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Appendix F

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Human Health Risk-Based Screening Assessment
Richardson Flats Tailing Site OU2/OU3

Alloy LLC
All the right elements

Draft

Human Health Risk-Based Screening Assessment Richardson Flats Tailing Site OU2/OU3

Prepared for:

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Introduction

As specified in the EE/CA Field Sampling Plan that was prepared by Resource Environmental Management Consultants (RMC) for United Park City Mines Company, one of the objectives of the effort is to provide an assessment of the potential human health risks associated with the presence of hazardous substances within the Richardson Flat Tailings Site OU2 and OU3. As the initial step in meeting this objective, the results of the extensive data collection effort were screened against risk-based screening levels developed for the assessment of potential risks to human health. The media screened include surface water, ground water, soils, and sediments. The data for these environmental media collected from within OU2/OU3 were compared to several sets of health-based screening criteria. This document provides the results of this human health risk-based screening assessment.

The findings are primarily presented in detailed tables attached to this report, wherein site data are compared with screening criteria on a sample-by sample basis. The brief report describes the methods used, the data included in the screening assessment, and the broad conclusions that can be drawn from this assessment.

Screening Values

The goal of risk-based screening criteria is to provide an efficient tool for identifying concentrations of chemicals in environmental media below which no action or study is warranted. Conversely, where contaminant concentrations equal or exceed screening criteria, further study may be warranted to better assess the potential for human health risks. Screening criteria are not intended to be directly applied as remediation goals, and do not necessarily identify areas where cleanup is required.[1]

[1] U.S. EPA 1996. Soil Screening Guidance: User's Guide. Publication 9355.4-23. United States Environmental Protection Agency, Office of Solid Waste and Emergency Response. Washington, DC

In this assessment concentration data for soils, sediments, groundwater, and surface water collected from the site were screened against a variety of screening criteria, including the "Preliminary Human Health Screening Levels" that were provided by staff in U.S. EPA Region 8[2], and some risk-based screening values that were developed for specific sites in the vicinity of OU2 and OU3.

The Preliminary Human Health Screening Levels provided by Region 8 are equivalent to the Regional Screening Levels (RSLs) in the "Generic Tables" provided by U.S. EPA for initial screening of sites[3]. These values are based on standard default exposure assumptions, with no consideration for site-specific factors. As such, they are employed as part of an initial investigation to determine if contamination is present to warrant further investigation[3]. The preliminary screening levels utilized in this evaluation include criteria for:

- Residential soils
- Industrial soil,
- Tap water, and
- Risk-based soil screening levels developed for the protection of groundwater.

In order to provide information that is more specific to the conditions and uses in the vicinity of OU2/OU3, additional screenings were performed based on comparison against risk-based criteria developed for two sites upstream of OU2 and OU3. For the Empire Canyon CERCLIS site, the EE/CA that was performed included a streamlined human health risk assessment. In that assessment, United Park City Mines Company worked with risk assessment staff at Exponent, Inc. to develop screening criteria that reflected the anticipated uses of the site. Two sets of risk-based criteria were developed in this context, one associated with recreational uses, and the other for occupational exposures at the site. Because of potential similarities in land use between the

[2]Email from Keteles, Kristen to Lindsey Fox and Dan Wall, with cc to Jim Fricke, Kerry Gee, Kathryn Hernandez, and Carolyn Fordham. Dated January 8, 2015.

[3] U.S. EPA 2016. Regional Screening Levels (RSLs). https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016

two sites, these screening criteria from the Empire Canyon site were used to screen surface soils and sediments at OU2/OU3.

A third set of risk-based screening criteria used in evaluating the data from OU2/OU3 were drawn from the Baseline Human Health Risk Assessment (BHHRA) performed by U.S. EPA Region 8 for the OU1 of the Richardson Flat Tailings site[4]. In this document, anticipated uses of the area were used to develop exposure scenarios, and those exposure scenarios were, in turn, used to develop site-specific Risk-Based Concentrations for the anticipated recreational uses of the site. Because of the proximity of that site to OU2/OU3, and similarities in likely human exposures at the two sites, these screening criteria are most relevant to screening potential human health risks at OU2/OU3. Consequently, these are also used as a basis of screening the data collected from environmental media in OU2/OU3.

The risk-based concentrations for recreational users calculated for OU1 are based in a target cancer risk of 1 x 10-6 for carcinogens, and a Hazard Quotient of 0.1 for noncancer endpoints of toxicity. A summary of the calculated values is presented in Tables 3-6 of the BHHRA developed for that site. An exception is for lead. Due to the complexities associated with the calculation of screening levels for lead (i.e., the requirement of the use of pharmacokinetic models to predict blood lead levels associated with exposures from environmental media), the BHHRA for OU1 lists a generic (i.e., not site-specific) screening concentration for lead of 400 mg/kg in soil. However, Section 6.2 of that BHHRA presents an assessment of anticipated blood lead levels associated with recreational use of the site by children, who may be exposed to soil or sediment. In their detailed assessment, the BHHRA reports that a hypothetical child who lives in the vicinity of the site and engages in low-intensity recreational activities at the site (including 39 days of visits to the site each year) would not exceed the blood lead criterion when exposed to lead concentrations of 1,331 mg/kg in surficial soil and tailings[5]. Similarly, an analysis in the BHHRA identifies that recreational visitors to the site who might ingest sediment (on an average

[4] U.S. EPA, 2003. Baseline human health risk assessment for recreational visitors at Richardson Flat Tailings, Park City, Summit County, Utah. Prepared for The United Stated Environmental Protection Agency, Region 8. Prepared by Syracuse Research Corporation, Denver, CO.
[5] As noted in the BHHRA for OU1, "USEPA recommends that there should be no more than a 5% likelihood that a young child should have a PbB value greater than 10 ug/dl"

of 2 times per year), would not exceed the blood lead criterion if exposed to 4,446 mg/kg lead in sediments. Although the BHHRA does not identify the exact soil or sediment concentrations of lead that would achieve or exceed the threshold of the blood lead criterion, it does provide soil and sediment concentrations that would fall below the criterion (said another way, there are higher concentrations that also fall below the blood lead criterion, but those specific concentrations are not derived in the BHHRA for OU1). Therefore, lead concentrations of 1,331 mg/kg for soils, and 4,446 mg/kg for sediments were used in the screenings of site data from OU2/OU3.

The criterion used in each of the media- and criterion-specific screenings that form the basis of the human health screening analysis are included within each table of data. A summary of all of the screening criteria used in the human health screening assessment precedes the screening tables.

Data Used for Human Health Screening Assessment

Environmental monitoring data for the human health screening assessment were compiled by United Park City Mines Company, and provided to Alloy, LLC in an Excel spreadsheet format. Media sampled that are potentially relevant to human exposures at the site included soils, sediments, surface water, groundwater, and fish. A description of the available data is provided in the EE/CA Site Characterization Report for OU2/OU3.

Information specifically relevant to the human health screening assessment for the site, includes:

- Although total concentrations of metals in surface water or “daylighting” groundwater best represent the medium to which an individual might be exposure during incidental ingestion of water from the creek, site data are reported for both total and dissolved metals concentrations in water. Therefore, in order to ensure completeness, this screening assessment was conducted on the basis of both dissolved and total concentrations

- The screening for potential exposures to soil was conducted based on data collected from the surface soil horizon, as this represents the soils that an individual would be most likely to contact during visits to the site.

Technical Approach

The human health risk-based screening assessment for OU2/OU3 is comprised of a large set of tables (attached). Each table represents a medium-specific screening against one of the criteria listed above. Generally, the screening addresses the potential human exposures to soil, sediment, and water depicted in the Draft Human Health Conceptual Site Model for Richardson Flat OU2/OU3 that was included in the Field Sampling Plan for the OU2/OU3 site (Figure 2-1)[6].

Exceptions are that this preliminary screening does not explicitly address dust inhalation, dermal absorption, or possible ingestion of fish. For the metals in environmental media at the site, contribution to total exposure from these pathways would be expected to be relatively insignificant. Specifically, for the inhalation pathway a preliminary calculation showed that intake via inhalation is anticipated to be less than 1% of intake via ingestion. For dermal exposures, Risk Assessment Guidance for Superfund (RAGS) Part E specifies that the dermal route be included for a particular chemical only if dermal exposures are expected to be greater than 10% of oral exposure using standard residential inputs[7]. Dermal absorption factors are not available for many metals, particularly for metals in soil, where soil-metal interactions have been demonstrated to decrease the availability of metals for percutaneous absorption[8]. The relative insignificance of these exposure pathways has also been demonstrated in the soil screening values included in EPA's RSLs, in which the level of exposure via particulate inhalation and dermal contact is not considered to approach that of soil ingestion for most chemicals, particularly the metals considered in this assessment. Additionally, the BHHRA conducted for

[6] Resource Environmental Management Consultants, Inc, 2014. Field Sampling Plan, Richardson Flat Tailings Site, Operabue Units 2 and 3. Revision 1. Prepared for United Park City Mines Company, Midvale, UT.
[7] U.S. EPA 2001
[8] Lowney, Y., Wester, RC., Schoof RA., Cushing CA., Edwards, M., and MV Ruby. 2007. Dermal Absorption of arsenic from soils as measured in the rhesus monkey. Toxicol. Sci. 100(2), 381-392.

OU1 by Region 8 EPA discusses the low potential for significant exposures to site chemicals from either dermal absorption or via consumption of fish. For the latter, they cite the low potential for chemicals of concern for the site to accumulate in the fish tissues that are consumed by humans. Therefore, omitting these pathways from this screening assessment is not likely to result in an underestimation of potential risk from site-related contamination.

In the attached tables, individual data points from site samples are compared against screening criteria on a medium-specific basis. Sample locations where the reported concentration exceeds the screening criterion are highlighted for easy identification. These tables form the basis of this preliminary assessment, and are intended to provide an indication of appropriate next steps, if any, with regard to human health risk assessment of the site. The tables are organized by environmental medium (surface water, groundwater, sediment, soil) with separate tables provided for the screening of each individual criterion (described above) against the relevant site data. For assessing potential human contact with soils, only samples collected from the surface soil horizon were included in the comparison against human health screening criteria.

For soil, and groundwater, the data are parsed into groups according to location with regard to which OU the sample resides within, and whether the sample location fell within the floodplain or in an upland location. The EE/CA Site Characterization Report for OU2/OU3 provides a description and maps/figures that elucidate the definitions of these regions within the site. Although this results in a large number of tables in the screening process, it allows for some interpretation based on the location of the samples.

