.6	
	Uranium	µg/L	0.5046 U		-0.01624 U	
	Uranium-233/234	pCi/L	0.1726 U		-0.3732 U	
	Uranium-235	pCi/L	-0.030 U		-0.05415 U	
	Uranium-236	pCi/L	3E-06 U		-0.1216 U	
	Uranium-238	pCi/L	0.1743 U		0.003618 U	
X231B-23G	Americium-241	pCi/L	0.1881 U		0.064 U	
	Neptunium-237	pCi/L	0.082 U		-0.01786 U	
	Plutonium-238	pCi/L	0.0409 U		0.05343 U	
	Plutonium-239/240	pCi/L	0 U		0.03562 U	
	Technetium-99	pCi/L	3.73 U		1.79 U	
	Uranium	µg/L	0.1096 U		0.167 U	
	Uranium-233/234	pCi/L	0 U		0.1122 U	
	Uranium-235	pCi/L	0 U		0 U	
	Uranium-236	pCi/L	-0.041 U		0.02071 U	
	Uranium-238	pCi/L	0.0370 U		0.05599 U	
X231B-24B	Americium-241	pCi/L			-0.04047 U	
	Neptunium-237	pCi/L			-0.1112 U	

Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X231B-24B	Plutonium-238	pCi/L			0.04436 U	
	Plutonium-239/240	pCi/L			0 U	
	Technetium-99	pCi/L			0.757 U	
	Uranium	µg/L			0.2872 U	
	Uranium-233/234	pCi/L			0.271 U	
	Uranium-235	pCi/L			0 U	
	Uranium-236	pCi/L			-0.02144 U	
	Uranium-238	pCi/L			0.0966 U	
X231B-27G	Americium-241	pCi/L	0.1382 U		-0.05777 U	
	Neptunium-237	pCi/L	0.0197 U		0.06333 U	
	Plutonium-238	pCi/L	0.0787 U		-0.02105 U	
	Plutonium-239/240	pCi/L	0.0197 U		0 U	
	Technetium-99	pCi/L	0.187 U		-0.155 U	
	Uranium	µg/L	0.2195 U		0.1245 U	
	Uranium-233/234	pCi/L	0.2143 U		0.07505 U	
	Uranium-235	pCi/L	0.1058 U		-0.09259 U	
	Uranium-236	pCi/L	0.0237 U		0.02771 U	
	Uranium-238	pCi/L	0.0572 U		0.05607 U	
X231B-28G	Americium-241	pCi/L	0.2352 U		0.157 U	
	Neptunium-237	pCi/L	-0.054 U		-0.05943 U	
	Plutonium-238	pCi/L	0.1074 U		0.05927 U	
	Plutonium-239/240	pCi/L	0.0179 U		0.01975 U	
	Technetium-99	pCi/L	0.215 U		4.09 U	
	Uranium	µg/L	0.2671 U		0.3432	
	Uranium-233/234	pCi/L	0.3291 U		0.06598 U	
	Uranium-235	pCi/L	0.0427 U		0 U	
	Uranium-236	pCi/L	-0.096 U		0.01827 U	
	Uranium-238	pCi/L	0.0836 U		0.1152	
X231B-32B	Americium-241	pCi/L			0.06887 U	
	Neptunium-237	pCi/L			-0.01799 U	
	Plutonium-238	pCi/L			0.05384 U	
	Plutonium-239/240	pCi/L			-0.07178 U	
	Technetium-99	pCi/L			-3.42 U	
	Uranium	µg/L			0.3568	
	Uranium-233/234	pCi/L			0.3146 U	
	Uranium-235	pCi/L			0.02425 U	
	Uranium-236	pCi/L			0 U	
	Uranium-238	pCi/L			0.1161	

Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X231B-33B	Americium-241	pCi/L			0.06297 U	
	Neptunium-237	pCi/L			-0.01768 U	
	Plutonium-238	pCi/L			0.03527 U	
	Plutonium-239/240	pCi/L			0 U	
	Technetium-99	pCi/L			-2.31 U	
	Uranium	µg/L			0.0007458 U	
	Uranium-233/234	pCi/L			0.2072 U	
	Uranium-235	pCi/L			0 U	
	Uranium-236	pCi/L			0.0459 U	
	Uranium-238	pCi/L			0 U	
X231B-34B	Americium-241	pCi/L			0.1127 U	
	Neptunium-237	pCi/L			-0.03922 U	
	Plutonium-238	pCi/L			0.03911 U	
	Plutonium-239/240	pCi/L			0 U	
	Technetium-99	pCi/L			-1.4 U	
	Uranium	µg/L			0.1037 U	
	Uranium-233/234	pCi/L			0.367 U	
	Uranium-235	pCi/L			-0.02264 U	
	Uranium-236	pCi/L			0.04065 U	
	Uranium-238	pCi/L			0.03813 U	
X231B-37G	Americium-241	pCi/L	0.0253 U		0.04701 U	
	Neptunium-237	pCi/L	-0.158 U		0.03492 U	
	Plutonium-238	pCi/L	0.0198 U		0.05224 U	
	Plutonium-239/240	pCi/L	0.0592 U		-0.01741 U	
	Technetium-99	pCi/L	6.1 U		-0.128 U	
	Uranium	µg/L	0.6354		0.5453 U	
	Uranium-233/234	pCi/L	0.278		0.1113 U	
	Uranium-235	pCi/L	0 U		-0.02287 U	
	Uranium-236	pCi/L	0.0237 U		0.04109 U	
	Uranium-238	pCi/L	0.2134		0.1866	
X326-09G	Americium-241	pCi/L	0.0781 U		5.253E-06 U	
	Neptunium-237	pCi/L	-0.024 U		-0.08115 U	
	Plutonium-238	pCi/L	-0.047 U		0.0607 U	
	Plutonium-239/240	pCi/L	0.0473 U		0 U	
	Technetium-99	pCi/L	5.12 U		-0.195 U	
	Uranium	ug/L	0.2748 U		-0.01286 U	
	Uranium-233/234	pCi/L	0.2597 U		0.2353 U	
	Uranium-235	pCi/L	0 U		-0.0484 U	

Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X326-09G	Uranium-236	pCi/L	-0.041 U		-3.61E-06 U	
	Uranium-238	pCi/L	0.0926 U		0.003192 U	
X326-10G	Americium-241	pCi/L	0.2681 U		-0.01715 U	
	Neptunium-237	pCi/L	0 MU		0.03988 U	
	Plutonium-238	pCi/L	0.0616 U		0 U	
	Plutonium-239/240	pCi/L	-0.021 MU		0 U	
	Technetium-99	pCi/L	-0.063 U		4.21 U	
	Uranium	ug/L	1.548		2.573 U	
	Uranium-233/234	pCi/L	0.5575		0.7845	
	Uranium-235	pCi/L	0 U		0.02419 U	
	Uranium-236	pCi/L	-0.04 U		0.2172	
	Uranium-238	pCi/L	0.5204		0.8596 U	
X626-07G	Americium-241	pCi/L	-0.019 U		0.02602 U	
	Neptunium-237	pCi/L	-0.037 U		0.0595 MU	
	Plutonium-238	pCi/L	0.037 U		0.01978 U	
	Plutonium-239/240	pCi/L	0.0185 U		-0.01977 U	
	Technetium-99	pCi/L	16.8		16.8	
	Uranium	µg/L	0.479 U		0.1419 U	
	Uranium-233/234	pCi/L	0.2903 B		0.1355 U	
	Uranium-235	pCi/L	-0.022 U		0.02785 U	
	Uranium-236	pCi/L	0 U		0.02501 U	
	Uranium-238	pCi/L	0.1644 U		0.04322 U	
X749A-01G	Americium-241	pCi/L		0.09346 U		0.02647 U
	Neptunium-237	pCi/L		-0.0153 U		-0.1579 U
	Plutonium-238	pCi/L		0.06948 U		0.000158 U
	Plutonium-239/240	pCi/L		-0.0339 U		0.03946 U
	Technetium-99	pCi/L		8.26 U		-1.85 U
	Uranium	µg/L		0.4041		0.3224 U
	Uranium-233/234	pCi/L		0.1322 U		-0.02197 U
	Uranium-235	pCi/L		0.04078 U		-0.02733 U
	Uranium-236	pCi/L		0.03661 U		0.02456 U
	Uranium-238	pCi/L		0.1293		0.1107 U
X749A-02G	Americium-241	pCi/L		0 U		-0.05644 U
	Neptunium-237	pCi/L		-2E-06 U		-0.07165 U
	Plutonium-238	pCi/L		0.07237 U		0.05366 U
	Plutonium-239/240	pCi/L		-0.0181 U		0.05367 U
	Technetium-99	pCi/L		7.12 U		4.38 U
	Uranium	µg/L		0.2034 U		0.1681 U

Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749A-02G	Uranium-233/234	pCi/L		0.2157 U		0.1819 U
	Uranium-235	pCi/L		0.02047 U		0.02243 U
	Uranium-236	pCi/L		0.05513 U		0 U
	Uranium-238	pCi/L		0.06487 U		0.05446 U
X749A-03G	Americium-241	pCi/L		0.02351 U		-0.03673 U
	Neptunium-237	pCi/L		-0.1239 U		-0.0708 U
	Plutonium-238	pCi/L		0.07058 U		0.07071 U
	Plutonium-239/240	pCi/L		0.07058 U		-0.01761 U
	Technetium-99	pCi/L		9.39 U		-1.53 U
	Uranium	µg/L		0.8658		0.2482 U
	Uranium-233/234	pCi/L		0.1759 U		0.08381 U
	Uranium-235	pCi/L		0.03945 U		2.58E-05 U
	Uranium-236	pCi/L		0.03542 U		-0.02313 U
	Uranium-238	pCi/L		0.2846		0.08352 U
X749A-04G	Americium-241	pCi/L		0.06542 U		0.05097 U
	Neptunium-237	pCi/L		-0.0402 U		0.09316 U
	Plutonium-238	pCi/L		-3E-06 U		0.07429 U
	Plutonium-239/240	pCi/L		-0.0201 U		0.03716 U
	Technetium-99	pCi/L		8.39 U		0.0443 U
	Uranium	µg/L		0.1608 U		0.1273 U
	Uranium-233/234	pCi/L		0.1083 U		-0.06355 U
	Uranium-235	pCi/L		0 U		0 U
	Uranium-236	pCi/L		0 U		0.04712 U
	Uranium-238	pCi/L		0.05404 U		0.04252 U
X749A-05G	Americium-241	pCi/L		0.02865 U		-0.1948 U
	Neptunium-237	pCi/L		-0.204 U		-0.07531 U
	Plutonium-238	pCi/L		-0.074 U		0 U
	Plutonium-239/240	pCi/L		0.05548 U		0.05018 U
	Technetium-99	pCi/L		11.6		3.03 U
	Uranium	µg/L		0.05082 U		-0.05778 U
	Uranium-233/234	pCi/L		0.07691 U		9.68E-05 U
	Uranium-235	pCi/L		-0.0237 U		0 U
	Uranium-236	pCi/L		0 U		-0.02143 U
	Uranium-238	pCi/L		0.02076 U		-0.01931 U
X749A-07G	Americium-241	pCi/L		0.06579 U		-0.1381 U
	Neptunium-237	pCi/L		-0.0172 U		-0.06157 U
	Plutonium-238	pCi/L		0.03432 U		0.08201 U
	Plutonium-239/240	pCi/L		-0.0172 U		-0.04096 U

Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749A-07G	Technetium-99	pCi/L		9.2 U		2.7 U
	Uranium	µg/L		17.56		8.624
	Uranium-233/234	pCi/L		6.93		3.106
	Uranium-235	pCi/L		0.2484		0.09462 U
	Uranium-236	pCi/L		0.01859 U		0.04247 U
	Uranium-238	pCi/L		5.861		2.889
X749A-12G	Americium-241	pCi/L		0.04386 U		0.03638 U
	Neptunium-237	pCi/L		0.06861 U		-0.08842 U
	Plutonium-238	pCi/L		0.1368 U		0.07067 U
	Plutonium-239/240	pCi/L		-0.0228 U		-0.05295 U
	Technetium-99	pCi/L		6.92 U		-3.48 U
	Uranium	µg/L		0.26 U		0.006825 U
	Uranium-233/234	pCi/L		0.1024 U		0.000102 U
	Uranium-235	pCi/L		0.02106 U		0.02525 U
	Uranium-236	pCi/L		0.05673 U		0 U
	Uranium-238	pCi/L		0.08379 U		4.08E-05 U
X749A-13GA	Americium-241	pCi/L		0.0223 U		0.0206 U
	Neptunium-237	pCi/L		0.08817 U		0.02263 U
	Plutonium-238	pCi/L		0.05276 U		0.06756 U
	Plutonium-239/240	pCi/L		4.7E-06 U		0 U
	Technetium-99	pCi/L		2.75 U		1.97 U
	Uranium	µg/L		3.009		1.703
	Uranium-233/234	pCi/L		1.297		0.9487
	Uranium-235	pCi/L		0.09017 U		0 U
	Uranium-236	pCi/L		0.02024 U		-0.02441 U
	Uranium-238	pCi/L		0.997		0.5725
X749A-14G	Americium-241	pCi/L		0.05377 U		-0.05941 U
	Neptunium-237	pCi/L		-0.0666 U		-0.08846 U
	Plutonium-238	pCi/L		0.01659 U		0.07069 U
	Plutonium-239/240	pCi/L		-2E-06 U		0.03533 U
	Technetium-99	pCi/L		4.17 U		-1.41 U
	Uranium	µg/L		0.00545 U		0.11 U
	Uranium-233/234	pCi/L		0.1983		0.03934 U
	Uranium-235	pCi/L		0.02039 U		-0.02415 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		-0.0014 U		0.03912 U
X749A-16G	Americium-241	pCi/L		-0.0275 U		0.02389 U
	Neptunium-237	pCi/L		-0.0516 U		-0.1317 U

Table 4.4. Results for radionuclides at the Quadrant I Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X749A-16G	Plutonium-238	pCi/L		0.01716 U		0.1754 U
	Plutonium-239/240	pCi/L		-0.0515 U		0.08769 U
	Technetium-99	pCi/L		3.69 U		12.3 U
	Uranium	µg/L		0.2401 U		0.1288 U
	Uranium-233/234	pCi/L		0.1616 U		0.02179 U
	Uranium-235	pCi/L		0 U		2.67E-05 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0.08066 U		0.04327 U
X770-MW17G	Americium-241	pCi/L	0.0235 U		0.01006 U	
	Neptunium-237	pCi/L	-0.074 U		0.08741 U	
	Plutonium-238	pCi/L	0.0245 U		0.03487 U	
	Plutonium-239/240	pCi/L	0 U		-0.01743 U	
	Technetium-99	pCi/L	1.58 U		7.31 U	
	Uranium	ug/L	1.308		1.485	
	Uranium-233/234	pCi/L	0.2832		0.5404	
	Uranium-235	pCi/L	0.0538 U		0.07842 U	
	Uranium-236	pCi/L	0 U		0.05281 U	
	Uranium-238	pCi/L	0.4313		0.4865	

Table 4.5. Volatile organic compounds detected at the Quadrant II Groundwater Investigative Area

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X700-02G	1,1,1-Trichloroethane	µg/L			19	
	1,1,2-Trichloroethane	µg/L			4	
	1,1-Dichloroethane	µg/L			14	
	1,1-Dichloroethene	µg/L			95	
	1,2-Dichloroethane	µg/L			11	
	Chloroform	µg/L			3	
	cis-1,2-Dichloroethene	µg/L			75	
	Trichloroethene	µg/L			7200	
X701-68G	cis-1,2-Dichloroethene	µg/L			4	
	Trichloroethene	µg/L			200	
X701-69G	cis-1,2-Dichloroethene	µg/L			310	
	Trichloroethene	µg/L			2000	
X701-70G	Trichloroethene	µg/L			460	
X701-117GA	Trichloroethene	µg/L			120	
X705-01GA	Trichloroethene	µg/L			160	
X705-07G	Trichloroethene	µg/L			26	
X720-01G	1,1,1-Trichloroethane	µg/L			880	
	1,1-Dichloroethene	µg/L			680	
	Trichloroethene	µg/L			73000	
X720-08G	Trichloroethene	µg/L			1800	

Table 4.6. Results for radionuclides at the Quadrant II Groundwater Investigative Area

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X700-02G	Americium-241	pCi/L			3.787E-06 U	
	Neptunium-237	pCi/L			-0.05463 U	
	Plutonium-238	pCi/L			0.03632 U	
	Plutonium-239/240	pCi/L			0 U	
	Technetium-99	pCi/L			94.5	
	Uranium	µg/L			0.4189 U	
	Uranium-233/234	pCi/L			0.3827	
	Uranium-235	pCi/L			0 U	
	Uranium-236	pCi/L			0 U	
	Uranium-238	pCi/L			0.1407 U	
X701-45G	Americium-241	pCi/L			0.04089 U	
	Neptunium-237	pCi/L			0.05953 U	
	Plutonium-238	pCi/L			0.03958 U	
	Plutonium-239/240	pCi/L			0.01979 U	
	Technetium-99	pCi/L			12.8	
	Uranium	µg/L			0.3369 U	
	Uranium-233/234	pCi/L			0.02269 U	
	Uranium-235	pCi/L			0 U	
	Uranium-236	pCi/L			0 U	
	Uranium-238	pCi/L			0.1132 U	
X701-68G	Americium-241	pCi/L			0 U	
	Neptunium-237	pCi/L			-0.08828 U	
	Plutonium-238	pCi/L			0 U	
	Plutonium-239/240	pCi/L			-0.01761 U	
	Technetium-99	pCi/L			16.5	
	Uranium	µg/L			1.182	
	Uranium-233/234	pCi/L			0.4333	
	Uranium-235	pCi/L			0.04859 U	
	Uranium-236	pCi/L			-0.02181 U	
	Uranium-238	pCi/L			0.3899	
X701-69G	Americium-241	pCi/L			0.09574 U	
	Neptunium-237	pCi/L			-0.03806 U	
	Plutonium-238	pCi/L			0.01898 U	
	Plutonium-239/240	pCi/L			-0.01898 U	
	Technetium-99	pCi/L			-2.49 U	
	Uranium	µg/L			7.303	
	Uranium-233/234	pCi/L			2.838	
	Uranium-235	pCi/L			0.1269	

Table 4.6. Results for radionuclides at the Quadrant II Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-69G	Uranium-236	pCi/L			-0.02278 U	
	Uranium-238	pCi/L			2.434	
X701-70G	Americium-241	pCi/L			0.09346 U	
	Neptunium-237	pCi/L			-0.1626 U	
	Plutonium-238	pCi/L			0.03604 U	
	Plutonium-239/240	pCi/L			0.01802 U	
	Technetium-99	pCi/L			45.3	
	Uranium	µg/L			1.052	
	Uranium-233/234	pCi/L			0.7182	
	Uranium-235	pCi/L			0.04544 U	
	Uranium-236	pCi/L			0.0204 U	
	Uranium-238	pCi/L			0.3462	
X701-117GA	Americium-241	pCi/L			0.04089 U	
	Neptunium-237	pCi/L			0.05903 U	
	Plutonium-238	pCi/L			0.07848 U	
	Plutonium-239/240	pCi/L			0.03924 U	
	Technetium-99	pCi/L			23.4	
	Uranium	µg/L			3.68	
	Uranium-233/234	pCi/L			1.396	
	Uranium-235	pCi/L			0.04993 U	
	Uranium-236	pCi/L			0.02242 U	
	Uranium-238	pCi/L			1.229	
X705-01GA	Americium-241	pCi/L			0 U	
	Neptunium-237	pCi/L			-0.03305 U	
	Plutonium-238	pCi/L			0.06592 U	
	Plutonium-239/240	pCi/L			0 U	
	Technetium-99	pCi/L			5190	
	Uranium	µg/L			0.6119	
	Uranium-233/234	pCi/L			0.5566	
	Uranium-235	pCi/L			0 U	
	Uranium-236	pCi/L			-0.02283 U	
	Uranium-238	pCi/L			0.2057	
X705-07G	Americium-241	pCi/L			0.0583 U	
	Neptunium-237	pCi/L			-0.0494 U	
	Plutonium-238	pCi/L			0.01642 U	
	Plutonium-239/240	pCi/L			0.03284 U	
	Technetium-99	pCi/L			376	
	Uranium	µg/L			2.298	

Table 4.6. Results for radionuclides at the Quadrant II Groundwater Investigative Area (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X705-07G	Uranium-233/234	pCi/L			0.899	
	Uranium-235	pCi/L			0 U	
	Uranium-236	pCi/L			0 U	
	Uranium-238	pCi/L			0.772	
X720-01G	Americium-241	pCi/L			0 U	
	Neptunium-237	pCi/L			-0.1063 U	
	Plutonium-238	pCi/L			0.05302 U	
	Plutonium-239/240	pCi/L			-0.01767 U	
	Technetium-99	pCi/L			20.8	
	Uranium	µg/L			15.49	
	Uranium-233/234	pCi/L			5.245	
	Uranium-235	pCi/L			0.2941	
	Uranium-236	pCi/L			0.02031 U	
	Uranium-238	pCi/L			5.16	
X720-08G	Americium-241	pCi/L			0.01915 U	
	Neptunium-237	pCi/L			-0.05966 U	
	Plutonium-238	pCi/L			0.7728 U	
	Plutonium-239/240	pCi/L			-2.38E-05 U	
	Technetium-99	pCi/L			130	
	Uranium	µg/L			4.356	
	Uranium-233/234	pCi/L			1.903	
	Uranium-235	pCi/L			0.04942 U	
	Uranium-236	pCi/L			-0.02219 U	
	Uranium-238	pCi/L			1.459	

Table 4.7. Volatile organic compounds detected at the X-701B Holding Pond

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
LBC-PZ03	cis-1,2-Dichloroethene	µg/L	32		190	
	Trichloroethene	µg/L	89		220	
X230J7-01GA	Trichloroethene	µg/L	120			
X230J7-02GA	Trichloroethene	µg/L	1300			
X230J7-03GA	cis-1,2-Dichloroethene	µg/L	360			
	Trichloroethene	µg/L	3000			
X701-01G	cis-1,2-Dichloroethene	µg/L	2 U		5	
	Trichloroethene	µg/L	12		27	
X701-02G	cis-1,2-Dichloroethene	µg/L	5		5	
	Trichloroethene	µg/L	7		8	
X701-05G	Trichloroethene	µg/L	12		51	
X701-06G	cis-1,2-Dichloroethene	µg/L	24		25	
	Trichloroethene	µg/L	92		120	
X701-08G	Trichloroethene	µg/L			270000	
X701-09G	Trichloroethene	µg/L	490000			
X701-10G	Trichloroethene	µg/L	1300		1300	
X701-12G	cis-1,2-Dichloroethene	µg/L	45		89	
	Trichloroethene	µg/L	52		97	
	Vinyl chloride	µg/L	6		2	
X701-13G	Trichloroethene	µg/L	7300		10000	
X701-14G	Trichloroethene	µg/L	62000			
X701-15G	cis-1,2-Dichloroethene	µg/L	2 U		6	
	Trichloroethene	µg/L	2		7	
X701-20G	Trichloroethene	µg/L	140000			
X701-21G	Trichloroethene	µg/L	50		48	
X701-24G	Trichloroethene	µg/L	6400		18000	
X701-30G	Trichloroethene	µg/L	18		28	
X701-61B	M + P Xylene	µg/L			4	
X701-BW2G	1,1-Dichloroethene	ug/L	5			
	cis-1,2-Dichloroethene	ug/L	55			
	trans-1,2-Dichloroethene	ug/L	10			
	Trichloroethene	ug/L	1100			
X744G-02G	Trichloroethene	µg/L	29		31	