A list of the tables is provided below. The list describes the environmental medium, the location of the sample (by OU, and parsed based on location – upland or floodplain), and the specific screening criterion being applied. Summary statistics of the data used are also provided.

Tables included in Human Health Screening Assessment for OU2/OU3

Surface Water

Table F-1a. Screening results for surface water samples compared with EPA tapwater screening values

Table F-1b. Screening results for surface water samples compared with EPA MCL screening values

Table F-1c. Screening results for surface water samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBCs

Groundwater

Table F-2. Summary statistics for groundwater samples

Table F-2a. Screening results for OU2 Floodplain groundwater samples compared with EPA tapwater screening values

Table F-2b. Screening results for OU2 Upland groundwater samples compared with EPA tapwater screening values

Table F-2c. Screening results for OU3 Floodplain groundwater samples compared with EPA tapwater screening values

Table F-2d. Screening results for OU2 Floodplain groundwater samples compared with EPA MCLs

Table F-2e. Screening results for OU2 Upland groundwater samples compared with EPA MCLs

Table F-2f. Screening results for OU3 Floodplain groundwater samples compared with EPA MCLs

Sediment

Table F-3a. Screening results for sediment samples compared with EPA residential screening values

Table F-3b. Screening results for sediment samples compared with EPA industrial screening values

Table F-3c. Screening results for sediment samples compared with Protection of Groundwater SSLs

Table F-3d. Screening results for sediment samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC

Soil

Table F-4. Statistical summary for all soil samples

Table F-4a(1). Screening results for OU2 Floodplain soil samples compared with EPA residential soil screening values

Table F-4a(2). Screening results for OU2 Upland soil samples compared with EPA residential soil screening values

Table F-4a(3). Screening results for OU3 Floodplain soil samples compared with EPA residential soil screening values

Table F-4a(4). Screening results for OU3 Upland soil samples compared with EPA residential soil screening values

Table F-4b(1). Screening results for OU2 Floodplain soil samples compared with EPA industrial soil screening values

Table F-4b(2). Screening results for OU2 Upland soil samples compared with EPA industrial soil screening values

Table F-4b(3). Screening results for OU3 Floodplain soil samples compared with EPA industrial soil screening values

Table F-4b(4). Screening results for OU3 Upland soil samples compared with EPA industrial soil screening values

Table F-4c(1). Screening results for OU2 Floodplain soil samples compared with Protection of Groundwater SSLs

Table F-4c(2). Screening results for OU2 Upland soil samples compared with Protection of Groundwater SSLs

Table F-4c(3). Screening results for OU3 Floodplain soil samples compared with Protection of Groundwater SSLs

Table F-4c(4). Screening results for OU3 Upland soil samples compared with Protection of Groundwater SSLs

Table F-4d(1). Screening results for OU2 Floodplain soil samples compared with Empire Canyon recreational PRGs

Table F-4d(2). Screening results for OU2 Upland soil samples compared with Empire Canyon recreational PRGs

Table F-4d(3). Screening results for OU3 Floodplain soil samples compared with Empire Canyon recreational PRGs

Table F-4d(4). Screening results for OU3 Upland soil samples compared with Empire Canyon recreational PRGs

Table F-4e(1). Screening results for OU2 Floodplain soil samples compared with Empire Canyon industrial PRGs

Table F-4e(2). Screening results for OU2 Upland soil samples compared with Empire Canyon industrial PRGs

Table F-4e(3). Screening results for OU3 Floodplain soil samples compared with Empire Canyon industrial PRGs

Table F-4e(4). Screening results for OU3 Upland soil samples compared with Empire Canyon industrial PRGs

Table F-4f(1). Screening results for OU2 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

Table F-4f(2). Screening results for OU2 Upland soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

Table F-4f(3). Screening results for OU3 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

Table F-4f(4). Screening results for OU3 Upland soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

Table F-4g(1). Screening results for OU2 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

Table F-4g(2). Screening results for OU2 Upland soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

Table F-4g(3). Screening results for OU3 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

Table F-4g(3). Screening results for OU3 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

Findings

Consistent with goal of providing a streamlined assessment of site data, the human health assessment included in this document is structured as a set of detailed tables that compare the concentrations of metals measured at the site against the screening criteria, described above. Each data point from environmental media at the site that are potentially relevant to assessing human health risk was compared directly to the screening criteria, with any exceedances highlighted in the attached tables. Below is a summary of the findings, presented by environmental medium.

Surface Water Screening

Surface water concentrations reported for the site were compared against health-based screening criteria for tapwater, EPA Maximum Contaminant Levels, and screening criteria for recreational exposures developed as part of the BHHRA for OU1. The results of these screenings are presented in Tables F1a-c. The screening indicates that concentrations of lead and arsenic occasionally exceed their associated risk-based tapwater concentration and MCL, with the maximum reported concentrations exceeding the MCL criterion by no more than two-fold. Exceedances of the MCL occur more often for antimony, with the maximum reported concentration exceeding the MCL by about a factor of three-fold. These exceedances appear of low magnitude especially since the water was not processed as drinking water prior to analysis.

In no instances were concentrations of metals in surface water found to exceed the screening criteria for exposures associated with recreational exposures. This suggests that while there may be exceedances associated with theoretical use of the surface water as a drinking water supply, contact under foreseeable actual uses would not be expected to be associated with adverse human health effects.

Groundwater Screening

Groundwater concentrations reported for the site were compared against health-based screening criteria for tapwater, EPA Maximum Contaminant Levels, and screening criteria for recreational

exposures developed as part of the BHHRA for OU1. The data are parsed based on whether the sample location was within the floodplain or in upland areas of the site. The results of these screenings are presented in Tables F2a-f. For samples located within the floodplain, concentrations of several metals exceed the risk-based tapwater concentration and the MCL.

For the four samples from upland locations, only arsenic concentrations exceed the tapwater risk-based concentration, and no metals concentrations exceed the associated MCL. This suggests that groundwater sourced from locations outside of the floodplain is not significantly impaired by metals contamination.

Sediment Screening

The concentrations of metals in sediments reported for the site were compared against generic EPA soil screening criteria for residential and industrial land use, a soil screening criterion developed for the protection of groundwater, and against the risk-based soil concentrations developed in the BHHRA for OU1 that was developed by Region 8 EPA. The results of these screenings are presented in Tables F3a-d. The screening against residential soil screening criteria indicate frequent exceedances for antimony, arsenic and lead, with less frequent exceedances for manganese and cadmium. Similarly, screening against soil screening criteria developed for protection of groundwater, many metals in sediment exceed the criterion. When screened against soil screening levels for industrial land use, only lead and arsenic concentrations in sediment exceed the target criterion. When compared against the risk-based concentrations for soil developed in the BHHRA for application in OU1, only arsenic concentrations in sediment exceed their associated criterion. Taken together, this suggests that, for foreseeable uses of the area, arsenic concentrations may warrant further evaluation of potential for human health.

Surface Soil Screening

The concentrations of metals in surface soils reported for the site were compared against generic EPA soil screening criteria for residential and industrial land use, a soil screening criterion

developed for the protection of groundwater, against the risk-based soil concentrations developed in the BHHRA for OU1 that was developed by Region 8 EPA, and against the PRGs developed for recreational and occupational exposures for application in Empire Canyon. The results of these screenings are presented in Tables F4a-g. Several tables provide the results of this screening, because, in addition to comparisons against multiple screening criteria, this assessment evaluated soils separately depending on whether they fall within OU2 or OU3 and whether they were located within the boundaries of the floodplain.

The screening of soil concentration data for sample locations within the floodplain indicates that there are many locations with exceedances for several metals when screened against generic residential or industrial soil screening criteria, criteria based on protection of groundwater. Exceedances for soil samples collected from within the floodplain against the screening criteria developed for Empire Canyon indicate exceedances of the criteria only for lead, and only at a few of the sample locations. When compared to the calculated screening criteria low- and high-intensity recreational use at OU1, arsenic is the only chemical that has frequent exceedances of the criterion.

The screening of soil concentration data for the sample locations in the upland areas indicates that several metals exceed at several sample locations when compared against screening criteria developed for protection of groundwater. Comparison against generic residential and industrial soil screening criteria indicate consistent exceedances for arsenic, with frequent exceedances for lead. When compared to the recreational and industrial PRGs calculated for Empire canyon, only the PRG for lead is exceeded, at two locations in OU2. When compared against the risk-based concentrations for soil developed in the BHHRA for assessing recreational land uses in OU1, only arsenic concentrations in upland soils consistently exceed their associated criterion. As with the sediments, this suggests that, for foreseeable uses of the area, arsenic concentrations may warrant further evaluation of potential for human health.

Summary of Results

The screening evaluation conducted for OU2/OU3 to assess the exceedances of human health based screening criteria indicates concentrations of metals in site media frequently exceed generic screening criteria that have been developed for application in assessing residential or standard industrial land uses. When employing screening criteria that reflect the recreational types of land use anticipated for this site, then the exceedances disappear or become much less frequent. The contaminant most often found to exceed screening criteria was arsenic, and this was widely true for soils and sediments across most of the samples analyzed. It is common for soil arsenic concentrations to exceed health-based screening criteria for arsenic because the default screening concentrations are below background soil arsenic concentrations for much of the site. However, site concentrations of arsenic exceed some of the screening criteria that have been developed for land use scenarios that are more appropriate for this site, suggesting that potential human exposures to arsenic may warrant further evaluation to better assess potential associated health risks, and to inform site decisions.

Another important distinction that emerges from this human health screening evaluation is that the nature or magnitude of metals concentrations varies considerably across the site, especially with regard to whether the soils are located within the floodplain or in upland areas. It is interesting to note that the lead concentrations in two of the upland soil locations (OU2-0-SO-2A and OU2-0-SO-4B) are significantly higher than the concentrations reported for the other upland soils, an observation that may warrant further evaluation to characterize whether these soils have a specific source of contamination, or whether there may be errors in the reporting of concentrations at these locations.

Appendix F Tables

Summary of Screening Values Used in Human Health Screening Assessment for OU2/OU3

			EPA screening values (May 2016)							Empire Canyon PRGs			
SOIL/SEDIMENT	**SOIL/SEDIMENT (name used for lookup)**	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)	Recreational (mg/kg)		Construction Worker (mg/kg)	
Aluminum	Aluminum	7429-90-5	77000	n	1100000	nm	30000	n		87,350,427	n	61,939,394	
Antimony	Antimony (metallic)	7440-36-0	31	n	470	n	0.35	n	0.27	34,940	n	24,776	
Arsenic	Arsenic, Inorganic	7440-38-2	0.68	c*R	3	cR	0.0015	c	0.29	13,588	c	96,350	c
Barium	Barium	7440-39-3	15000	n	220000	nm	160	n	82	17,470,085	n	12,387,879	n
Beryllium	Beryllium and compounds	7440-41-7	160	n	2300	n	19	n	3.2	174,701	n	123,879	n
Cadmium	Cadmium (Diet)	7440-43-9	71	n	980	n				87,350	n	61,939	n
Calcium	Calcium	**Nutrient**											
Chromium	Chromium(III), Insoluble Salts	16065-83-1	120000	nm	1800000	nm	40000000	n		131,025,641	n	92,909,091	n
Cobalt	Cobalt	7440-48-4	23	n	350	n	0.27	n		26,205	n	18,582	n
Copper	Copper	7440-50-8	3100	n	47000	n	28	n	46	3,494,017	n	2,477,576	n
Iron	Iron	7439-89-6	55000	n	820000	nm	350	n		61,145,299	n	43,357,576	n
Lead	Lead and compounds	7439-92-1	400	L	800	L			15	12,045		8,212	
Magnesium	Magnesium	**Nutrient**											
Manganese	Manganese (Non-diet)	7439-96-5	1800	n	26000	n	28	n		2,096,410	n	1,486,545	n
Mercury	~Mercuric Chloride (and other Mercury salts)	7487-94-7	23	n	350	n		n		26,205	n	18,582	n
Nickel	Nickel Soluble Salts	7440-02-0	1500	n	22000	n	26	n		1,747,009	n	1,238,788	n
Nitrate	Nitrate									139,760,684	n	99,103,030	n
Phosphorus	Phosphorus, White	7723-14-0	1.6E+00	n	2.3E+01	n	1.5E-03	n		1,747	n	1,239	n
Potassium	Potassium	**Nutrient**											
Selenium	Selenium	7782-49-2	390	n	5800	n	0.52	n	0.26	436,752	n	309,697	n
Silver	Silver	7440-22-4	390	n	5800	n	0.8	n		436,752	n	309,697	n
Sodium	Sodium	**Nutrient**											
Thallium	Thallium (Soluble Salts)	7440-28-0	0.78	n	12	n	0.014	n	0.14	874	n	619	n
Vanadium	Vanadium and compounds	7440-62-2	390	n	5800	n	86	n		436,752	n	309,697	n
Zinc	Zinc and Compounds	7440-66-6	23000	n	350000	nm	370	n		26,205,128	n	18,581,818	n

Empire Canyon Notes:

* - FCW calculated using RfD; Empire Canyon Table 1 used the acute and subchronic; RfDsc = 0.015

Richardson Flats Notes:

* Based on HQ = 0.1 or Risk = 1E-06

+ Based on Region 3 RBC

Summary of Screening Values Used in Human Health Screening Assessment for OU2/OU3

			Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/kg)			
			Exposure to sediment	Exposure to soil and tailings		
SOIL/SEDIMENT	**SOIL/SEDIMENT (name used for lookup)**	CAS No.		RME low-intensity visitor	RME high-intensity visitor	Minimum Calculated RBC
Aluminum	Aluminum	7429-90-5	3,832,463			
Antimony	Antimony (metallic)	7440-36-0	1,533			
Arsenic	Arsenic, Inorganic	7440-38-2	75	4	6	4
Barium	Barium	7440-39-3	268,275			
Beryllium	Beryllium and compounds	7440-41-7	7,665			
Cadmium	Cadmium (Diet)	7440-43-9	3,832	192	255	192
Calcium	Calcium	**Nutrient**				
Chromium	Chromium(III), Insoluble Salts	16065-83-1				
Cobalt	Cobalt	7440-48-4				
Copper	Copper	7440-50-8				
Iron	Iron	7439-89-6				
Lead	Lead and compounds	7439-92-1	4,446	1,331	1,331	
Magnesium	Magnesium	**Nutrient**				
Manganese	Manganese (Non-diet)	7439-96-5	536550			
Mercury	~Mercuric Chloride (and other Mercury salts)	7487-94-7	1150	57	77	57
Nickel	Nickel Soluble Salts	7440-02-0	76650			
Nitrate	Nitrate					
Phosphorus	Phosphorus, White	7723-14-0				
Potassium	Potassium	**Nutrient**				
Selenium	Selenium	7782-49-2				
Silver	Silver	7440-22-4	19,163	40,379,305	53,839,601	40,379,305
Sodium	Sodium	**Nutrient**				
Thallium	Thallium (Soluble Salts)	7440-28-0	307			
Vanadium	Vanadium and compounds	7440-62-2	34,493			
Zinc	Zinc and Compounds	7440-66-6				

Empire Canyon Notes:

* - FCW calculated using RfD; Empire Canyon Table 1 used the acute and subchronic; RfDsc = 0.015

Richardson Flats Notes:

* Based on HQ = 0.1 or Risk = 1E-06

+ Based on Region 3 RBC

Surface Water

Table F-1a. Screening results for surface water samples compared with EPA tapwater screening values

Table F-1b. Screening results for surface water samples compared with EPA MCL screening values

Table F-1c. Screening results for surface water samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBCs

Groundwater

Table F-2. Summary statistics for groundwater samples

Table F-2a. Screening results for OU2 Floodplain groundwater samples compared with EPA tapwater screening values

Table F-2b. Screening results for OU2 Upland groundwater samples compared with EPA tapwater screening values

Table F-2c. Screening results for OU3 Floodplain groundwater samples compared with EPA tapwater screening values

Table F-2d. Screening results for OU2 Floodplain groundwater samples compared with EPA MCLs

Table F-2e. Screening results for OU2 Upland groundwater samples compared with EPA MCLs

Table F-2f. Screening results for OU3 Floodplain groundwater samples compared with EPA MCLs

Sediment

Table F-3a. Screening results for sediment samples compared with EPA residential screening values

Table F-3b. Screening results for sediment samples compared with EPA industrial screening values

Table F-3c. Screening results for sediment samples compared with Protection of Groundwater SSLs

Table F-3d. Screening results for sediment samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC

Soil

Table F-4. Statistical summary for all soil samples

Table F-4a(1). Screening results for OU2 Floodplain soil samples compared with EPA residential soil screening values

Table F-4a(2). Screening results for OU2 Upland soil samples compared with EPA residential soil screening values

Table F-4a(3). Screening results for OU3 Floodplain soil samples compared with EPA residential soil screening values

Table F-4a(4). Screening results for OU3 Upland soil samples compared with EPA residential soil screening values

Table F-4b(1). Screening results for OU2 Floodplain soil samples compared with EPA industrial soil screening values

Table F-4b(2). Screening results for OU2 Upland soil samples compared with EPA industrial soil screening values

Table F-4b(3). Screening results for OU3 Floodplain soil samples compared with EPA industrial soil screening values

Table F-4b(4). Screening results for OU3 Upland soil samples compared with EPA industrial soil screening values

Soil (cont.)

Table F-4c(1). Screening results for OU2 Floodplain soil samples compared with Protection of Groundwater SSLs

Table F-4c(2). Screening results for OU2 Upland soil samples compared with Protection of Groundwater SSLs

Table F-4c(3). Screening results for OU3 Floodplain soil samples compared with Protection of Groundwater SSLs

Table F-4c(4). Screening results for OU3 Upland soil samples compared with Protection of Groundwater SSLs

Table F-4d(1). Screening results for OU2 Floodplain soil samples compared with Empire Canyon recreational PRGs

Table F-4d(2). Screening results for OU2 Upland soil samples compared with Empire Canyon recreational PRGs

Table F-4d(3). Screening results for OU3 Floodplain soil samples compared with Empire Canyon recreational PRGs

Table F-4d(4). Screening results for OU3 Upland soil samples compared with Empire Canyon recreational PRGs

Table F-4e(1). Screening results for OU2 Floodplain soil samples compared with Empire Canyon industrial PRGs

Table F-4e(2). Screening results for OU2 Upland soil samples compared with Empire Canyon industrial PRGs

Table F-4e(3). Screening results for OU3 Floodplain soil samples compared with Empire Canyon industrial PRGs

Table F-4e(4). Screening results for OU3 Upland soil samples compared with Empire Canyon industrial PRGs

Table F-4f(1). Screening results for OU2 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

Table F-4f(2). Screening results for OU2 Upland soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

Table F-4f(3). Screening results for OU3 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

Table F-4f(4). Screening results for OU3 Upland soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

Table F-4g(1). Screening results for OU2 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

Table F-4g(2). Screening results for OU2 Upland soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

Table F-4g(3). Screening results for OU3 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

Table F-4g(3). Screening results for OU3 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

Table F-1a. Screening results for surface water samples compared with EPA tapwater screening values