Table 4.8. Results for radionuclides at the X-701B Holding Pond

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
LBC-PZ03	Americium-241	pCi/L	0.2574 U		0.03489 U	
	Neptunium-237	pCi/L	0 U		-0.07631 U	
	Plutonium-238	pCi/L	0.1306		-0.01895 U	
	Plutonium-239/240	pCi/L	-0.026 U		1.901E-05 U	
	Technetium-99	pCi/L	-0.267 U		-3.65 U	
	Uranium	µg/L	0.0704 U		0.0606 U	
	Uranium-233/234	pCi/L	0.1493 U		0.03328 U	
	Uranium-235	pCi/L	0.0263 U		0.04105 U	
	Uranium-236	pCi/L	0 U		0.01843 U	
	Uranium-238	pCi/L	0.0195 U		0.01388 U	
LBC-PZ06	Americium-241	pCi/L	0.2328 U		0.1227 U	
	Neptunium-237	pCi/L	-0.19 U		-0.06769 U	
	Plutonium-238	pCi/L	0.0710 U		0 U	
	Plutonium-239/240	pCi/L	0 U		0.01688 U	
	Technetium-99	pCi/L	5.33 U		-3.55 U	
	Uranium	µg/L	0.2519 U		1.147	
	Uranium-233/234	pCi/L	0.0635 U		0.5063	
	Uranium-235	pCi/L	0 U		0.02154 U	
	Uranium-236	pCi/L	0.0235 U		0.01934 U	
	Uranium-238	pCi/L	0.0845 U		0.3819	
X230J7-01GA	Americium-241	pCi/L	0.0497 U			
	Neptunium-237	pCi/L	-0.029 U			
	Plutonium-238	pCi/L	0 U			
	Plutonium-239/240	pCi/L	0 U			
	Technetium-99	pCi/L	-0.089 U			
	Uranium	µg/L	0.5487			
	Uranium-233/234	pCi/L	0.0672 U			
	Uranium-235	pCi/L	0 U			
	Uranium-236	pCi/L	0 U			
	Uranium-238	pCi/L	0.1844			
X230J7-02GA	Americium-241	pCi/L	0.1454 U			
	Neptunium-237	pCi/L	-0.048 U			
	Plutonium-238	pCi/L	0.0964 U			
	Plutonium-239/240	pCi/L	-0.072 U			
	Technetium-99	pCi/L	18			
	Uranium	µg/L	0.1137 U			
	Uranium-233/234	pCi/L	0.0544 U			
	Uranium-235	pCi/L	0.0224 U			

Table 4.8. Results for radionuclides at the X-701B Holding Pond (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X230J7-02GA	Uranium-236	pCi/L	0 U			
	Uranium-238	pCi/L	0.0347 U			
X230J7-03GA	Americium-241	pCi/L	0.1087 U			
	Neptunium-237	pCi/L	-0.025 U			
	Plutonium-238	pCi/L	0.0248 U			
	Plutonium-239/240	pCi/L	0 U			
	Technetium-99	pCi/L	9.52			
	Uranium	µg/L	0.2576 U			
	Uranium-233/234	pCi/L	-0.034 U			
	Uranium-235	pCi/L	0.0209 U			
	Uranium-236	pCi/L	0 U			
	Uranium-238	pCi/L	0.0833 U			
X230J7-04GA	Americium-241	pCi/L			-0.144 U	
	Neptunium-237	pCi/L			-0.3303 U	
	Plutonium-238	pCi/L			0.01647 U	
	Plutonium-239/240	pCi/L			-0.0494 U	
	Technetium-99	pCi/L			-1.22 U	
	Uranium	µg/L			0.1096 U	
	Uranium-233/234	pCi/L			-0.1168 U	
	Uranium-235	pCi/L			-0.02402 U	
	Uranium-236	pCi/L			0.02157 U	
	Uranium-238	pCi/L			0.04046 U	
X701-02G	Americium-241	pCi/L	0.0371 MU		-0.01963 U	
	Neptunium-237	pCi/L	-0.105 U		-0.1114 U	
	Plutonium-238	pCi/L	0.021 U		-0.01852 U	
	Plutonium-239/240	pCi/L	0 U		0 U	
	Technetium-99	pCi/L	-0.9 U		3.51 U	
	Uranium	µg/L	0.9178		0.1421 U	
	Uranium-233/234	pCi/L	0.6073		0.1597	
	Uranium-235	pCi/L	-0.045 U		0 U	
	Uranium-236	pCi/L	0.0408 U		-0.01769 U	
	Uranium-238	pCi/L	0.3152		0.04783 U	
X701-05G	Americium-241	pCi/L	0.1497 U		0.1189 U	
	Neptunium-237	pCi/L	0.2651 U		-0.01661 U	
	Plutonium-238	pCi/L	-4E-07 U		9.122E-06 U	
	Plutonium-239/240	pCi/L	0.0529 U		0.03316 U	
	Technetium-99	pCi/L	787		61.8	
	Uranium	µg/L	82		21.89	

Table 4.8. Results for radionuclides at the X-701B Holding Pond (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-05G	Uranium-233/234	pCi/L	157.6		46.08	
	Uranium-235	pCi/L	7.208		2.201	
	Uranium-236	pCi/L	1.23		0.1317 U	
	Uranium-238	pCi/L	26.42		7.01	
X701-06G	Americium-241	pCi/L	0.0527 U		0.04313 U	
	Neptunium-237	pCi/L	0.0458 U		-0.1065 U	
	Plutonium-238	pCi/L	0.0685 U		0.08497 U	
	Plutonium-239/240	pCi/L	0.0229 U		0 U	
	Technetium-99	pCi/L	26.7		27.2	
	Uranium	µg/L	0.4874		0.4134	
	Uranium-233/234	pCi/L	0.1232 U		-0.04181 U	
	Uranium-235	pCi/L	0 U		-0.07737 U	
	Uranium-236	pCi/L	-0.023 U		-0.04632 U	
	Uranium-238	pCi/L	0.1639		0.1512	
X701-08G	Americium-241	pCi/L			-0.3271 U	
	Neptunium-237	pCi/L			-0.1605 U	
	Plutonium-238	pCi/L			-0.03558 U	
	Plutonium-239/240	pCi/L			0.05336 U	
	Technetium-99	pCi/L			26.7	
	Uranium	µg/L			0.05402 U	
	Uranium-233/234	pCi/L			0.2349	
	Uranium-235	pCi/L			0 U	
	Uranium-236	pCi/L			0.02002 U	
	Uranium-238	pCi/L			0.01804 U	
X701-09G	Americium-241	pCi/L	0.1199 U			
	Neptunium-237	pCi/L	-0.035 U			
	Plutonium-238	pCi/L	0.0175 U			
	Plutonium-239/240	pCi/L	-0.017 U			
	Technetium-99	pCi/L	67.7			
	Uranium	µg/L	1.623			
	Uranium-233/234	pCi/L	1.594			
	Uranium-235	pCi/L	0.1068			
	Uranium-236	pCi/L	0 U			
	Uranium-238	pCi/L	0.5288			
X701-10G	Americium-241	pCi/L	0.0727 U		4.567E-06 U	
	Neptunium-237	pCi/L	-0.025 U		-0.09161 U	
	Plutonium-238	pCi/L	0.0740 U		1.271E-06 U	
	Plutonium-239/240	pCi/L	-0.025 U		-0.01523 U	

Table 4.8. Results for radionuclides at the X-701B Holding Pond (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-10G	Technetium-99	pCi/L	10.2		1.42 U	
	Uranium	µg/L	0.0397 U		0.06523 U	
	Uranium-233/234	pCi/L	0.0343 U		0.07912 U	
	Uranium-235	pCi/L	-0.042 U		0.0244 U	
	Uranium-236	pCi/L	0 U		0 U	
	Uranium-238	pCi/L	0.0199 U		0.01812 U	
X701-12G	Americium-241	pCi/L	0.0618 U		-0.1234 U	
	Neptunium-237	pCi/L	-0.021 U		-0.1005 U	
	Plutonium-238	pCi/L	0.0418 U		0.01671 U	
	Plutonium-239/240	pCi/L	0.0418 U		0.0334 U	
	Technetium-99	pCi/L	265		236	
	Uranium	µg/L	0.2138 U		0.0003494 U	
	Uranium-233/234	pCi/L	0.1194 U		-0.1521 U	
	Uranium-235	pCi/L	0.0421 U		0 U	
	Uranium-236	pCi/L	0 U		0.02407 U	
	Uranium-238	pCi/L	0.0653 U		0 U	
X701-13G	Americium-241	pCi/L	0.0367 U		0.08472 U	
	Neptunium-237	pCi/L	-0.17 U		-0.2311 U	
	Plutonium-238	pCi/L	0.0423 U		-0.01646 U	
	Plutonium-239/240	pCi/L	0 U		0 U	
	Technetium-99	pCi/L	195		146	
	Uranium	µg/L	0.2118 U		0.2999 U	
	Uranium-233/234	pCi/L	0.1431 U		0.03956 U	
	Uranium-235	pCi/L	0 U		0.0244 U	
	Uranium-236	pCi/L	-0.04 U		-0.02191 U	
	Uranium-238	pCi/L	0.0714 U		0.09708 U	
X701-14G	Americium-241	pCi/L	0.0513 U			
	Neptunium-237	pCi/L	-0.258 U			
	Plutonium-238	pCi/L	0 U			
	Plutonium-239/240	pCi/L	-0.043 U			
	Technetium-99	pCi/L	131			
	Uranium	µg/L	-0.057 U			
	Uranium-233/234	pCi/L	-0.138 U			
	Uranium-235	pCi/L	-0.021 U			
	Uranium-236	pCi/L	0 U			
	Uranium-238	pCi/L	-0.016 U			
X701-15G	Americium-241	pCi/L	0.1368 U		0.09938 U	
	Neptunium-237	pCi/L	-0.135 U		0.01781 U	

Table 4.8. Results for radionuclides at the X-701B Holding Pond (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-15G	Plutonium-238	pCi/L	0.0386 U		-0.08857 U	
	Plutonium-239/240	pCi/L	0 U		7.089E-06 U	
	Technetium-99	pCi/L	6.91 U		-5.67 U	
	Uranium	µg/L	0.1186 U		0.1824 U	
	Uranium-233/234	pCi/L	0.09 U		0 U	
	Uranium-235	pCi/L	0.0444 U		0.0244 U	
	Uranium-236	pCi/L	0 U		-0.02191 U	
	Uranium-238	pCi/L	0.033 U		0.0576 U	
X701-16G	Americium-241	pCi/L	0.0837 U		-0.07168 U	
	Neptunium-237	pCi/L	-0.019 U		-0.01602 U	
	Plutonium-238	pCi/L	0.0186 U		0.03194 U	
	Plutonium-239/240	pCi/L	-0.037 U		-5.2E-07 U	
	Technetium-99	pCi/L	9.22 U		1.05 U	
	Uranium	µg/L	0.1192 U		-0.000354 U	
	Uranium-233/234	pCi/L	0.1392 U		-0.09845 U	
	Uranium-235	pCi/L	0 U		0 U	
	Uranium-236	pCi/L	0.0661 U		-0.02181 U	
	Uranium-238	pCi/L	0.0397 U		0 U	
X701-19G	Americium-241	pCi/L	0.0753 U		-0.05945 U	
	Neptunium-237	pCi/L	0.0214 U		0.09827 U	
	Plutonium-238	pCi/L	0.0426 U		4.896E-06 U	
	Plutonium-239/240	pCi/L	0.0426 U		1.633E-06 U	
	Technetium-99	pCi/L	10.5 U		-1.52 U	
	Uranium	µg/L	0.2495 U		0.1663 U	
	Uranium-233/234	pCi/L	0.1678 U		-0.1804 U	
	Uranium-235	pCi/L	0 U		0.02225 U	
	Uranium-236	pCi/L	0.0232 U		-0.01998 U	
	Uranium-238	pCi/L	0.0837 U		0.05252 U	
X701-20G	Americium-241	pCi/L	0.0531 U			
	Neptunium-237	pCi/L	0.0703 U			
	Plutonium-238	pCi/L	0.0234 U			
	Plutonium-239/240	pCi/L	0 U			
	Technetium-99	pCi/L	147			
	Uranium	µg/L	0.4475			
	Uranium-233/234	pCi/L	0.3013			
	Uranium-235	pCi/L	0 U			
	Uranium-236	pCi/L	0 U			
	Uranium-238	pCi/L	0.1504			