													OU2 Samples					
		Sample ID											OU2-0-SW-AIRF		OU2-0-SW-AIRF		OU2-0-SW-AIRF	
		Operable Unit											OU2		OU2		OU2	
Tapwater		Sample date											3/9/2015		5/26/2015		8/31/2015	
(mg/L)		Habitat	N	count of NDs	% detected	Minimum	Maximum	Average	UCLM	Stdev	GeoMean		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	91	91	0%	0.016	0.016	0.016	--	1.0E-17	0.016		0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	91	4	95.6%	0.000474	0.0209	0.0071	0.00090	4.4E-03	0.006		**0.008**		0.006		**0.008**	
0.000052	c	Arsenic	91	9	90.1%	0.000106	0.022	0.0065	0.0010	4.7E-03	0.004		**0.006**		**0.006**		**0.009**	
3.8	n	Barium	91	0	100%	0.0195	0.397	0.057	0.010	4.7E-02	0.049		0.053		0.049		0.047	
0.025	n	Beryllium	91	91	0%	0.0000119	0.0000119	0.0000119	--	1.4E-20	0.000012		0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	91	46	49.5%	0.000171	0.00927	0.0012	0.00035	1.7E-03	0.00053		0.004		0.002		0.00017	ND
--		Calcium	91	0	100%	46	411	131	11.2	5.4E+01	122		146		145		106	
22.0	n	Chromium	91	90	1.1%	0.000436	0.00301	0.00046	0.00006	2.7E-04	0.00045		0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	91	91	0%	0.0000416	0.0000416	0.0000416	--	5.5E-20	0.0000416		0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	91	51	44.0%	0.000216	0.00882	0.0020	0.00049	2.4E-03	0.00077		0.0077		0.0039		0.0087	
14.0	n	Iron	91	84	7.7%	0.046	0.234	0.054	0.0061	2.9E-02	0.050		0.150		0.046	ND	0.046	ND
0.015	L	Lead	91	46	49.5%	0.000214	0.0265	0.0029	0.00091	4.4E-03	0.0010		**0.027**		0.004		0.009	
--		Magnesium	91	0	100%	11.1	88.1	30.7	3.0	1.5E+01	27.8		35.1		34.9		27.9	
0.43	n	Manganese	91	1	98.9%	0.0006	1.03	0.20	0.036	1.8E-01	0.14		0.209		0.159		0.052	
0.0057	n	Mercury	91	91	0%	0.0000026	0.00000446	0.0000044	--	4.3E-07	0.0000043		0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	91	82	9.9%	0.00079	0.00384	0.00097	0.00012	5.9E-04	0.00089		0.00079	ND	0.00079	ND	0.00200	
--		Potassium	91	0	100%	1.4	18.2	4.4	0.81	3.9E+00	3.4		7.26		4.49		16.60	
0.10	n	Selenium	91	91	0%	0.000135	0.000135	0.000135	--	1.9E-19	0.00014		0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	91	91	0%	0.0000217	0.0000217	0.0000217	--	2.4E-20	0.0000217		0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	91	0	100%	18.5	356	112	13.0	6.3E+01	95.2		185.0		135.0		203.0	
0.00020	n	Thallium	91	91	0%	0.0000217	0.0000217	0.0000217	--	2.4E-20	0.0000217		0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	91	90	1.1%	0.00053	0.00572	0.00059	0.00011	5.4E-04	0.00054		0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	91	2	97.8%	0.0045	3.15	0.55	0.12	5.6E-01	0.31		1.510		0.880		0.140	
		Total water																
20.0	n	Aluminum	91	75	17.6%	0.016	2.51	0.073	0.055	2.7E-01	0.025		0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	91	3	96.7%	0.000474	0.0212	0.0078	0.00092	4.5E-03	0.0065		0.00851		0.00734		0.00882	
0.000052	c	Arsenic	91	4	95.6%	0.000106	0.0262	0.0088	0.0011	5.6E-03	0.0065		0.00677		0.00811		0.0111	
3.8	n	Barium	91	0	100%	0.0202	0.397	0.059	0.010	4.6E-02	0.051		0.0521		0.0496		0.0458	
0.025	n	Beryllium	91	91	0%	0.0000119	0.0000119	0.0000119	--	1.4E-20	0.0000119		0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	91	15	83.5%	0.000171	0.022	0.0022	0.0006	2.9E-03	0.0012		0.00423		0.00396		0.000171	ND
--		Calcium	91	0	100%	45.1	394	131	10.6	5.2E+01	122		146		151		110	
22.0	n	Chromium	91	89	2.2%	0.000436	0.00516	0.00052	0.00012	6.0E-04	0.00046		0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	91	91	0%	0.0000416	0.0000416	0.0000416	--	5.5E-20	0.0000416		0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	91	8	91.2%	0.000216	0.044	0.0053	0.0011	5.2E-03	0.0036		0.00822		0.00811		0.0116	
14.0	n	Iron	91	13	85.7%	0.046	4.12	0.31	0.092	4.5E-01	0.21		0.199		0.144		0.046	ND
0.015	L	Lead	91	4	95.6%	0.000214	0.24	0.029	0.0060	2.9E-02	0.018		0.0384		0.0421		0.0383	
--		Magnesium	91	0	100%	10.5	83.5	30.9	2.8	1.4E+01	28.2		34.8		35.3		29.4	
0.43	n	Manganese	91	0	100%	0.00385	1.07	0.22	0.038	1.8E-01	0.16		0.22		0.182		0.0539	
0.0057	n	Mercury	91	88	3.3%	0.000002595	0.000328	0.000011	8.3E-06	4.0E-05	0.0000049		0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	91	82	9.9%	0.00079	0.00536	0.0010	0.00015	7.5E-04	0.00090		0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	91	0	100%	1.56	19.5	4.5	0.83	4.1E+00	3.5		7.18		4.65		17.5	
0.10	n	Selenium	91	91	0%	0.000135	0.000135	0.000135	--	1.9E-19	0.000135		0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	91	90	1.1%	0.0000217	0.00216	0.000045	0.000046	2.2E-04	0.000023		0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	91	0	100%	17	317	113	12.8	6.2E+01	95.9		202		136		221	
0.00020	n	Thallium	91	91	0%	0.0000217	0.0000217	0.0000217	--	2.4E-20	0.0000217		0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	91	89	2.2%	0.00053	0.00691	0.00065	0.00017	8.2E-04	0.00056		0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	91	0	100%	0.0118	3.15	0.63	0.12	5.9E-01	0.40		1.44		1.05		0.172	

Table F-1a. (cont.)

											OU2 Samples			
	Sample ID										OU2-0-SW-AIRF	OU2-0-SW-AIRF		OU2-0-SW-AIRF	
	Operable Unit										OU2	OU2		OU2	
Tapwater	Sample date										3/9/2015	5/26/2015		8/31/2015	
(mg/L)	Habitat	**N**	**count of NDs**	**% detected**	**Minimum**	**Maximum**	**Average**	**UCLM**	**Stdev**	**GeoMean**	Stream	Stream		Stream	
--	Hardness, as CaCO3	91	0	100%	161	1330	453	38.0	1.9E+02	422	508	523		396	
--	Phosphate, Total (as P)	91	56	38.5%	0.0106	1.66	0.18	0.078	3.8E-01	0.034	0.576	0.269		1.2	
--	Total Suspended Solids	91	44	51.6%	1.415	119	5.0	2.6	1.2E+01	2.9	4.8	1.415	ND	1.415	ND
32.0	Nitrate, as N	91	32	64.8%	0.00345	23.9	2.1	1.1	5.4E+00	0.055	7.74	4.25		19.1	
--	Chloride	91	0	100%	32.3	939	235	31.5	1.5E+02	196	367	267		393	
--	Sulfate	91	0	100%	12.6	723	178	19.2	9.3E+01	152	194	215		123	
--	Alkalinity, as CaCO3	91	0	100%	105	267	160	7.0	3.4E+01	157	161	170		150	
--	Total Dissolved Solids	91	0	100%	256	2190	818	74.7	3.6E+02	747	1260	1020		1040	

Table F-1a. (cont.)

			OU2 Samples															
		Sample ID	OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
Tapwater		Sample date	3/10/2015		5/26/2015		8/31/2015		10/8/2015		3/9/2015		5/26/2015		8/31/2015		10/8/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	**0.009**		0.006		**0.019**		**0.021**		**0.008**		0.006		**0.012**		**0.017**	
0.000052	c	Arsenic	**0.004**		**0.005**		**0.022**		**0.013**		**0.005**		**0.006**		**0.013**		**0.016**	
3.8	n	Barium	0.048		0.043		0.053		0.055		0.053		0.048		0.047		0.053	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.005		0.003		0.00017	ND	0.0005		0.003		0.002		0.0002	ND	0.0006	
--		Calcium	159		144		128		184		144		146		107		143	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0024		0.0032		0.0054		0.0042		0.0038		0.0038		0.0082		0.0063	
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	0.003		0.003		0.003		0.008		0.003		0.003		0.009		0.005	
--		Magnesium	36.1		35.0		34.5		47.2		34.8		35.2		28.0		34.7	
0.43	n	Manganese	0.249		0.157		0.305		0.360		0.206		0.185		0.066		0.251	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	3.23		1.87		4.61		5.18		8.15		3.92		16.00		10.50	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	159.0		102.0		81.8		98.2		186.0		126.0		196.0		143.0	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	1.790		0.827		0.282		0.658		1.410		0.972		0.168		0.461	
		Total water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.00971		0.00658		0.0196		0.0212		0.00857		0.00852		0.0133		0.0189	
0.000052	c	Arsenic	0.00651		0.0075		0.0262		0.0147		0.00741		0.00823		0.0134		0.0207	
3.8	n	Barium	0.0496		0.0442		0.0528		0.0545		0.0513		0.0497		0.0485		0.0551	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00544		0.00391		0.000712		0.00106		0.00423		0.00453		0.000171	ND	0.00123	
--		Calcium	157		149		131		188		144		156		113		145	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.00492		0.0061		0.00678		0.00592		0.00988		0.00905		0.011		0.0115	
14.0	n	Iron	0.159		0.046	ND	0.226		0.162		0.237		0.151		0.101		0.234	
0.015	L	Lead	0.0284		0.0227		0.0411		0.0479		0.0527		0.0587		0.0387		0.0755	
--		Magnesium	36.8		35.6		37.4		48		34		36.7		30.7		34.1	
0.43	n	Manganese	0.272		0.182		0.306		0.361		0.224		0.216		0.0679		0.264	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000155	
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	3.17		1.85		4.97		5.21		7.97		4.06		17.5		10.6	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	159		103		88.2		99.7		206		133		219		151	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	2.02		0.949		0.327		0.725		1.43		1.18		0.199		0.596	

Table F-1a. (cont.)

		OU2 Samples															
	Sample ID	OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
Tapwater	Sample date	3/10/2015		5/26/2015		8/31/2015		10/8/2015		3/9/2015		5/26/2015		8/31/2015		10/8/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	545		518		482		668		500		540		409		501	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.637		0.256		1.17		0.771	
--	Total Suspended Solids	4		1.415	ND	1.415	ND	1.415	ND	6.4		4		1.415	ND	3.2	
32.0	Nitrate, as N	0.00345	ND	0.00345	ND	0.0163		0.00345	ND	8.44		3.58		17.9		10.9	
--	Chloride	344		221		197		209		370		289		381		263	
--	Sulfate	209		222		176		320		176		216		128		221	
--	Alkalinity, as CaCO3	170		182		184		204		149		175		150		164	
--	Total Dissolved Solids	1070		860		768		1020		1180		1140		964		1030	

Table F-1a. (cont.)

			OU2 Samples															
		Sample ID	OU2-0-SW-IRF		OU2-0-SW-IRF		OU2-0-SW-PPTRIB		OU2-0-SW-SC1		OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR Dups ave		OU2-0-SW-SCBNPRR	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
Tapwater		Sample date	3/9/2015		5/26/2015		3/9/2015		10/8/2015		3/11/2015		5/27/2015		9/1/2015		10/8/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.004		0.006		0.000	ND	0.005		0.007		0.005		0.007		**0.018**	
0.000052	c	Arsenic	**0.002**		**0.006**		**0.000**	ND	**0.016**		**0.004**		**0.005**		**0.010**		**0.009**	
3.8	n	Barium	0.030		0.049		0.158		0.145		0.047		0.042		0.046		0.042	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0002	ND	0.0022		0.0002	ND	0.0002	ND	0.003		0.002		0.0002	ND	0.0008	
--		Calcium	264		144		69		74		151		159		127		180	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0002	ND	0.0039		0.0002	ND	0.0002	ND	0.0024		0.0022		0.0024		0.0033	
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.114		0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	0.000	ND	0.003		0.000	ND	0.000	ND	0.002		0.000	ND	0.003		0.007	
--		Magnesium	64.9		33.9		15.2		18.7		39.0		37.0		32.1		46.3	
0.43	n	Manganese	**0.538**		0.163		0.192		0.100		0.201		0.112		0.105		0.114	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	12.70		4.40		10.30		4.70		3.31		1.74		3.87		5.00	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	75.2		131.0		32.4		32.6		157.0		108.0		73.7		94.7	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	0.064		0.895		0.005	ND	0.038		1.340		0.689		0.185		0.672	
		Total water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.12		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.00378		0.00732		0.000474	ND	0.00589		0.00776		0.00489		0.00770		0.0183	
0.000052	c	Arsenic	0.00267		0.00844		0.000106	ND	0.022		0.00568		0.00669		0.0111		0.01	
3.8	n	Barium	0.0298		0.0509		0.142		0.15		0.0465		0.0428		0.048		0.0424	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.00421		0.000171	ND	0.000171	ND	0.00439		0.00281		0.000512		0.00105	
--		Calcium	265		152		67.5		74.7		150		147		134		184	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.00203		0.00836		0.000216	ND	0.000216	ND	0.0046		0.0032		0.003210		0.00367	
14.0	n	Iron	0.228		0.149		0.396		0.285		0.229		0.046	ND	0.116		0.105	
0.015	L	Lead	0.00356		0.0471		0.000214	ND	0.0243		0.0233		0.0106		0.0121		0.0133	
--		Magnesium	66.3		36.7		15		18.4		36.3		34.6		34.6		46.2	
0.43	n	Manganese	0.556		0.192		0.187		0.112		0.218		0.114		0.11		0.119	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	12.7		4.66		10.1		4.67		3.32		1.72		4.17		4.98	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	84		138		34.9		31.6		153		101		78.2		94.2	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.0722		1.07		0.0131		0.0705		1.28		0.703		0.213		0.711	

Table F-1a. (cont.)

		OU2 Samples												
	Sample ID	OU2-0-SW-IRF	OU2-0-SW-IRF	OU2-0-SW-PPTRIB		OU2-0-SW-SC1	OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR Dups ave		OU2-0-SW-SCBNPRR	
	Operable Unit	OU2	OU2	OU2		OU2	OU2		OU2		OU2		OU2	
Tapwater	Sample date	3/9/2015	5/26/2015	3/9/2015		10/8/2015	3/11/2015		5/27/2015		9/1/2015		10/8/2015	
(mg/L)	Habitat	Stream	Stream	Stream		Stream	Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	935	531	230		262	525		509		477		649	
--	Phosphate, Total (as P)	0.265	0.3	0.253		0.0548	0.0106	ND	0.0106	ND	0.035		0.0106	ND
--	Total Suspended Solids	7.6	3.2	1.415	ND	3.6	1.415	ND	1.415	ND	1.42	ND	1.415	ND
32.0	Nitrate, as N	1.31	3.89	0.943		0.318	0.00345	ND	0.00345	ND	0.0192		0.00345	ND
--	Chloride	309	259	90.4		89.5	328		210		169		191	
--	Sulfate	460	206	12.6		32.1	214		212		175		313	
--	Alkalinity, as CaCO3	159	173	167		179	177		189		194		199	
--	Total Dissolved Solids	1480	948	408		388	904		884		672		968	

Table F-1a. (cont.)

			OU2 Samples															
		Sample ID	OU2-0-SW-SCI		OU2-0-SW-SCI		OU2-0-SW-SCI		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCWWT Dups ave	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
Tapwater		Sample date	3/9/2015		5/26/2015		8/31/2015		3/9/2015		5/26/2015		8/31/2015		10/8/2015		3/10/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.005		0.005		0.005		**0.010**		0.007		**0.018**		**0.020**		0.000	ND
0.000052	c	Arsenic	**0.014**		**0.012**		**0.013**		**0.007**		**0.008**		**0.020**		**0.022**		**0.003**	
3.8	n	Barium	0.120		0.130		0.139		0.063		0.056		0.077		0.077		0.060	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0002	ND	0.0002	ND	0.0002	ND	0.0036		0.0028		0.0002	ND	0.0007		0.0006	
--		Calcium	64		70		60		141		146		96		132		116	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0027		0.0042		0.0057		0.0055		0.0077	
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.119		0.046	ND
0.015	L	Lead	0.003		0.004		0.005		0.000	ND	0.010		0.006		**0.016**		0.006	
--		Magnesium	16.1		16.3		15.0		33.9		34.6		24.8		31.9		28.8	
0.43	n	Manganese	0.111		0.069		0.029		0.264		0.214		0.108		0.298		0.048	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	3.84		2.79		2.13		6.05		3.59		12.70		9.41		14.80	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	21.7		25.8		24.2		153.0		115.0		149.5		120.5		213.5	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	0.048		0.041		0.065		1.710		1.095		0.296		0.513		0.260	
		Total water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.15	
0.0078	n	Antimony	0.00669		0.00563		0.00584		0.0108		0.0087		0.0198		0.0201		0.0023	
0.000052	c	Arsenic	0.0202		0.0132		0.0143		0.010		0.0098		0.0208		0.025		0.0037	
3.8	n	Barium	0.119		0.129		0.136		0.062		0.057		0.079		0.078		0.064	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	0.00454		0.00434		0.00057		0.00103		0.00086	
--		Calcium	62.7		68.6		61.7		139		146		99.4		134		114	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.00449		0.0023		0.00217		0.00843		0.00832		0.00731		0.00794		0.014	
14.0	n	Iron	0.592		0.224		0.158		0.335		0.208		0.130		0.301		0.13	
0.015	L	Lead	0.0665		0.0348		0.0248		0.0564		0.0487		0.0327		0.0552		0.026	
--		Magnesium	15.2		16.6		16.3		33.7		34.1		26.6		31.6		29.4	
0.43	n	Manganese	0.127		0.0758		0.0328		0.28		0.24		0.11		0.30		0.057	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	3.77		2.81		2.32		5.68		3.62		13.6		9.3		15.1	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	23.2		25.3		26.3		166		113		161		121		214	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.0052		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.133		0.0753		0.095		1.74		1.25		0.32		0.58		0.32	

Table F-1a. (cont.)

		OU2 Samples									
	Sample ID	OU2-0-SW-SCI	OU2-0-SW-SCI		OU2-0-SW-SCI		OU2-0-SW-SCI80 Dups ave	OU2-0-SW-SCI80 Dups ave	OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave	OU2-0-SW-SCWWT Dups ave
	Operable Unit	OU2	OU2		OU2		OU2	OU2	OU2		OU2	OU2
Tapwater	Sample date	3/9/2015	5/26/2015		8/31/2015		3/9/2015	5/26/2015	8/31/2015		10/8/2015	3/10/2015
(mg/L)	Habitat	Stream	Stream		Stream		Stream	Stream	Stream		Stream	Stream
--	Hardness, as CaCO3	219	240		221		486	505	358		463	405
--	Phosphate, Total (as P)	0.122	0.0579		0.0106	ND	0.347	0.181	0.864		0.54	1.62
--	Total Suspended Solids	6	1.415	ND	1.415	ND	4.20	2.71	1.42	ND	2.31	12.0
32.0	Nitrate, as N	0.582	0.52		0.0129		4.71	2.11	13.6		6.8	20.6
--	Chloride	65.5	71.5		63.7		331	240	300		222	392
--	Sulfate	25.6	26.5		19.1		173	208	98		188	141
--	Alkalinity, as CaCO3	159	163		161		165	182	161		180	133
--	Total Dissolved Solids	332	408		312		1055	942	862		860	1065

Table F-1a. (cont.)

			OU2 Samples											
		Sample ID	OU2-0-SW-SCWWT		OU2-0-SW-SCWWT		OU2-0-SW-SCWWT		OU2-0-SW-SGDINF		OU2-0-SW-SPRRP		OU2-0-SW-STRGD	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2	
Tapwater		Sample date	5/26/2015		8/31/2015		10/8/2015		3/10/2015		3/10/2015		3/10/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water												
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.002		0.002		0.003		**0.012**		**0.009**		0.003	
0.000052	c	Arsenic	**0.003**		**0.004**		**0.004**		**0.009**		**0.011**		**0.003**	
3.8	n	Barium	0.065		0.049		0.051		0.031		0.044		0.076	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0009		0.0002	ND	0.0002	ND	**0.0093**		0.0002	ND	0.0018	
--		Calcium	138		106		99		411		46		219	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0057		0.0083		0.0088		0.0041		0.0002	ND	0.0002	ND
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.125		0.046	ND
0.015	L	Lead	0.002		0.005		0.004		0.000	ND	0.004		0.000	ND
--		Magnesium	34.5		27.6		23.6		88.1		12.3		54.2	
0.43	n	Manganese	0.035		0.013		0.011		0.335		0.053		0.171	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00284		0.00079	ND	0.00079	ND
--		Potassium	13.30		18.20		16.70		2.37		3.66		2.86	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	240.0		224.0		210.0		107.0		19.5		172.0	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	0.299		0.069		0.099		3.150		0.485		0.668	
		Total water												
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.00363		0.00282		0.00383		0.0124		0.00934		0.00261	
0.000052	c	Arsenic	0.00425		0.00451		0.00602		0.00943		0.0192		0.00412	
3.8	n	Barium	0.0648		0.0491		0.0531		0.0318		0.0454		0.0748	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00124		0.000171	ND	0.000815		0.00928		0.00106		0.00174	
--		Calcium	141		110		103		394		45.1		208	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.0117		0.011		0.0149		0.00465		0.00252		0.000216	ND
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.57		0.144	
0.015	L	Lead	0.0315		0.0171		0.0378		0.000214	ND	0.0213		0.000214	ND
--		Magnesium	34.4		29.3		23.9		83.5		12		53.4	
0.43	n	Manganese	0.0505		0.015		0.0221		0.341		0.062		0.181	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00203		0.00079	ND	0.00079	ND	0.00298		0.00079	ND	0.00079	ND
--		Potassium	13.7		19.5		17.1		2.25		3.38		2.77	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	240		246		217		106		17		166	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.371		0.0902		0.198		3.15		0.607		0.711	

Table F-1a. (cont.)