Table 4.8. Results for radionuclides at the X-701B Holding Pond (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-21G	Americium-241	pCi/L	0.0354 U		0.03489 U	
	Neptunium-237	pCi/L	0.0394 U		-0.218 U	
	Plutonium-238	pCi/L	0.059 U		0.1383 U	
	Plutonium-239/240	pCi/L	0.0393 U		0.01976 U	
	Technetium-99	pCi/L	152		197	
	Uranium	µg/L	0.0601 U		-0.05728 U	
	Uranium-233/234	pCi/L	-0.018 U		0 U	
	Uranium-235	pCi/L	0.0226 U		0 U	
	Uranium-236	pCi/L	-0.020 U		-0.02124 U	
	Uranium-238	pCi/L	0.0168 U		-0.01914 U	
X701-23G	Americium-241	pCi/L			-0.04198 U	
	Neptunium-237	pCi/L			-0.02037 U	
	Plutonium-238	pCi/L			0.02031 U	
	Plutonium-239/240	pCi/L			-0.08124 U	
	Technetium-99	pCi/L			1.94 U	
	Uranium	µg/L			0.1613 U	
	Uranium-233/234	pCi/L			0.08148 U	
	Uranium-235	pCi/L			0 U	
	Uranium-236	pCi/L			0 U	
	Uranium-238	pCi/L			0.05421 U	
X701-24G	Americium-241	pCi/L	0.0314 U		0.01661 U	
	Neptunium-237	pCi/L	-0.044 U		-0.05851 U	
	Plutonium-238	pCi/L	0.0869 U		0.0778 U	
	Plutonium-239/240	pCi/L	0 U		0.01945 U	
	Technetium-99	pCi/L	10 U		0.51 U	
	Uranium	µg/L	-0.051 U		0.1284 U	
	Uranium-233/234	pCi/L	0.0387 U		0.1081 U	
	Uranium-235	pCi/L	0.0238 U		0 U	
	Uranium-236	pCi/L	0.0214 U		0 U	
	Uranium-238	pCi/L	-0.021 U		0.04316 U	
X701-25G	Americium-241	pCi/L	0.0422 U		0.03984 U	
	Neptunium-237	pCi/L	-0.021 U		-0.01557 U	
	Plutonium-238	pCi/L	0.0624 U		0.1087 U	
	Plutonium-239/240	pCi/L	0.0832 U		0.01553 U	
	Technetium-99	pCi/L	10.3 U		-0.39 U	
	Uranium	µg/L	0.0566 U		-0.2988 U	
	Uranium-233/234	pCi/L	-0.038 U		-0.1206 U	
	Uranium-235	pCi/L	0 U		0 U	

Table 4.8. Results for radionuclides at the X-701B Holding Pond (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-25G	Uranium-236	pCi/L	0 U		-0.02226 U	
	Uranium-238	pCi/L	0.0190 U		-0.1003 U	
X701-38G	Americium-241	pCi/L			-0.01962 U	
	Neptunium-237	pCi/L			-0.09025 U	
	Plutonium-238	pCi/L			0.045 U	
	Plutonium-239/240	pCi/L			0.0225 U	
	Technetium-99	pCi/L			5.08 U	
	Uranium	µg/L			0.2177 U	
	Uranium-233/234	pCi/L			0.1098 U	
	Uranium-235	pCi/L			0 U	
	Uranium-236	pCi/L			0.02026 U	
	Uranium-238	pCi/L			0.07303 U	
X701-48G	Americium-241	pCi/L			0.06298 U	
	Neptunium-237	pCi/L			-0.06683 U	
	Plutonium-238	pCi/L			-0.04442 U	
	Plutonium-239/240	pCi/L			-0.04443 U	
	Technetium-99	pCi/L			-4.38 U	
	Uranium	µg/L			0.3812	
	Uranium-233/234	pCi/L			0.07214 U	
	Uranium-235	pCi/L			0.02225 U	
	Uranium-236	pCi/L			0.01998 U	
	Uranium-238	pCi/L			0.1245	
X701-50B	Americium-241	pCi/L			0.03488 U	
	Neptunium-237	pCi/L			-0.03179 U	
	Plutonium-238	pCi/L			-0.01585 U	
	Plutonium-239/240	pCi/L			0.01585 U	
	Technetium-99	pCi/L			-10.6 U	
	Uranium	µg/L			-0.05853 U	
	Uranium-233/234	pCi/L			-0.06601 U	
	Uranium-235	pCi/L			0.02715 U	
	Uranium-236	pCi/L			-0.02437 U	
	Uranium-238	pCi/L			-0.02376 U	
X701-58B	Americium-241	pCi/L			-0.0505 U	
	Neptunium-237	pCi/L			0.01584 U	
	Plutonium-238	pCi/L			0.04739 U	
	Plutonium-239/240	pCi/L			0.04739 U	
	Technetium-99	pCi/L			-7.14 U	
	Uranium	µg/L			0.2008 U	

Table 4.8. Results for radionuclides at the X-701B Holding Pond (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-58B	Uranium-233/234	pCi/L			-0.03698 U	
	Uranium-235	pCi/L			-0.06843 U	
	Uranium-236	pCi/L			-0.04096 U	
	Uranium-238	pCi/L			0.07835 U	
X701-61B	Americium-241	pCi/L			9.09E-06 U	
	Neptunium-237	pCi/L			-0.2509 U	
	Plutonium-238	pCi/L			-0.01564 U	
	Plutonium-239/240	pCi/L			0.01564 U	
	Technetium-99	pCi/L			-4.4 U	
	Uranium	µg/L			0.1135 U	
	Uranium-233/234	pCi/L			-0.1005 U	
	Uranium-235	pCi/L			-0.02479 U	
	Uranium-236	pCi/L			0.04452 U	
	Uranium-238	pCi/L			0.04175 U	
X701-BW1G	Americium-241	pCi/L			0.04461 U	
	Neptunium-237	pCi/L			0 U	
	Plutonium-238	pCi/L			0.06148 U	
	Plutonium-239/240	pCi/L			0.06147 U	
	Technetium-99	pCi/L			3.73 U	
	Uranium	µg/L			0.224 U	
	Uranium-233/234	pCi/L			-0.1509 U	
	Uranium-235	pCi/L			0 U	
	Uranium-236	pCi/L			0 U	
	Uranium-238	pCi/L			0.07528 U	
X701-BW2G	Americium-241	pCi/L	0.1231 U			
	Neptunium-237	pCi/L	0.1107 U			
	Plutonium-238	pCi/L	0.0662 U			
	Plutonium-239/240	pCi/L	-0.022 U			
	Technetium-99	pCi/L	65			
	Uranium	ug/L	0.0068 U			
	Uranium-233/234	pCi/L	0.118 U			
	Uranium-235	pCi/L	0.0243 U			
	Uranium-236	pCi/L	0.0218 U			
	Uranium-238	pCi/L	-0.002 U			
X701-BW4G	Americium-241	pCi/L	0.0457 U		-0.05851 U	
	Neptunium-237	pCi/L	-0.127 U		-0.06769 U	
	Plutonium-238	pCi/L	0.1015 U		0 U	
	Plutonium-239/240	pCi/L	0.0761 U		0 U	

Table 4.8. Results for radionuclides at the X-701B Holding Pond (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X701-BW4G	Technetium-99	pCi/L	117		143	
	Uranium	µg/L	0.4496 U		4.351	
	Uranium-233/234	pCi/L	1.347		5.819	
	Uranium-235	pCi/L	0.0405 U		0.3102	
	Uranium-236	pCi/L	-0.018 U		0.03978 U	
	Uranium-238	pCi/L	0.1448		1.413	

Table 4.9. Results for chromium at the X-633 Pumphouse/Cooling Towers Area

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X633-07G	Chromium	µg/L		248		303
X633-PZ04G	Chromium	µg/L		8.8 B		19.7 B

Table 4.10. Volatile organic compounds detected at the X-616 Chromium Sludge Surface Impoundments

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X616-09G	1,1-Dichloroethene	µg/L	4			
	Trichloroethene	µg/L	2			
X616-16G	Trichloroethene	µg/L	3			
X616-20B	Trichloroethene	µg/L	10			

Table 4.11. Results for chromium at the X-616 Chromium Sludge Surface Impoundments

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X616-02G	Chromium	µg/L	5.61 B			
X616-05G	Chromium	µg/L	246			
X616-09G	Chromium	µg/L	6.11 B			
X616-10G	Chromium	µg/L				
X616-13G	Chromium	µg/L				
X616-14G	Chromium	µg/L				
X616-16G	Chromium	µg/L	5.85 B			
X616-17G	Chromium	µg/L				
X616-19B	Chromium	µg/L				
X616-20B	Chromium	µg/L	5.03 B			
X616-21G	Chromium	µg/L				
X616-22G	Chromium	µg/L				
X616-24B	Chromium	µg/L				
X616-25G	Chromium	µg/L				
X616-26G	Chromium	µg/L				
X616-28B	Chromium	µg/L	4.71 B			

Table 4.12. Results for radionuclides at the X-616 Chromium Sludge Surface Impoundments

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X616-02G	Americium-241	pCi/L	-0.018 U			
	Neptunium-237	pCi/L	-0.1 U			
	Plutonium-238	pCi/L	0.0397 U			
	Plutonium-239/240	pCi/L	0.0595 U			
	Technetium-99	pCi/L	1.83 U			
	Uranium	µg/L	3.432 U			
	Uranium-233/234	pCi/L	1.888 B			
	Uranium-235	pCi/L	-1E-06 U			
	Uranium-236	pCi/L	-0.018 U			
	Uranium-238	pCi/L	1.153 U			
X616-05G	Americium-241	pCi/L	0.0977 U			
	Neptunium-237	pCi/L	-0.066 U			
	Plutonium-238	pCi/L	0.0219 U			
	Plutonium-239/240	pCi/L	0.0437 U			
	Technetium-99	pCi/L	1.98 U			
	Uranium	µg/L	1.13			
	Uranium-233/234	pCi/L	1.584			
	Uranium-235	pCi/L	0.0372 U			
	Uranium-236	pCi/L	-6E-07 U			
	Uranium-238	pCi/L	0.3739			
X616-09G	Americium-241	pCi/L	0.1377 U			
	Neptunium-237	pCi/L	-0.019 U			
	Plutonium-238	pCi/L	0.0554 U			
	Plutonium-239/240	pCi/L	0 U			
	Technetium-99	pCi/L	1.98 U			
	Uranium	µg/L	1.175			
	Uranium-233/234	pCi/L	0.5545			
	Uranium-235	pCi/L	0.0221 U			
	Uranium-236	pCi/L	0.0198 U			
	Uranium-238	pCi/L	0.3913			
X616-16G	Americium-241	pCi/L	0.102 U			
	Neptunium-237	pCi/L	-0.021 U			
	Plutonium-238	pCi/L	0.0427 U			
	Plutonium-239/240	pCi/L	-0.021 U			
	Technetium-99	pCi/L	5.26 U			
	Uranium	µg/L	0.9578			
	Uranium-233/234	pCi/L	0.2167 U			
	Uranium-235	pCi/L	0.0617 U			

Table 4.12. Results for radionuclides at the X-616 Chromium Sludge Surface Impoundments (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X616-16G	Uranium-236	pCi/L	0.0369 U			
	Uranium-238	pCi/L	0.3121			
X616-20B	Americium-241	pCi/L	0.0187 U			
	Neptunium-237	pCi/L	-0.102 U			
	Plutonium-238	pCi/L	0.0815 U			
	Plutonium-239/240	pCi/L	0 U			
	Technetium-99	pCi/L	1.95 U			
	Uranium	µg/L	1.134			
	Uranium-233/234	pCi/L	1.49			
	Uranium-235	pCi/L	0.1044			
	Uranium-236	pCi/L	0.0188 U			
	Uranium-238	pCi/L	0.3648			
X616-28B	Americium-241	pCi/L	0.124 U			
	Neptunium-237	pCi/L	-0.042 U			
	Plutonium-238	pCi/L	0.0834 U			
	Plutonium-239/240	pCi/L	0.0417 U			
	Technetium-99	pCi/L	2.36 U			
	Uranium	µg/L	1.308			
	Uranium-233/234	pCi/L	1.191 B			
	Uranium-235	pCi/L	0 U			
	Uranium-236	pCi/L	0.0812 U			
	Uranium-238	pCi/L	0.4391			

Table 4.13. Volatile organic compounds detected at the X-740 Waste Oil Handling Facility