		OU2 Samples									
	Sample ID	OU2-0-SW-SCWWT	OU2-0-SW-SCWWT		OU2-0-SW-SCWWT	OU2-0-SW-SGDINF		OU2-0-SW-SPRRP		OU2-0-SW-STRGD	
	Operable Unit	OU2	OU2		OU2	OU2		OU2		OU2	
Tapwater	Sample date	5/26/2015	8/31/2015		10/8/2015	3/10/2015		3/10/2015		3/10/2015	
(mg/L)	Habitat	Stream	Stream		Stream	Stream		Stream		Stream	
--	Hardness, as CaCO3	493	395		355	1330		162		738	
--	Phosphate, Total (as P)	1.3	1.45		1.66	0.0106	ND	0.0548		0.0106	ND
--	Total Suspended Solids	6	1.415	ND	4.8	4.4		1.415	ND	1.415	ND
32.0	Nitrate, as N	17.2	22.9		23.9	0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	448	427		329	387		32.3		532	
--	Sulfate	187	117		111	723		31.8		111	
--	Alkalinity, as CaCO3	136	145		139	267		127		249	
--	Total Dissolved Solids	1270	1100		1060	1730		352		1390	

Table F-1a. (cont.)

			OU3 Samples															
		Sample ID	OU3-0-SW-ASCAOU4		OU3-0-SW-HS		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-NGCF		OU3-0-SW-NPCWR	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater		Sample date	3/16/2015		3/11/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015		3/11/2015		3/10/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.005		0.000	ND	0.005		0.005		0.006		0.004		0.000	ND	**0.008**	
0.000052	c	Arsenic	**0.003**		**0.000**	ND	**0.000**	ND	**0.003**		**0.003**		**0.000**	ND	**0.000**	ND	**0.004**	
3.8	n	Barium	0.034		0.132		0.022		0.032		0.037		0.029		0.397		0.049	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0022		0.0002	ND	0.0005		0.0015		0.0007		0.0002	ND	0.0002	ND	0.0044	
--		Calcium	67		48		94		87		94		88		269		160	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0031		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0024	
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	0.002		0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.003	
--		Magnesium	13.5		11.4		14.2		15.4		15.3		13.9		80.1		36.3	
0.43	n	Manganese	0.046		0.001	ND	0.088		0.069		0.100		0.153		0.017		0.244	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00212		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	1.89		3.51		2.15		2.48		2.21		1.88		11.00		3.14	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	104.0		18.5		60.4		110.0		112.0		58.9		356.0		159.0	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.006		0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	0.544		0.005	ND	0.610		0.542		0.305		0.117		0.010		1.670	
		Total water																
20.0	n	Aluminum	0.226		0.138		0.016	ND	0.016	ND	0.016	ND	0.207		0.016	ND	0.016	ND
0.0078	n	Antimony	0.00539		0.000474	ND	0.0054		0.00532		0.00597		0.00439		0.000474	ND	0.00898	
0.000052	c	Arsenic	0.00383		0.000106	ND	0.00282		0.00321		0.00383		0.00292		0.000106	ND	0.00609	
3.8	n	Barium	0.037		0.133		0.0236		0.0319		0.039		0.0301		0.397		0.0504	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00292		0.000171	ND	0.0029		0.00301		0.00294		0.00201		0.000171	ND	0.00534	
--		Calcium	70.8		47.1		92.9		85.4		96.6		95		252		153	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.00924		0.000216	ND	0.00343		0.00394		0.00445		0.00362		0.000216	ND	0.00459	
14.0	n	Iron	0.339		0.211		0.144		0.144		0.242		0.439		0.046	ND	0.176	
0.015	L	Lead	0.0166		0.00587		0.00744		0.00713		0.0138		0.0145		0.000214	ND	0.0245	
--		Magnesium	13.3		10.5		15.5		15.4		15.7		15		74.3		37	
0.43	n	Manganese	0.0551		0.00385		0.0924		0.0666		0.108		0.162		0.0174		0.291	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.000002595	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	1.98		3.5		2.23		2.49		2.23		2.42		10.1		3.21	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	109		17.5		61.7		109		112		66		317		156	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00691		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.688		0.0118		0.724		0.6		0.411		0.373		0.0165		1.85	

Table F-1a. (cont.)

		OU3 Samples															
	Sample ID	OU3-0-SW-ASCAOU4		OU3-0-SW-HS		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-NGCF		OU3-0-SW-NPCWR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater	Sample date	3/16/2015		3/11/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015		3/11/2015		3/10/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	232		161		296		277		306		299		934		536	
--	Phosphate, Total (as P)	0.0106	ND	0.125		0.0106	ND	0.0106	ND	0.0106	ND	0.0713		0.0106	ND	0.0106	ND
--	Total Suspended Solids	6.4		9.2		3.6		3.6		3.6		7.2		1.415	ND	4.4	
32.0	Nitrate, as N	0.0109		0.76		0.253		0.0804		0.115		0.016		0.00345	ND	0.00345	ND
--	Chloride	189		44.1		112		180		198		117		939		349	
--	Sulfate	93.1		14.2		166		135		137		113		58.3		221	
--	Alkalinity, as CaCO3	107		116		114		120		108		130		234		179	
--	Total Dissolved Solids	468		256		400		576		628		448		2140		1080	

Table F-1a. (cont.)

			OU3 Samples															
		Sample ID	OU3-0-SW-NPCWR Dups ave		OU3-0-SW-NPCWR		OU3-0-SW-NPCWR		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC248AC	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater		Sample date	5/27/2015		8/31/2015		10/8/2015		3/11/2015		5/27/2015		9/1/2015		10/8/2015		3/13/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.006		**0.017**		**0.020**		0.007		0.006		**0.008**		0.007		0.006	
0.000052	c	Arsenic	**0.005**		**0.017**		**0.010**		**0.003**		**0.007**		**0.009**		**0.007**		**0.003**	
3.8	n	Barium	0.045		0.053		0.051		0.044		0.034		0.054		0.044		0.042	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0037		0.0002	ND	0.0005		0.0020		0.0016		0.0002	ND	0.0002	ND	0.0002	ND
--		Calcium	156		130		180		136		131		118		131		118	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0029		0.0041		0.0035		0.0002	ND	0.0024		0.0002	ND	0.0002	ND	0.0002	ND
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.234		0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	0.000	ND	0.004		0.005		0.000	ND	**0.021**		0.003		0.004		0.000	ND
--		Magnesium	36.8		34.7		46.2		32.5		31.6		29.5		29.7		26.8	
0.43	n	Manganese	0.197		0.288		0.292		0.062		0.152		**0.459**		0.193		0.173	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	1.74		4.58		5.13		2.70		1.58		2.70		2.20		2.41	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	107.0		81.3		94.8		155.0		86.4		68.6		51.3		131.0	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	1.455		0.202		0.638		0.549		0.287		0.054		0.105		0.425	
		Total water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.0061		0.0174		0.0198		0.00633		0.00559		0.00929		0.0088		0.0063	
0.000052	c	Arsenic	0.0062		0.0202		0.0135		0.00372		0.00854		0.0138		0.00953		0.00422	
3.8	n	Barium	0.046		0.0528		0.0517		0.0425		0.0351		0.0562		0.0466		0.0439	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00593		0.000559		0.00119		0.00226		0.00172		0.000586		0.000682		0.000929	
--		Calcium	150		134		181		132		120		126		125		119	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.0053		0.00721		0.0049		0.00203		0.0044		0.00357		0.00265		0.00208	
14.0	n	Iron	0.046	ND	0.173		0.146		0.152		0.306		0.576		0.311		0.211	
0.015	L	Lead	0.0076		0.0272		0.0264		0.00707		0.0332		0.0612		0.0369		0.0152	
--		Magnesium	35.2		37.4		46.1		31		29.2		32.4		29.6		26.9	
0.43	n	Manganese	0.203		0.292		0.305		0.0796		0.171		0.502		0.223		0.188	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	1.9		5		5		2.59		1.7		2.89		2.23		2.38	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	103		87.8		95.3		144		78.6		74		48.6		131	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	1.49		0.238		0.711		0.537		0.316		0.143		0.166		0.454	

Table F-1a. (cont.)

		OU3 Samples														
	Sample ID	OU3-0-SW-NPCWR Dups ave		OU3-0-SW-NPCWR		OU3-0-SW-NPCWR		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC248AC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater	Sample date	5/27/2015		8/31/2015		10/8/2015		3/11/2015		5/27/2015		9/1/2015		10/8/2015		3/13/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	519		488		642		459		420		449		435		407	
--	Phosphate, Total (as P)	0.011	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0549		0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.4	ND	1.415	ND	1.415	ND	1.415	ND	5.2		5.6		1.415	ND	4.8	
32.0	Nitrate, as N	0.0035	ND	0.0312		0.00345	ND	0.00345	ND	0.00345	ND	0.0218		0.00345	ND	0.0815	
--	Chloride	219		199		212		285		157		156		93.4		235	
--	Sulfate	223		184		321		206		212		156		241		176	
--	Alkalinity, as CaCO3	186		189		203		138		133		184		162		134	
--	Total Dissolved Solids	902		712		1000		816		648		608		616		792	

Table F-1a. (cont.)