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X740-03G	1,1,1-Trichloroethane	µg/L		100 U		160
	1,1-Dichloroethene	µg/L		350		770
	1,2-Dichloroethane	µg/L		100 U		150
	Trichloroethene	µg/L		1900		3800
X740-04G	1,1,1-Trichloroethane	µg/L		4		
	1,1-Dichloroethene	µg/L		6		
	Trichloroethene	µg/L		30		
X740-08G	1,1-Dichloroethane	µg/L		8		
	cis-1,2-Dichloroethene	µg/L		34		
	trans-1,2-Dichloroethene	µg/L		15		
	Trichloroethene	µg/L		25		
X740-09B	1,1,1-Trichloroethane	µg/L		160		100 U
	1,1-Dichloroethane	µg/L		25		100 U
	1,1-Dichloroethene	µg/L		830		280
	1,2-Dichloroethane	µg/L		170		100 U
	Chloroform	µg/L		17		100 U
	Tetrachloroethene	µg/L		100 J		100 U
	Trichloroethene	µg/L		3800		1400
X740-10G	1,1,1-Trichloroethane	µg/L		20 U		27
	1,1-Dichloroethene	µg/L		40		140
	1,2-Dichloroethane	µg/L		20 U		30
	Trichloroethene	µg/L		150		570
X740-11G	1,1-Dichloroethene	µg/L		8		9
	1,2-Dichloroethane	µg/L		2		3
	Trichloroethene	µg/L		19		20
X740-PZ10G	1,1,1-Trichloroethane	µg/L		3		5
	1,1-Dichloroethene	µg/L		9		12
	1,2-Dichloroethane	µg/L		2		3
	Trichloroethene	µg/L		52		73
X740-PZ12G	1,1-Dichloroethene	µg/L		50		51
	Trichloroethene	µg/L		200		200
X740-PZ14G	1,1,1-Trichloroethane	µg/L		3		4
	1,1-Dichloroethene	µg/L		21		26
	1,2-Dichloroethane	µg/L		5		6
	Trichloroethene	µg/L		65		80
X740-PZ17G	1,1,1-Trichloroethane	µg/L		4		4
	1,1-Dichloroethene	µg/L		22		23
	1,2-Dichloroethane	µg/L		6		6

Table 4.13. Volatile organic compounds detected at the X-740 Waste Oil Handling Facility (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X740-PZ17G	Trichloroethene	µg/L		54		56

Table 4.14. Results for radionuclides at the X-740 Waste Oil Handling Facility

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X740-03G	Americium-241	pCi/L		0.157 U		0.07285 U
	Neptunium-237	pCi/L		-0.1057 U		0.01746 U
	Plutonium-238	pCi/L		-0.0422 U		0.03477 U
	Plutonium-239/240	pCi/L		0.04216 U		0.01738 U
	Technetium-99	pCi/L		11.6 U		-0.698 U
	Uranium	µg/L		4.309		2.375
	Uranium-233/234	pCi/L		2.249		1.248
	Uranium-235	pCi/L		0.02055 U		-0.0905 U
	Uranium-236	pCi/L		-0.0369 U		0 U
	Uranium-238	pCi/L		1.445		0.8062
X740-04G	Americium-241	pCi/L		0.02269 U		
	Neptunium-237	pCi/L		-0.0527 U		
	Plutonium-238	pCi/L		0 U		
	Plutonium-239/240	pCi/L		0.05258 U		
	Technetium-99	pCi/L		8.09 U		
	Uranium	µg/L		0.5921		
	Uranium-233/234	pCi/L		0.3402		
	Uranium-235	pCi/L		-0.0191 U		
	Uranium-236	pCi/L		0 U		
	Uranium-238	pCi/L		0.2019 B		
X740-08G	Americium-241	pCi/L		0.1577 U		
	Neptunium-237	pCi/L		0.01661 U		
	Plutonium-238	pCi/L		0.03313 U		
	Plutonium-239/240	pCi/L		0.04969 U		
	Technetium-99	pCi/L		8.94 U		
	Uranium	µg/L		3.172		
	Uranium-233/234	pCi/L		1.274		
	Uranium-235	pCi/L		0.04304 U		
	Uranium-236	pCi/L		0.01932 U		
	Uranium-238	pCi/L		1.059		
X740-09B	Americium-241	pCi/L		-0.3489 U		-0.0181 U
	Neptunium-237	pCi/L		-0.032 U		-0.03519 U
	Plutonium-238	pCi/L		0.06371 U		-0.01759 U
	Plutonium-239/240	pCi/L		-0.0159 U		-0.05287 U
	Technetium-99	pCi/L		5.42 U		0.274 U
	Uranium	µg/L		1.291		0.12 U
	Uranium-233/234	pCi/L		0.6006		0.1462 U
	Uranium-235	pCi/L		-0.0225 U		-0.1575 U

Table 4.14. Results for radionuclides at the X-740 Waste Oil Handling Facility (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X740-09B	Uranium-236	pCi/L		0 U		-0.08078 U
	Uranium-238	pCi/L		0.4374		0.05477 U
X740-10G	Americium-241	pCi/L		0.05555 U		-0.1185 U
	Neptunium-237	pCi/L		-0.0225 U		0.01813 U
	Plutonium-238	pCi/L		0.0224 U		0.01808 U
	Plutonium-239/240	pCi/L		0 U		-0.01805 U
	Technetium-99	pCi/L		1.7 U		-0.49 U
	Uranium	µg/L		2.385		1.298
	Uranium-233/234	pCi/L		1.064 R		0.6901
	Uranium-235	pCi/L		0.01621 RU		-0.02577 U
	Uranium-236	pCi/L		0.01456 RU		0.02316 U
	Uranium-238	pCi/L		0.7989 R		0.4383
X740-11G	Americium-241	pCi/L		-0.1198 U		-0.07597 U
	Neptunium-237	pCi/L		0.03497 U		0.000103 U
	Plutonium-238	pCi/L		0.03488 U		0.08244 U
	Plutonium-239/240	pCi/L		0.05231 U		-0.02051 U
	Technetium-99	pCi/L		16.9		0.581 U
	Uranium	µg/L		0.5292		0.5188 U
	Uranium-233/234	pCi/L		0.3415		0.09841 U
	Uranium-235	pCi/L		0.08425 U		-0.02421 U
	Uranium-236	pCi/L		-0.0189 U		0 U
	Uranium-238	pCi/L		0.1648		0.1765
X740-12B	Americium-241	pCi/L		-0.1463 U		0.07585 U
	Neptunium-237	pCi/L		-0.1824 U		-0.07988 U
	Plutonium-238	pCi/L		0.04043 U		-0.01993 U
	Plutonium-239/240	pCi/L		-0.0202 U		-0.01993 U
	Technetium-99	pCi/L		5.72 U		-4.34 U
	Uranium	µg/L		0.1863 U		0.1323 U
	Uranium-233/234	pCi/L		0.3576		0.1503 U
	Uranium-235	pCi/L		0.06966 U		-0.06167 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0.05174 U		0.04997 U
X740-PZ10G	Americium-241	pCi/L		0.1301 U		0.1325 U
	Neptunium-237	pCi/L		-0.129 U		-0.03155 U
	Plutonium-238	pCi/L		0.07716 U		0.04739 U
	Plutonium-239/240	pCi/L		-0.0257 U		-0.01577 U
	Technetium-99	pCi/L		6.1 U		1.57 U
	Uranium	µg/L		0.1509 U		0.2205 U

Table 4.14. Results for radionuclides at the X-740 Waste Oil Handling Facility (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X740-PZ10G	Uranium-233/234	pCi/L		0.05485 U		0.2411 U
	Uranium-235	pCi/L		-0.0451 U		4.04E-05 U
	Uranium-236	pCi/L		0 U		3.62E-05 U
	Uranium-238	pCi/L		0.05773 U		0.0741 U
X740-PZ12G	Americium-241	pCi/L		-0.019 U		-0.1006 U
	Neptunium-237	pCi/L		-0.0211 U		-0.1998 U
	Plutonium-238	pCi/L		0.02104 U		0.04988 U
	Plutonium-239/240	pCi/L		4.9E-06 U		0.02494 U
	Technetium-99	pCi/L		10.4 U		-4.21 U
	Uranium	µg/L		0.2887		0.3671 U
	Uranium-233/234	pCi/L		0.1075 RU		0.000288 U
	Uranium-235	pCi/L		0.03316 RU		0 U
	Uranium-236	pCi/L		0.02977 RU		-0.02279 U
	Uranium-238	pCi/L		0.0917 BR		0.1235 U
X740-PZ14G	Americium-241	pCi/L		0.109 U		0.05855 U
	Neptunium-237	pCi/L		-0.1359 U		-0.01955 U
	Plutonium-238	pCi/L		0.1084 U		0.0589 U
	Plutonium-239/240	pCi/L		0 U		0.03926 U
	Technetium-99	pCi/L		4.05 U		-1.14 U
	Uranium	µg/L		1.66		0.5326 U
	Uranium-233/234	pCi/L		0.7825 B		0.4036
	Uranium-235	pCi/L		0 U		-0.02479 U
	Uranium-236	pCi/L		-0.0206 U		-0.02224 U
	Uranium-238	pCi/L		0.5578		0.1813 U
X740-PZ17G	Americium-241	pCi/L		0.03887 U		-0.163 U
	Neptunium-237	pCi/L		0.234 U		0.04107 U
	Plutonium-238	pCi/L		0.05836 U		0.02032 U
	Plutonium-239/240	pCi/L		-0.0584 U		0.02032 U
	Technetium-99	pCi/L		8.72 U		-1.2 U
	Uranium	µg/L		1.258 U		0.4665 U
	Uranium-233/234	pCi/L		0.6922		0.08875 U
	Uranium-235	pCi/L		0.02083 U		0.02728 U
	Uranium-236	pCi/L		-0.0561 U		-0.04894 U
	Uranium-238	pCi/L		0.4199 U		0.1546 U

Table 4.15. Results for beryllium and chromium at the X-611A Former Lime Sludge Lagoons

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
F-07G	Beryllium	µg/L	3.53		4.46	
	Chromium	µg/L	4.59 B		7.42 B	
F-08B	Beryllium	µg/L	0.184 U		0.279 U	
	Chromium	µg/L	4.35 U		3.52 U	
X611-01B	Beryllium	µg/L	0.184 U		0.279 U	
	Chromium	µg/L	13.7 B		4.29 B	
X611-02B	Beryllium	µg/L	0.184 U		0.32 B	
	Chromium	µg/L	4.35 U		5.04 B	
X611-03G	Beryllium	µg/L	0.184 U		0.279 U	
	Chromium	µg/L	4.35 U		3.64 B	
X611-04B	Beryllium	µg/L	0.184 U		0.279 U	
	Chromium	µg/L	4.35 U		7.76 B	

Table 4.16. Results for radionuclides at the X-735 Landfills

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X735-01GA	Americium-241	pCi/L		0.03703 U		-0.0355 U
	Neptunium-237	pCi/L		-0.1143 U		-0.09529 U
	Plutonium-238	pCi/L		-0.0977 U		0.0476 U
	Plutonium-239/240	pCi/L		0 U		-0.06338 U
	Technetium-99	pCi/L		4.95 U		2.69 U
	Uranium	µg/L		0.01072 U		-0.00677 U
	Uranium-233/234	pCi/L		2.6E-05 U		-0.1058 U
	Uranium-235	pCi/L		0.03936 U		-0.02614 U
	Uranium-236	pCi/L		0.01767 U		0 U
	Uranium-238	pCi/L		-0.0026 U		6.34E-05 U
X735-02GA	Americium-241	pCi/L		0.01993 U		-0.1727 U
	Neptunium-237	pCi/L		-0.0925 U		0.0213 U
	Plutonium-238	pCi/L		0.05534 U		0.02122 U
	Plutonium-239/240	pCi/L		-1E-06 U		2.12E-05 U
	Technetium-99	pCi/L		-0.817 U		-0.85 U
	Uranium	µg/L		0.1654 U		-0.04932 U
	Uranium-233/234	pCi/L		0.01845 U		-0.07455 U
	Uranium-235	pCi/L		0 U		0.0231 U
	Uranium-236	pCi/L		0.06132 U		0 U
	Uranium-238	pCi/L		0.05525 U		-0.01863 U
X735-03GA	Americium-241	pCi/L		0.03908 U		0.1323 U
	Neptunium-237	pCi/L		-0.515 U		0.000229 U
	Plutonium-238	pCi/L		0.06044 U		0.1371 U
	Plutonium-239/240	pCi/L		0.03021 U		-0.0456 U
	Technetium-99	pCi/L		4.74 U		9.68 U
	Uranium	µg/L		0.1171 U		0.0843 U
	Uranium-233/234	pCi/L		-0.0187 U		0.2286 U
	Uranium-235	pCi/L		0.02305 U		0.0313 U
	Uranium-236	pCi/L		0 U		0.02811 U
	Uranium-238	pCi/L		0.03577 U		0.02538 U
X735-04GA	Americium-241	pCi/L		0.0512 U		0.3254
	Neptunium-237	pCi/L		-0.0722 U		-0.1143 U
	Plutonium-238	pCi/L		0.01801 U		0.03812 U
	Plutonium-239/240	pCi/L		0.01801 U		0.1143 U
	Technetium-99	pCi/L		5.6 U		4.4 U
	Uranium	µg/L		-0.0924 U		0.05996 U
	Uranium-233/234	pCi/L		-0.0351 U		0.02 U
	Uranium-235	pCi/L		0.04327 U		0 U

Table 4.16. Results for radionuclides at the X-735 Landfills (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X735-04GA	Uranium-236	pCi/L		0.01942 U		0.04421 U
	Uranium-238	pCi/L		-0.0379 U		0.01992 U
X735-05GA	Americium-241	pCi/L		0.08961 U		-0.05121 U
	Neptunium-237	pCi/L		0.1153 U		-0.3084 U
	Plutonium-238	pCi/L		0.02299 U		-0.02792 U
	Plutonium-239/240	pCi/L		0.06897 U		0.02803 U
	Technetium-99	pCi/L		10.3 U		7.15 U
	Uranium	µg/L		0.05333 U		0.298
	Uranium-233/234	pCi/L		0.1002 U		-0.08021 U
	Uranium-235	pCi/L		-0.0247 U		0 U
	Uranium-236	pCi/L		0.0222 U		-0.02223 U
	Uranium-238	pCi/L		0.02164 U		0.1003
X735-06GAA	Americium-241	pCi/L		0.05528 U		-0.02477 U
	Neptunium-237	pCi/L		0.03551 U		-0.02966 U
	Plutonium-238	pCi/L		0.1416 U		0.05946 U
	Plutonium-239/240	pCi/L		-0.0354 U		0.02976 U
	Technetium-99	pCi/L		9.05 U		4.56 U
	Uranium	µg/L		0.00035 U		0.3196 U
	Uranium-233/234	pCi/L		0.03964 U		0.000132 U
	Uranium-235	pCi/L		0 U		-0.02712 U
	Uranium-236	pCi/L		0.02195 U		0 U
	Uranium-238	pCi/L		0 U		0.1098 U
X735-13GA	Americium-241	pCi/L		0.06797 U		0.000163 U
	Neptunium-237	pCi/L		-0.3039 U		-0.1295 U
	Plutonium-238	pCi/L		0.05683 U		3.23E-05 U
	Plutonium-239/240	pCi/L		-0.0379 U		0 U
	Technetium-99	pCi/L		6.47 U		-0.0455 U
	Uranium	µg/L		-0.0573 U		0.1409 U
	Uranium-233/234	pCi/L		0.07806 U		0.02138 U
	Uranium-235	pCi/L		0 U		0.05258 U
	Uranium-236	pCi/L		0.04323 U		0.02361 U
	Uranium-238	pCi/L		-0.0195 U		0.04254 U
X735-16B	Americium-241	pCi/L		0.08044 U		-0.1072 U
	Neptunium-237	pCi/L		-0.0577 U		0.02544 U
	Plutonium-238	pCi/L		0.01919 U		0.02517 U
	Plutonium-239/240	pCi/L		-0.0192 U		7.52E-05 U
	Technetium-99	pCi/L		3 U		0.888 U
	Uranium	µg/L		-0.0050 U		0.03261 U

Table 4.16. Results for radionuclides at the X-735 Landfills (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X735-16B	Uranium-233/234	pCi/L		0.03074 U		-0.03359 U
	Uranium-235	pCi/L		-0.019 U		-0.06243 U
	Uranium-236	pCi/L		0 U		-0.07474 U
	Uranium-238	pCi/L		0.00126 U		0.01692 U
X735-17B	Americium-241	pCi/L		0.02055 U		0.000303 U
	Neptunium-237	pCi/L		-0.0591 U		-0.05958 U
	Plutonium-238	pCi/L		-0.0785 U		0.03973 U
	Plutonium-239/240	pCi/L		0.03924 U		0.01984 U
	Technetium-99	pCi/L		5.58 U		-2.21 U
	Uranium	µg/L		0.2168 U		0.1203 U
	Uranium-233/234	pCi/L		0.1211 U		0.1343 U
	Uranium-235	pCi/L		0.04267 U		0.02367 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0.06622 U		0.0383 U
X735-18B	Americium-241	pCi/L		-0.0359 U		-0.2248 U
	Neptunium-237	pCi/L		0.0242 U		-0.06792 U
	Plutonium-238	pCi/L		0.02414 U		4.52E-05 U
	Plutonium-239/240	pCi/L		0 U		-0.06775 U
	Technetium-99	pCi/L		12.5		4.3 U
	Uranium	µg/L		0.1045 U		-0.1293 U
	Uranium-233/234	pCi/L		0 U		-0.0868 U
	Uranium-235	pCi/L		-0.0231 U		0 U
	Uranium-236	pCi/L		-0.0207 U		-0.02405 U
	Uranium-238	pCi/L		0.03882 U		-0.04334 U
X735-19G	Americium-241	pCi/L		0.01973 U		0.2567 U
	Neptunium-237	pCi/L		-0.1963 U		-0.2635 U
	Plutonium-238	pCi/L		0.02799 U		0.03289 U
	Plutonium-239/240	pCi/L		-0.028 U		-0.09855 U
	Technetium-99	pCi/L		9.12 U		2.08 U
	Uranium	µg/L		-0.0114 U		-0.07473 U
	Uranium-233/234	pCi/L		0.03564 U		0.02269 U
	Uranium-235	pCi/L		-0.044 U		-0.02796 U
	Uranium-236	pCi/L		0.01974 U		0 U
	Uranium-238	pCi/L		0.00292 U		-0.02262 U
X735-20B	Americium-241	pCi/L		0.0861 U		0.02381 U
	Neptunium-237	pCi/L		-0.1087 U		-0.2415 U
	Plutonium-238	pCi/L		0.0542 U		0 U
	Plutonium-239/240	pCi/L		-0.0271 U		0.04019 U

Table 4.16. Results for radionuclides at the X-735 Landfills (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X735-20B	Technetium-99	pCi/L		8.78 U		6.5 U
	Uranium	µg/L		0.1112 U		-0.06683 U
	Uranium-233/234	pCi/L		0.142 U		-0.06663 U
	Uranium-235	pCi/L		0.02189 U		2.75E-05 U
	Uranium-236	pCi/L		0 U		-0.04932 U
	Uranium-238	pCi/L		0.03397 U		-0.0222 U
X735-21G	Americium-241	pCi/L		0 U		-0.1369 U
	Neptunium-237	pCi/L		-0.1952 U		-0.1762 U
	Plutonium-238	pCi/L		0.03893 U		0.08799 U
	Plutonium-239/240	pCi/L		-1E-06 U		0 U
	Technetium-99	pCi/L		5.77 U		3.39 U
	Uranium	µg/L		0.1055 U		-0.06488 U
	Uranium-233/234	pCi/L		0.05346 U		0.0595 U
	Uranium-235	pCi/L		0 U		-0.02443 U
	Uranium-236	pCi/L		-0.0197 U		0.02195 U
	Uranium-238	pCi/L		0.03557 U		-0.01974 U
X737-05B	Americium-241	pCi/L		0.129 U		-0.1259 U
	Neptunium-237	pCi/L		-0.1035 U		0.04434 U
	Plutonium-238	pCi/L		0.1032 U		0.1327 U
	Plutonium-239/240	pCi/L		0 U		-0.02208 U
	Technetium-99	pCi/L		3.99 U		9.7 U
	Uranium	µg/L		-3E-06 U		0.1787 U
	Uranium-233/234	pCi/L		-0.0207 U		-0.09998 U
	Uranium-235	pCi/L		0 U		0 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0 U		0.06007 U
X737-06G	Americium-241	pCi/L		0.1132 U		0.1209 U
	Neptunium-237	pCi/L		-0.1677 MU		5.91E-05 U
	Plutonium-238	pCi/L		0.0478 U		-0.01962 U
	Plutonium-239/240	pCi/L		-0.0717 U		-0.01965 U
	Technetium-99	pCi/L		7.84 U		6.12 U
	Uranium	µg/L		0.3218		0.06096 U
	Uranium-233/234	pCi/L		0.1083 U		-0.09156 U
	Uranium-235	pCi/L		0 U		-0.02825 U
	Uranium-236	pCi/L		0 U		0.02539 U
	Uranium-238	pCi/L		0.1081		0.02288 U
X737-07B	Americium-241	pCi/L		-0.0538 U		0.01834 U
	Neptunium-237	pCi/L		-0.103 U		-0.01952 U

Table 4.16. Results for radionuclides at the X-735 Landfills (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X737-07B	Plutonium-238	pCi/L		0.077 U		0.05876 U
	Plutonium-239/240	pCi/L		0.077 U		0.03918 U
	Technetium-99	pCi/L		2.45 U		7.65 U
	Uranium	µg/L		0.174 U		-0.1344 U
	Uranium-233/234	pCi/L		0.1216		-0.04058 U
	Uranium-235	pCi/L		-0.0250 U		-0.05021 U
	Uranium-236	pCi/L		0 U		-0.02252 U
	Uranium-238	pCi/L		0.06236 U		-0.04058 U
X737-08B	Americium-241	pCi/L		0.07172 U		-0.06023 U
	Neptunium-237	pCi/L		0 U		-0.01727 U
	Plutonium-238	pCi/L		0.06064 U		0.05191 U
	Plutonium-239/240	pCi/L		0 U		0.01731 U
	Technetium-99	pCi/L		6.27 U		7.58 U
	Uranium	µg/L		0.5198 U		1.401
	Uranium-233/234	pCi/L		0.7874		1.774
	Uranium-235	pCi/L		0 U		0 U
	Uranium-236	pCi/L		0 U		-0.02485 U
	Uranium-238	pCi/L		0.1746 U		0.4707
X737-09G	Americium-241	pCi/L		0.03055 U		-0.06525 U
	Neptunium-237	pCi/L		0.02211 U		-0.1288 U
	Plutonium-238	pCi/L		0.06615 U		0.02149 U
	Plutonium-239/240	pCi/L		0.02205 U		0.02144 U
	Technetium-99	pCi/L		7.13 U		20.8
	Uranium	µg/L		-0.0641 U		-0.07353 U
	Uranium-233/234	pCi/L		0.2321 U		0.04466 U
	Uranium-235	pCi/L		-0.0239 U		-0.02739 U
	Uranium-236	pCi/L		-0.0214 U		-0.0246 U
	Uranium-238	pCi/L		-0.0177 U		-0.02214 U

Table 4.17. Volatile organic compounds detected at the X-734 Landfills

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X734-03G	1,4-Dichlorobenzene	µg/L		8		9
X734-05B	Benzene	µg/L		3		3
X734-21B	cis-1,2-Dichloroethene	µg/L		22		49
	trans-1,2-Dichloroethene	µg/L		4 U		4
	Trichloroethene	µg/L		130		280 E

Table 4.18. Results for radionuclides at the X-734 Landfills

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
RSY-02B	Americium-241	pCi/L		1.8E-05 U		9.02E-05 U
	Neptunium-237	pCi/L		0.03055 U		0.0488 U
	Plutonium-238	pCi/L		0.0457 U		0.04861 U
	Plutonium-239/240	pCi/L		0.1219 U		0 U
	Technetium-99	pCi/L		-1.09 U		0.998 U
	Uranium	µg/L		-0.0675 U		-0.08005 U
	Uranium-233/234	pCi/L		-0.0556 U		-0.1221 U
	Uranium-235	pCi/L		-0.0457 U		-0.03017 U
	Uranium-236	pCi/L		-0.0205 U		0.02718 U
	Uranium-238	pCi/L		-0.0155 U		-0.02434 U
X734-01G	Americium-241	pCi/L		0.03043 U		-0.156 U
	Neptunium-237	pCi/L		-0.1672 U		0.000189 U
	Plutonium-238	pCi/L		-0.1668 U		0.03427 U
	Plutonium-239/240	pCi/L		0.02781 U		-0.01706 U
	Technetium-99	pCi/L		13.1		-0.86 U
	Uranium	µg/L		0.4424 U		0.2033 U
	Uranium-233/234	pCi/L		0.3165		0.04417 U
	Uranium-235	pCi/L		0 U		0.02718 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0.1486 U		0.06589 U
X734-02B	Americium-241	pCi/L		0.02282 U		-0.06575 U
	Neptunium-237	pCi/L		-0.079 U		-0.05346 U
	Plutonium-238	pCi/L		0.1103 U		0.0712 U
	Plutonium-239/240	pCi/L		0.03151 U		-0.01775 U
	Technetium-99	pCi/L		3.71 U		4.33 U
	Uranium	µg/L		0.05625 U		-0.04819 U
	Uranium-233/234	pCi/L		-0.2219 U		-0.02084 U
	Uranium-235	pCi/L		0.02106 U		0.05205 U
	Uranium-236	pCi/L		0 U		0.02337 U
	Uranium-238	pCi/L		0.01564 U		-0.02096 U
X734-03G	Americium-241	pCi/L		-0.051 U		0.1648 U
	Neptunium-237	pCi/L		-0.0585 U		-0.1169 U
	Plutonium-238	pCi/L		-2E-06 U		-0.03884 U
	Plutonium-239/240	pCi/L		-6E-07 U		0.01945 U
	Technetium-99	pCi/L		7.7 U		0.303 U
	Uranium	µg/L		3.63		3.634
	Uranium-233/234	pCi/L		2.45		2.393
	Uranium-235	pCi/L		0.06004 U		0.07632 U