			OU3 Samples															
		Sample ID	OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC		OU3-0-SW-SC248BC		OU3-9-SW-SC248BC	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater		Sample date	5/25/2015		9/1/2015		10/9/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		10/9/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.004		0.006		0.006		0.005		0.005		0.007		0.006		0.006	
0.000052	c	Arsenic	**0.005**		**0.010**		**0.009**		**0.004**		**0.005**		**0.010**		**0.006**		**0.006**	
3.8	n	Barium	0.057		0.167		0.121		0.039		0.033		0.052		0.045		0.047	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--		Calcium	132		192		205		159		119		118		128		131	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
14.0	n	Iron	0.046	ND	0.046	ND	0.154		0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.002		0.004		0.005	
--		Magnesium	31.6		46.4		48.1		37.3		29.8		28.5		31.3		29.2	
0.43	n	Manganese	**0.598**		**1.030**		**0.968**		**0.489**		0.200		**0.481**		0.411		0.409	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	1.68		2.71		2.03		2.57		1.66		2.56		2.32		2.31	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	94.8		215.0		172.0		112.0		70.2		68.6		57.2		57.4	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	0.309		0.852		0.672		0.365		0.235		0.087		0.169		0.174	
		Total water																
20.0	n	Aluminum	0.42		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.165		0.016	ND	0.016	ND
0.0078	n	Antimony	0.00506		0.00723		0.00593		0.0055		0.0056		0.0101		0.00612		0.00659	
0.000052	c	Arsenic	0.00872		0.0135		0.0112		0.0068		0.0076		0.0158		0.00842		0.00848	
3.8	n	Barium	0.0643		0.173		0.121		0.041		0.033		0.0574		0.046		0.0456	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00124		0.000171	ND	0.000171	ND	0.00102		0.00118		0.00127		0.000614		0.000631	
--		Calcium	121		201		186		160		111		126		123		125	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.00494		0.000216	ND	0.000216	ND	0.0023		0.0029		0.00678		0.00273		0.00293	
14.0	n	Iron	0.806		0.351		0.374		0.468		0.284		0.813		0.407		0.402	
0.015	L	Lead	0.0317		0.00555		0.00712		0.0244		0.0289		0.101		0.038		0.0372	
--		Magnesium	32		48.1		43.9		38.1		29.4		31.2		28.7		27.8	
0.43	n	Manganese	0.658		1.07		0.93		0.562		0.21		0.55		0.4		0.403	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000155		0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	1.84		2.97		2.06		2.6		1.6		2.93		2.28		2.25	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	85.5		225		159		114		64.1		73.5		53.5		54.4	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.412		0.927		0.662		0.42		0.29		0.278		0.211		0.212	

Table F-1a. (cont.)

		OU3 Samples													
	Sample ID	OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC		OU3-0-SW-SC248BC		OU3-9-SW-SC248BC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater	Sample date	5/25/2015		9/1/2015		10/9/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		10/9/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	435		700		644		557		397		444		425		428	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.035		0.011	ND	0.0718		0.0106	ND	0.0106	ND
--	Total Suspended Solids	16.4		1.415	ND	1.415	ND	2.7		3.4		7.2		1.415	ND	1.415	ND
32.0	Nitrate, as N	0.0587		0.0619		0.00345	ND	0.060		0.013		0.013		0.00345	ND	0.00345	ND
--	Chloride	210		608		397		224		144		140		106		104	
--	Sulfate	198		146		233		267		214		145		232		231	
--	Alkalinity, as CaCO3	156		208		210		161		135		181		161		161	
--	Total Dissolved Solids	768		1550		1230		914		642		600		636		700	

Table F-1a. (cont.)

			OU3 Samples															
		Sample ID	OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCBOU4	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater		Sample date	3/11/2015		5/27/2015		10/8/2015		11/12/2014		5/28/2015		9/2/2015		11/12/2014		3/16/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.006		0.004		**0.010**		0.006		0.006		0.006		0.005		0.005	
0.000052	c	Arsenic	**0.003**		**0.004**		**0.008**		**0.003**		**0.004**		**0.003**		**0.002**		**0.000**	ND
3.8	n	Barium	0.044		0.049		0.036		0.020		0.036		0.025		0.022		0.036	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0020		0.0014		0.0027		0.0008		0.0002	ND	0.0006		0.0006		0.0016	
--		Calcium	141		148		134		64		78		68		95		102	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0002	ND	0.0002	ND	0.0040		0.0002	ND	0.0023		0.0002	ND	0.0002	ND	0.0002	ND
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	0.000	ND	0.002		0.003		0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND
--		Magnesium	32.7		35.2		30.9		11.1		13.5		11.4		14.2		17.2	
0.43	n	Manganese	0.053		0.133		0.029		0.018		0.052		0.047		0.077		0.118	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00208		0.00234	
--		Potassium	2.78		2.14		2.82		1.47		1.74		1.40		2.23		2.77	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	164.0		118.0		61.5		28.3		98.6		30.7		61.6		155.0	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	0.697		0.654		1.110		0.338		0.108		0.200		0.623		0.945	
		Total water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.309		0.24		2.51		0.117	
0.0078	n	Antimony	0.00574		0.00428		0.00992		0.00638		0.00715		0.00598		0.0105		0.00465	
0.000052	c	Arsenic	0.00354		0.0043		0.00814		0.00347		0.00503		0.00394		0.0173		0.00315	
3.8	n	Barium	0.0454		0.0499		0.0362		0.0202		0.0403		0.0259		0.0462		0.0367	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00265		0.00223		0.00283		0.0014		0.0021		0.00238		0.022		0.00488	
--		Calcium	137		142		136		64		79		71.5		95.7		95	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00516		0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.00214		0.00313		0.00453		0.00458		0.00824		0.00641		0.044		0.00548	
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.127		0.442		0.395		4.12		0.22	
0.015	L	Lead	0.00485		0.00596		0.00528		0.00918		0.0296		0.0245		0.24		0.01	
--		Magnesium	31.9		32.6		30.6		11.6		13.9		12.4		16.9		16.9	
0.43	n	Manganese	0.0581		0.134		0.0311		0.0213		0.0657		0.0521		0.442		0.123	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000002595	ND	0.00000446	ND	0.00000446	ND	0.000328		0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00322		0.00079	ND	0.00079	ND	0.00536		0.00234	
--		Potassium	2.76		2.03		2.85		1.56		1.91		1.83		2.78		2.73	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.00216		0.0000217	ND
--		Sodium	153		111		61.1		29.1		99		35.3		62		144	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.667		0.636		1.15		0.379		0.272		0.338		2.16		1.13	

Table F-1a. (cont.)

		OU3 Samples															
	Sample ID	OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCBOU4	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater	Sample date	3/11/2015		5/27/2015		10/8/2015		11/12/2014		5/28/2015		9/2/2015		11/12/2014		3/16/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	474		489		466		208		254		230		309		307	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.251		0.0106	ND
--	Total Suspended Solids	1.415	ND	1.415	ND	1.415	ND	6		12.4		11.6		119		10.8	
32.0	Nitrate, as N	0.00345	ND	0.00345	ND	0.00345	ND	0.152		0.0701		0.0332		0.251		0.0927	
--	Chloride	300		223		108		50.4		182		62.5		113		237	
--	Sulfate	224		185		259		89		101		83.7		127		154	
--	Alkalinity, as CaCO3	158		189		159		108		105		118		115		116	
--	Total Dissolved Solids	832		848		608		280		452		292		492		664	

Table F-1a. (cont.)

			OU3 Samples															
		Sample ID	OU3-9-SW-SCBOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCOU3BC		OU3-9-SW-SCOU3BC	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater		Sample date	3/16/2015		5/28/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		3/11/2015		3/11/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.004		0.006		0.007		0.005		0.007		0.007		0.006		0.006	
0.000052	c	Arsenic	**0.000**	ND	**0.003**		**0.004**		**0.006**		**0.008**		**0.006**		**0.002**		**0.000**	ND
3.8	n	Barium	0.035		0.037		0.040		0.031		0.051		0.044		0.059		0.059	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0015		0.0008		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0068		0.0067	
--		Calcium	98		92		108		116		107		124		199		201	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.003010	
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0029		0.0030	
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	0.000	ND	0.000	ND	0.000	ND	0.002		0.000	ND	0.005		0.000	ND	0.000	ND
--		Magnesium	16.6		15.3		25.5		28.0		24.0		26.5		52.2		52.2	
0.43	n	Manganese	0.116		0.092		0.287		0.146		0.423		0.410		0.211		0.212	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00216		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00273		0.00366	
--		Potassium	2.72		2.14		2.49		1.72		2.56		2.26		4.24		4.23	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	152.0		109.0		117.0		69.5		67.5		58.0		210.0		213.0	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	0.944		0.333		0.323		0.162		0.157		0.214		1.930		1.930	
		Total water																
20.0	n	Aluminum	0.121		0.171		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.0045		0.00617		0.00772		0.00612		0.00768		0.00659		0.00599		0.00563	
0.000052	c	Arsenic	0.00289		0.00443		0.00708		0.00937		0.011		0.00834		0.00749		0.00434	
3.8	n	Barium	0.0366		0.0387		0.0415		0.0323		0.0524		0.0433		0.0633		0.0619	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00476		0.0031		0.000997		0.000907		0.000171	ND	0.00068		0.00732		0.00722	
--		Calcium	94.7		94		111		118		112		117		200		204	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.0052		0.00518		0.00358		0.00403		0.0022		0.00285		0.00724		0.00543	
14.0	n	Iron	0.218		0.307		0.435		0.343		0.42		0.386		0.873		0.47	
0.015	L	Lead	0.00978		0.018		0.0396		0.0418		0.0247		0.0371		0.0278		0.0135	
--		Magnesium	16.7		15.3		25.4		29.2		26.5		25.1		53.7		53.7	
0.43	n	Manganese	0.119		0.0989		0.304		0.169		0.445		0.397		0.241		0.24	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00241		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00298		0.00299	
--		Potassium	2.76		2.16		2.45		1.76		2.85		2.24		4.44		4.41	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	142		110		120		69		70.7		54.1		200		205	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	1.13		0.435		0.404		0.232		0.196		0.232		2		1.93	

Table F-1a. (cont.)

		OU3 Samples															
	Sample ID	OU3-9-SW-SCBOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCOU3BC		OU3-9-SW-SCOU3BC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater	Sample date	3/16/2015		5/28/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		3/11/2015		3/11/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	305		298		381		416		388		395		721		731	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	4.4		5.6		5.6		4		1.415	ND	1.415	ND	1.415	ND	1.415	ND
32.0	Nitrate, as N	0.101		0.15		0.082		0.0333		0.0272		0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	243		187		208		136		133		97.7		482		501	
--	Sulfate	160		127		166		204		134		216		221		227	
--	Alkalinity, as CaCO3	115		112		132		138		169		154		183		202	
--	Total Dissolved Solids	700		580		720		620		536		676		1250		1360	

Table F-1a. (cont.)