Table 4.18. Results for radionuclides at the X-734 Landfills (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X734-03G	Uranium-236	pCi/L		-0.0359 U		-0.02278 U
	Uranium-238	pCi/L		1.21		1.214
X734-04G	Americium-241	pCi/L		0.1454 U		0.07971 U
	Neptunium-237	pCi/L		-0.2991 U		-0.03727 U
	Plutonium-238	pCi/L		0.02982 U		0.07451 U
	Plutonium-239/240	pCi/L		-0.0298 U		-0.01857 U
	Technetium-99	pCi/L		7.98 U		5.42 U
	Uranium	µg/L		4.888		2.138
	Uranium-233/234	pCi/L		1.778		0.6086
	Uranium-235	pCi/L		0.06389 U		0.06525 U
	Uranium-236	pCi/L		-0.0191 U		-0.02927 U
	Uranium-238	pCi/L		1.633		0.7128
X734-05B	Americium-241	pCi/L		0.08352 U		-0.05514 U
	Neptunium-237	pCi/L		-0.0417 U		-0.09126 U
	Plutonium-238	pCi/L		6.9E-06 U		0.07299 U
	Plutonium-239/240	pCi/L		-0.0208 U		0.0547 U
	Technetium-99	pCi/L		1.25 U		8.41 U
	Uranium	µg/L		1.497		0.8564
	Uranium-233/234	pCi/L		1.79		1.373
	Uranium-235	pCi/L		0.01937 U		0 U
	Uranium-236	pCi/L		0 U		0.02622 U
	Uranium-238	pCi/L		0.5		0.3307
X734-06G	Americium-241	pCi/L		0.05033 U		0.1633 U
	Neptunium-237	pCi/L		1.2E-05 U		-0.09832 U
	Plutonium-238	pCi/L		0.05852 U		0.03927 U
	Plutonium-239/240	pCi/L		2E-06 U		0.01967 U
	Technetium-99	pCi/L		6.27 U		-1.49 U
	Uranium	µg/L		0.08624 U		0.8053
	Uranium-233/234	pCi/L		-0.0776 U		0.07327 U
	Uranium-235	pCi/L		-0.0191 U		0.03009 U
	Uranium-236	pCi/L		-0.0515 U		0.02702 U
	Uranium-238	pCi/L		0.03223 U		0.2678
X734-10G	Americium-241	pCi/L		0.03459 U		-0.01759 U
	Neptunium-237	pCi/L		-0.5487 U		-0.1158 U
	Plutonium-238	pCi/L		-0.2239 U		0.07715 U
	Plutonium-239/240	pCi/L		0.04976 U		5.78E-05 U
	Technetium-99	pCi/L		9.17 U		-2.14 U
	Uranium	µg/L		0.2528 U		0.2129 U

Table 4.18. Results for radionuclides at the X-734 Landfills (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X734-10G	Uranium-233/234	pCi/L		0.3387		0.02314 U
	Uranium-235	pCi/L		-0.044 U		0.02843 U
	Uranium-236	pCi/L		-0.0198 U		0 U
	Uranium-238	pCi/L		0.09187		0.069 U
X734-14G	Americium-241	pCi/L		0.01683 U		-0.03603 U
	Neptunium-237	pCi/L		-0.3448 U		0.03458 U
	Plutonium-238	pCi/L		0.06874 U		0.05168 U
	Plutonium-239/240	pCi/L		-0.0344 U		0.05169 U
	Technetium-99	pCi/L		5.25 U		-0.951 U
	Uranium	µg/L		0.4308 U		0.4522 U
	Uranium-233/234	pCi/L		0.2808 U		0.2466 U
	Uranium-235	pCi/L		0.04948 U		-0.05524 U
	Uranium-236	pCi/L		0.04443 U		0.04965 U
	Uranium-238	pCi/L		0.1368 U		0.1566 U
X734-15G	Americium-241	pCi/L		0.04618 U		-0.0342 U
	Neptunium-237	pCi/L		-0.0728 U		4.41E-05 U
	Plutonium-238	pCi/L		0.01944 U		0.06604 U
	Plutonium-239/240	pCi/L		-0.0370 U		0 U
	Technetium-99	pCi/L		12.2		-1.78 U
	Uranium	µg/L		0.1004 U		0.1332 U
	Uranium-233/234	pCi/L		-0.1014 U		-0.02224 U
	Uranium-235	pCi/L		0 U		2.76E-05 U
	Uranium-236	pCi/L		0 U		0 U
	Uranium-238	pCi/L		0.03375 U		0.04478 U
X734-16G	Americium-241	pCi/L		-0.0368 U		
	Neptunium-237	pCi/L		-0.6084 U		
	Plutonium-238	pCi/L		1.8E-05 U		
	Plutonium-239/240	pCi/L		-0.0639 U		
	Technetium-99	pCi/L		1.92 U		
	Uranium	µg/L		6.268		
	Uranium-233/234	pCi/L		2.892		
	Uranium-235	pCi/L		0.1136 U		
	Uranium-236	pCi/L		0.02041 U		
	Uranium-238	pCi/L		2.088		
X734-18G	Americium-241	pCi/L		-0.1741 U		-0.1627 U
	Neptunium-237	pCi/L		0.4338 U		0.01708 U
	Plutonium-238	pCi/L		-0.0481 U		-0.0339 U
	Plutonium-239/240	pCi/L		0.1442 U		1.7E-05 U

Table 4.18. Results for radionuclides at the X-734 Landfills (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
X734-18G	Technetium-99	pCi/L		9.05 U		7.37 U
	Uranium	µg/L		0.9081		1.175
	Uranium-233/234	pCi/L		0.4108		0.6471
	Uranium-235	pCi/L		0.02204 U		0.02851 U
	Uranium-236	pCi/L		0.01979 U		0.0256 U
	Uranium-238	pCi/L		0.3016		0.392
X734-20G	Americium-241	pCi/L				0.04139 U
	Neptunium-237	pCi/L				-0.2437 U
	Plutonium-238	pCi/L				7.3E-05 U
	Plutonium-239/240	pCi/L				2.43E-05 U
	Technetium-99	pCi/L				4.01 U
	Uranium	µg/L				0.000626 U
	Uranium-233/234	pCi/L				0.1846 U
	Uranium-235	pCi/L				2.84E-05 U
	Uranium-236	pCi/L				0.02555 U
	Uranium-238	pCi/L				6.89E-05 U
X734-21B	Americium-241	pCi/L		-0.1325 U		0.08614 U
	Neptunium-237	pCi/L		-0.0466 U		-0.05053 U
	Plutonium-238	pCi/L		-3E-06 U		0.03366 U
	Plutonium-239/240	pCi/L		-1E-06 U		0.03367 U
	Technetium-99	pCi/L		0.0457 U		-2.17 U
	Uranium	µg/L		-0.0508 U		1.311
	Uranium-233/234	pCi/L		0.1221 U		0.3973
	Uranium-235	pCi/L		-0.0188 U		0.02579 U
	Uranium-236	pCi/L		-0.0338 U		0.02316 U
	Uranium-238	pCi/L		-0.014 U		0.4382
X734-22G	Americium-241	pCi/L		0.01708 U		-0.03681 U
	Neptunium-237	pCi/L		-0.1233 U		-0.1052 U
	Plutonium-238	pCi/L		2.1E-06 U		0.05255 U
	Plutonium-239/240	pCi/L		0.09225 U		-0.05243 U
	Technetium-99	pCi/L		9.2 U		0.43 U
	Uranium	µg/L		0.8695 U		0.8377
	Uranium-233/234	pCi/L		0.5642		0.2368
	Uranium-235	pCi/L		0.02109 U		0.02655 U
	Uranium-236	pCi/L		0.03788 U		-0.02381 U
	Uranium-238	pCi/L		0.2887		0.2792

Table 4.19. Results for cadmium, cobalt, and nickel at the X-533 Switchyard Area

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
F-03G	Cadmium	µg/L		21.7 B		49
	Cobalt	µg/L		37.8 B		147
	Nickel	µg/L		255		921
TCP-01G	Cadmium	µg/L		27.2		29.9
	Cobalt	µg/L		61.7		72.5
	Nickel	µg/L		275		296
X533-03G	Cadmium	µg/L		7.06 B		9.98 B
	Cobalt	µg/L		23.5 B		36.2 B
	Nickel	µg/L		138		190

Table 4.20. Volatile organic compounds detected at surface water monitoring locations

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
BRC-SW01	Bromodichloromethane	µg/L	5	2	2 U	2 U
	Chloroform	µg/L	10	5	5	4
	Dibromochloromethane	µg/L	5	2	2	2
EDD-SW01	Bromodichloromethane	µg/L	4	5	4	4
	Chloroform	µg/L	6	6	5	6
	Dibromochloromethane	µg/L	5	4	5	5
LBC-SW01	Bromodichloromethane	µg/L	4	2	3	3
	Chloroform	µg/L	4	3	4	5
	Dibromochloromethane	µg/L	4	2	4	4
LBC-SW02	Bromodichloromethane	µg/L	3	2 U	2	2
	Chloroform	µg/L	3	2	3	3
	Dibromochloromethane	µg/L	3	2 U	3	3
UND-SW01	Trichloroethene	µg/L	3	2	3	2 U
WDD-SW01	Bromoform	µg/L	2 U	2 U	3	2 U

Table 4.21. Results for radionuclides at surface water monitoring locations

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
BRC-SW01	Americium-241	pCi/L	-0.023 U	0.04111 U	0.3327 U	-0.0593 U
	Neptunium-237	pCi/L	-0.086 U	-0.2282 U	-0.1752 U	-0.05295 U
	Plutonium-238	pCi/L	0.0854 U	0.04551 U	-0.02911 U	0.07053 U
	Plutonium-239/240	pCi/L	-0.028 U	0.04551 U	0.02913 U	-0.01759 U
	Technetium-99	pCi/L	-0.462 U	3.02 U	7.33 U	-8.07 U
	Uranium	µg/L	1.285	1.99	0.6598	0.9098 U
	Uranium-233/234	pCi/L	0.7745	1.559	0.1778 U	0.7755
	Uranium-235	pCi/L	0.0503 U	0.04323 U	0 U	0.05314 U
	Uranium-236	pCi/L	0.0226 U	0.03882 U	-0.02462 U	0 U
	Uranium-238	pCi/L	0.4238	0.6616	0.2218	0.301 U
BRC-SW02	Americium-241	pCi/L	0.1814 U	0.03985 U	0.03906 U	-0.0749 U
	Neptunium-237	pCi/L	0.1576 U	-0.0874 U	-0.2535 U	-0.07387 U
	Plutonium-238	pCi/L	0 U	-0.0218 U	-0.1084 U	0.03688 U
	Plutonium-239/240	pCi/L	0.0524 U	0.02178 U	-0.03612 U	0.03687 U
	Technetium-99	pCi/L	4.88 U	14.2	9.64 U	-2.7 U
	Uranium	µg/L	1.767	0.8017	0.3724 U	1.001
	Uranium-233/234	pCi/L	1.416	0.7113	0.6128 R	1.332
	Uranium-235	pCi/L	0 U	0.01656 U	0 RU	0.0411 U
	Uranium-236	pCi/L	-0.023 U	9.9E-07 U	0 RU	0.07374 U
	Uranium-238	pCi/L	0.594	0.2668 U	0.1251 RU	0.3322
EDD-SW01	Americium-241	pCi/L	0.0554 U	-0.0165 U	-0.2377 U	0.0967 U
	Neptunium-237	pCi/L	-0.127 U	0.08549 U	0.01681 U	-0.1533 U
	Plutonium-238	pCi/L	0.0508 U	0.06393 U	0.03353 U	0.08525 U
	Plutonium-239/240	pCi/L	-0.025 U	0.06392 U	-0.03352 U	1.76E-05 U
	Technetium-99	pCi/L	5.67 U	17.5	-6.16 U	-2.45 U
	Uranium	µg/L	1.172 U	1.913	1.128	0.5547 U
	Uranium-233/234	pCi/L	1.28	3.171	0.9	0.8136
	Uranium-235	pCi/L	0.0211 U	0.24	0 U	0.03237 U
	Uranium-236	pCi/L	0 U	2.9E-06 U	-0.04431 U	0.02906 U
	Uranium-238	pCi/L	0.3905 U	0.6053	0.3792	0.1833 U
LBC-SW01	Americium-241	pCi/L	0.1348 U	0 U	-0.08169 U	0.2084 U
	Neptunium-237	pCi/L	0 U	-0.1017 U	-0.07687 U	-0.07041 U
	Plutonium-238	pCi/L	-0.048 U	0 U	0.01916 U	0.01777 U
	Plutonium-239/240	pCi/L	0 U	0.05071 U	0.01916 U	-0.03515 U
	Technetium-99	pCi/L	7.46 U	12	1.27 U	87.4
	Uranium	µg/L	0.5203 U	0.6826	1.33	0.5237 U
	Uranium-233/234	pCi/L	0.8908	1.234 B	0.7613	0.9294
	Uranium-235	pCi/L	3E-06 U	0.05931 U	0 U	0.02388 U

Table 4.21. Results for radionuclides at surface water monitoring locations (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
LBC-SW01	Uranium-236	pCi/L	0.0352 U	0.01775 U	-0.0248 U	-0.0214 U
	Uranium-238	pCi/L	0.1746 U	0.22	0.4469	0.1739
LBC-SW02	Americium-241	pCi/L	0.0557 U	0.07698 U	-0.2505 U	0.1742 U
	Neptunium-237	pCi/L	-0.077 U	0.09401 U	-0.01922 U	-0.0153 U
	Plutonium-238	pCi/L	0.0769 U	0.04687 U	0.07672 U	-0.06126 U
	Plutonium-239/240	pCi/L	0.0256 U	0.07031 U	0.03835 U	0.03078 U
	Technetium-99	pCi/L	10.7 U	21.2	3.56 U	-0.361 U
	Uranium	µg/L	1.16	0.4651	0.9895	0.7994 U
	Uranium-233/234	pCi/L	1.224	1.38 B	1.246	0.8972
	Uranium-235	pCi/L	0.0397 U	0.03783 U	0.02402 U	3.69E-05 U
	Uranium-236	pCi/L	0.0357 U	-0.034 U	0 U	3.31E-05 U
	Uranium-238	pCi/L	0.3832	0.1505	0.3287	0.2686
LBC-SW03	Americium-241	pCi/L	0.039 U	0.0319 U	-0.08523 U	0.05875 U
	Neptunium-237	pCi/L	-0.079 U	0 U	0.03595 U	-0.1441 U
	Plutonium-238	pCi/L	0.0792 U	0.07677 U	4.78E-06 U	0.08002 U
	Plutonium-239/240	pCi/L	0 U	-0.0256 U	-0.03584 U	-0.01597 U
	Technetium-99	pCi/L	11.9	7.96 U	-1.46 U	48.7
	Uranium	µg/L	0.8329	0.6792 U	0.3017 U	0.4562 U
	Uranium-233/234	pCi/L	0.7095	1.123	0.7351	1.005
	Uranium-235	pCi/L	7E-07 U	3.1E-06 U	0.02451 U	-0.03869 U
	Uranium-236	pCi/L	-0.018 U	0.04216 U	0 U	3.47E-05 U
	Uranium-238	pCi/L	0.2799 U	0.2279 U	0.09752 U	0.1567 U
LBC-SW04	Americium-241	pCi/L	0.0449 U	-0.1054 U	0.04046 U	0.03316 U
	Neptunium-237	pCi/L	-0.049 U	0.0281 U	-0.01988 U	-0.05371 U
	Plutonium-238	pCi/L	0.074 U	0 U	0.03966 U	0.05382 U
	Plutonium-239/240	pCi/L	-0.025 U	-0.0280 U	0 U	1.88E-05 U
	Technetium-99	pCi/L	13.2	17.3	1.02 U	573
	Uranium	µg/L	1.926	1.065	0.2049 U	1.383
	Uranium-233/234	pCi/L	3.844	1.333 B	0.7362	1.235
	Uranium-235	pCi/L	0.0878 U	0.05942 U	0.04036 U	0.05974 U
	Uranium-236	pCi/L	-0.039 U	-0.0178 U	-0.01812 U	0 U
	Uranium-238	pCi/L	0.6335	0.3486	0.06263 U	0.4592
NHP-SW01	Americium-241	pCi/L	0.1533 U	0.08136 U	-0.4151 U	0.1845 U
	Neptunium-237	pCi/L	0.0684 U	-0.0514 U	-0.1869 U	0.03647 U
	Plutonium-238	pCi/L	0.0227 U	0.05123 U	-0.02071 U	0.09103 U
	Plutonium-239/240	pCi/L	0 U	1.1E-05 U	0.02071 U	0.05452 U
	Technetium-99	pCi/L	5.12 U	13.8	-4.34 U	-6.86 U
	Uranium	µg/L	6.277	4.278	4.018	5.329

Table 4.21. Results for radionuclides at surface water monitoring locations (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
NHP-SW01	Uranium-233/234	pCi/L	2.35	1.617 R	1.491	1.808
	Uranium-235	pCi/L	0.0246 U	0.06939 RU	0.07663 U	0.07693 U
	Uranium-236	pCi/L	2E-06 U	0 RU	0.02293 U	0.02302 U
	Uranium-238	pCi/L	2.106	1.427 R	1.338	1.784
UND-SW01	Americium-241	pCi/L	0.0821 U	0.04411 U	0.2066 U	0.04475 U
	Neptunium-237	pCi/L	-0.049 U	-0.0717 U	0.09701 U	-0.02005 U
	Plutonium-238	pCi/L	0.0245 U	0.05361 U	-5.3E-07 U	0.08055 U
	Plutonium-239/240	pCi/L	-0.024 U	-0.0179 U	-0.01612 U	0.04029 U
	Technetium-99	pCi/L	6 U	5.34 U	-1.23 U	-2.42 U
	Uranium	µg/L	1.46	1.929	0.8928	1.473
	Uranium-233/234	pCi/L	0.9748	0.7467	0.3634	0.4212
	Uranium-235	pCi/L	0.0445 U	0.03543 U	-0.0249 U	0.0831 U
	Uranium-236	pCi/L	0 U	0.03181 U	0 U	0 U
	Uranium-238	pCi/L	0.4835	0.6425	0.3039	0.4874
UND-SW02	Americium-241	pCi/L	0.1739 U	0.04154 U	0.2804 U	0.04026 U
	Neptunium-237	pCi/L	-0.065 U	-0.4973 U	3.386E-06 U	-0.02475 U
	Plutonium-238	pCi/L	0.0433 U	0.06762 U	0.04035 U	2.48E-05 U
	Plutonium-239/240	pCi/L	0 U	0.06761 U	0 U	0.04962 U
	Technetium-99	pCi/L	2.33 U	4.24 U	5.01 U	-3.49 U
	Uranium	µg/L	2.305	0.9062	0.9751	0.4784 U
	Uranium-233/234	pCi/L	0.7855	0.3469	0.1478 U	0.4723
	Uranium-235	pCi/L	0.0843 U	0.01783 U	0 U	-0.02006 U
	Uranium-236	pCi/L	0 U	0 U	-0.01819 U	0 U
	Uranium-238	pCi/L	0.7613	0.3017	0.3278	0.1625 U
WDD-SW01	Americium-241	pCi/L	0.0255 U	-0.0232 U	0.02309 U	0.1541 U
	Neptunium-237	pCi/L	0 U	-0.4334 U	0.07459 U	-0.03787 U
	Plutonium-238	pCi/L	0 U	0.133 U	0.0186 U	0.05684 U
	Plutonium-239/240	pCi/L	0 U	-0.0332 U	-0.05579 U	0.01898 U
	Technetium-99	pCi/L	6.16 U	12.2	11 U	-1.46 U
	Uranium	µg/L	4.798	0.4005 U	0.8726 U	5.475
	Uranium-233/234	pCi/L	1.844	0.4482	0.5555	2.053
	Uranium-235	pCi/L	0.0979 U	0.04607 U	0.02337 U	0.08938 U
	Uranium-236	pCi/L	0.022 U	0 U	-0.03842 U	-0.05345 U
	Uranium-238	pCi/L	1.597	0.1274 U	0.2898 U	1.832
WDD-SW02	Americium-241	pCi/L	0.1438 U	0 U	0.0383 U	0.000146 U
	Neptunium-237	pCi/L	0 U	-0.1483 U	0.03775 U	-0.07256 U
	Plutonium-238	pCi/L	0 U	0.1183 U	0.03765 U	0 U
	Plutonium-239/240	pCi/L	0.0332 U	-0.0296 U	-0.01882 U	0.01811 U

Table 4.21. Results for radionuclides at surface water monitoring locations (continued)

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
WDD-SW02	Technetium-99	pCi/L	1.95 U	13.4	1.57 U	-0.303 U
	Uranium	µg/L	1.352	1.978	0.403 U	1.4
	Uranium-233/234	pCi/L	0.5713	0.7851	0.2673	0.8882
	Uranium-235	pCi/L	0.0243 U	0.1345	0.02061 U	2.23E-05 U
	Uranium-236	pCi/L	-0.044 U	-0.0483 U	0.03701 U	2.01E-05 U
	Uranium-238	pCi/L	0.4506	0.644	0.132 U	0.4704
WDD-SW03	Americium-241	pCi/L	0 U	0 U	0.01934 U	0.1334 U
	Neptunium-237	pCi/L	-0.127 U	-0.0981 U	-0.05159 U	-0.128 U
	Plutonium-238	pCi/L	0.0947 U	1.6E-06 U	0.0686 U	0.05478 U
	Plutonium-239/240	pCi/L	0 U	-0.0326 U	0.0343 U	0.03651 U
	Technetium-99	pCi/L	0.606 U	9.8 U	6.44 U	-4.02 U
	Uranium	µg/L	2.894	0.3674 U	1.447	3.872
	Uranium-233/234	pCi/L	1.765	0.4008	0.6314	1.586
	Uranium-235	pCi/L	-0.023 U	0 U	0 U	2.17E-05 U
	Uranium-236	pCi/L	-0.021 U	0.0683 U	0.01998 U	0 U
	Uranium-238	pCi/L	0.9762	0.1231 U	0.4861	1.301

Table 4.22. Results for radionuclides at exit pathway monitoring locations

Sampling Location	Parameter	Unit	First quarter	Second quarter	Third quarter	Fourth quarter
F-29B	Americium-241	pCi/L		1.5E-05 U		
	Neptunium-237	pCi/L		-0.0867 U		
	Plutonium-238	pCi/L		-0.0173 U		
	Plutonium-239/240	pCi/L		-0.0519 U		
	Technetium-99	pCi/L		-1.26 U		
	Uranium	µg/L		-0.1002 U		
	Uranium-233/234	pCi/L		-0.0712 U		
	Uranium-235	pCi/L		0.02196 U		
	Uranium-236	pCi/L		-0.0197 U		
	Uranium-238	pCi/L		-0.037 U		
X749-62B	Americium-241	pCi/L		-0.0217 U		
	Neptunium-237	pCi/L		-0.1369 U		
	Plutonium-238	pCi/L		0.0512 U		
	Plutonium-239/240	pCi/L		0 U		
	Technetium-99	pCi/L		-8.03 U		
	Uranium	µg/L		0.00063 U		
	Uranium-233/234	pCi/L		-0.056 U		
	Uranium-235	pCi/L		0 U		
	Uranium-236	pCi/L		0.04134 U		
	Uranium-238	pCi/L		0 U		

Note: A table is not provided for volatile organic compounds at exit pathway monitoring locations because none were detected at wells F-29B and X749-62B. Results for the following additional exit pathway monitoring locations can be found in the following tables:

- BRC-SW02, LBC-SW04, UND-SW02, and WDD-SW03: see Tables 4.20 and 4.21
- X701-48G: see Tables 4.7 and 4.8
- X749-14B, X749-44G, X749-45G, X749-64B, X749-68G, X749-96G, X749-97G, X749-98G, X749-99M, X749-100M, and X749-101M: see Tables 4.1 and 4.2

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