			OU3 Samples															
		Sample ID	OU3-0-SW-SCOU3BC		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater		Sample date	5/27/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		11/12/2014		3/13/2015		5/28/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.003		0.007		0.005		0.006		0.007		0.005		0.007		0.006	
0.000052	c	Arsenic	**0.000**	ND	**0.004**		**0.006**		**0.007**		**0.006**		**0.004**		**0.003**		**0.005**	
3.8	n	Barium	0.110		0.040		0.031		0.048		0.043		0.036		0.038		0.030	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0052		0.0007		0.0002	ND	0.0002	ND	0.0005		0.0002	ND	0.0002	ND	0.0002	ND
--		Calcium	302		108		115		106		116		113		101		107	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0033		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.146		0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	0.000	ND	0.005		0.000	ND	0.000	ND	**0.015**		0.000	ND	0.000	ND	0.000	ND
--		Magnesium	80.7		25.0		28.0		23.6		25.8		23.1		22.3		24.2	
0.43	n	Manganese	0.281		0.266		0.148		0.286		0.336		0.256		0.245		0.140	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00384		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	6.43		2.42		1.75		2.47		2.39		2.56		2.51		1.96	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	304.0		116.0		68.5		67.5		55.5		67.5		126.0		97.9	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	1.150		0.386		0.228		0.143		0.223		0.174		0.402		0.165	
		Total water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.152		0.016	ND	0.016	ND
0.0078	n	Antimony	0.00275		0.00712		0.00617		0.00787		0.00644		0.00796		0.00786		0.00621	
0.000052	c	Arsenic	0.000106	ND	0.00658		0.00907		0.0102		0.00789		0.00885		0.00689		0.00764	
3.8	n	Barium	0.111		0.0399		0.0334		0.0524		0.0422		0.0433		0.0406		0.0318	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00539		0.0013		0.00136		0.000171	ND	0.000761		0.00114		0.0011		0.00102	
--		Calcium	281		112		124		114		111		120		102		110	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00373		0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.00419		0.00295		0.00408		0.00223		0.00279		0.00605		0.00291		0.00265	
14.0	n	Iron	0.128		0.406		0.354		0.341		0.328		0.719		0.436		0.381	
0.015	L	Lead	0.00211		0.0311		0.044		0.0216		0.0351		0.0617		0.0314		0.0261	
--		Magnesium	73.8		25.5		28.1		26.1		25.1		26.8		22.4		24.3	
0.43	n	Manganese	0.278		0.277		0.181		0.315		0.325		0.335		0.265		0.154	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000002595	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00358		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	6.49		2.43		1.75		2.86		2.35		2.43		2.48		1.9	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	292		120		72.7		71.9		52.1		73.1		126		98.6	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	1.15		0.441		0.308		0.186		0.234		0.309		0.469		0.237	

Table F-1a. (cont.)

		OU3 Samples													
	Sample ID	OU3-0-SW-SCOU3BC		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater	Sample date	5/27/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		11/12/2014		3/13/2015		5/28/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	1010		385		425		391		381		410		346		376	
--	Phosphate, Total (as P)	0.0106	ND	1.01		0.0106	ND	0.054		0.0106	ND	0.0614		0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.415	ND	4.8		4.8		1.415	ND	1.415	ND	5.6		5.6		1.415	ND
32.0	Nitrate, as N	0.00345	ND	0.0747		0.027		0.0314		0.00345	ND	0.018		0.0593		0.00345	ND
--	Chloride	826		211		137		127		98.9		133		215		183	
--	Sulfate	155		164		204		129		215		193		175		174	
--	Alkalinity, as CaCO3	264		136		133		181		152		144		129		126	
--	Total Dissolved Solids	2190		680		608		592		664		640		708		672	

Table F-1a. (cont.)

			OU3 Samples															
		Sample ID	OU3-0-SW-SCRFR		OU3-0-SW-SCURTFB Dups ave		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB		OU3-9-SW-SCURTFB		OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Tapwater		Sample date	9/1/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015		9/2/2015		3/10/2015		5/27/2015	
(mg/L)		Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.007		0.005		0.007		0.005		0.005		0.005		**0.008**		0.005	
0.000052	c	Arsenic	**0.007**		**0.005**		**0.006**		**0.007**		**0.008**		**0.008**		**0.004**		**0.005**	
3.8	n	Barium	0.050		0.034		0.034		0.031		0.039		0.041		0.049		0.041	
0.025	n	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0039		0.0020	
--		Calcium	101		110		99		107		92		93		158		153	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0024		0.0030	
14.0	n	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.002		0.000	ND
--		Magnesium	22.0		20.7		20.4		22.7		17.9		17.2		35.9		36.6	
0.43	n	Manganese	**0.442**		0.128		0.102		0.097		0.127		0.129		0.206		0.132	
0.0057	n	Mercury	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	2.76		2.21		2.38		1.98		2.35		2.34		3.18		1.74	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	72.1		62.0		117.0		97.0		59.6		59.9		159.0		104.0	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
6.0	n	Zinc	0.115		0.205		0.231		0.122		0.091		0.096		1.350		0.928	
		Total water																
20.0	n	Aluminum	0.156		0.26		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.00892		0.0068		0.00623		0.00545		0.00514		0.00497		0.00803		0.00527	
0.000052	c	Arsenic	0.0137		0.0073		0.00676		0.00739		0.0099		0.00993		0.00548		0.00591	
3.8	n	Barium	0.0545		0.039		0.0347		0.0343		0.0414		0.0391		0.0492		0.0427	
0.025	n	Beryllium	0.0000119	ND	0.000012	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000986		0.00110		0.000863		0.00111		0.000622		0.00058		0.00467		0.00382	
--		Calcium	103		112		97.4		94.9		98.4		98.2		152		145	
22.0	n	Chromium	0.000436	ND	0.00044	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.000042	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.00529		0.0058		0.00229		0.000216	ND	0.00206		0.00215		0.00338		0.00323	
14.0	n	Iron	0.851		0.43		0.221		0.197		0.275		0.282		0.17		0.046	ND
0.015	L	Lead	0.0653		0.048		0.014		0.0134		0.0177		0.0177		0.0138		0.00553	
--		Magnesium	23.1		23.2		20.5		22.5		19.2		19.3		36		34.1	
0.43	n	Manganese	0.513		0.15		0.105		0.0969		0.155		0.154		0.214		0.134	
0.0057	n	Mercury	0.00000446	ND	0.00000260	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	3.01		2.3		2.38		1.89		2.79		2.85		3.08		1.87	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.000022	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	73.6		65.7		113		84.3		65.8		65.8		155		97.5	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.243		0.33		0.283		0.187		0.166		0.175		1.46		0.957	

Table F-1a. (cont.)

		OU3 Samples												
	Sample ID	OU3-0-SW-SCRFR		OU3-0-SW-SCURTFB Dups ave		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB	OU3-9-SW-SCURTFB		OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3	OU3		OU3		OU3	
Tapwater	Sample date	9/1/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015	9/2/2015		3/10/2015		5/27/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream	Stream		Stream		Stream	
--	Hardness, as CaCO3	353		374		327		330		325	325		528		502	
--	Phosphate, Total (as P)	0.0878		0.054		0.0106	ND	0.0106	ND	0.05	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	8		12.0		1.415	ND	1.415	ND	4	3.6		1.415	ND	1.415	ND
32.0	Nitrate, as N	0.00345	ND	0.22		0.105		0.0122		0.0271	0.0281		0.00345	ND	0.00345	ND
--	Chloride	137		126		190		178		123	122		346		207	
--	Sulfate	140		184		153		169		130	132		215		214	
--	Alkalinity, as CaCO3	159		130		124		131		135	135		175		186	
--	Total Dissolved Solids	616		484		644		644		472	532		1040		812	

Table F-1a. (cont.)

			OU3 Samples			
		Sample ID	OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
		Operable Unit	OU3		OU3	
Tapwater		Sample date	8/31/2015		10/8/2015	
(mg/L)		Habitat	Stream		Stream	
		Dissolved water				
20.0	n	Aluminum	0.016	ND	0.016	ND
0.0078	n	Antimony	**0.011**		**0.018**	
0.000052	c	Arsenic	**0.015**		**0.008**	
3.8	n	Barium	0.049		0.044	
0.025	n	Beryllium	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	0.0002	ND	0.0006	
--		Calcium	127		181	
22.0	n	Chromium	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND
0.80	n	Copper	0.0034		0.0032	
14.0	n	Iron	0.046	ND	0.046	ND
0.015	L	Lead	0.004		0.003	
--		Magnesium	32.2		45.4	
0.43	n	Manganese	0.141		0.158	
0.0057	n	Mercury	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND
--		Potassium	3.89		5.13	
0.10	n	Selenium	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND
--		Sodium	77.4		93.9	
0.00020	n	Thallium	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.001	ND	0.001	ND
6.0	n	Zinc	0.137		0.732	
		Total water				
20.0	n	Aluminum	0.016	ND	0.016	ND
0.0078	n	Antimony	0.0114		0.0186	
0.000052	c	Arsenic	0.0179		0.0102	
3.8	n	Barium	0.0493		0.0438	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000581		0.00124	
--		Calcium	135		187	
22.0	n	Chromium	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.00419		0.00399	
14.0	n	Iron	0.199		0.114	
0.015	L	Lead	0.0253		0.0123	
--		Magnesium	35.5		47.1	
0.43	n	Manganese	0.143		0.159	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND
--		Potassium	4.26		4.95	
0.10	n	Selenium	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND
--		Sodium	86		96.2	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.159		0.797	

Table F-1a. (cont.)

		OU3 Samples			
	Sample ID	OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
	Operable Unit	OU3		OU3	
Tapwater	Sample date	8/31/2015		10/8/2015	
(mg/L)	Habitat	Stream		Stream	
--	Hardness, as CaCO3	483		660	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.415	ND	1.415	ND
32.0	Nitrate, as N	0.0199		0.00345	ND
--	Chloride	181		198	
--	Sulfate	178		321	
--	Alkalinity, as CaCO3	184		204	
--	Total Dissolved Solids	740		908	

Notes:
Results in mg/L
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Samples were collected quarterly from November 2014 to October 2015
Samples analyzed for dissolved metals were field filtered by sample collectors
UCLM calculated using Excel confidence function (CONFIDENCE(alpha,standard_dev,size))

Key:
-- = no tapwater screening value available
ID = Identification
mg/L = milligrams per liter
ND = not detected
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3
SW = Surface Water

Table F-1b. Screening results for surface water samples compared with EPA MCL screening values

											OU2 Samples					
	Sample ID										OU2-0-SW-AIRF		OU2-0-SW-AIRF		OU2-0-SW-AIRF	
	Operable Unit										OU2		OU2		OU2	
MCL	Sample date										3/9/2015		5/26/2015		8/31/2015	
(mg/L)	Habitat	N	count of NDs	% detected	Minimum	Maximum	Average	UCLM	Stdev	GeoMean	Stream		Stream		Stream	
	Dissolved water															
--	Aluminum	91	91	0%	0.016	0.016	0.016	--	1.0E-17	0.016	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	91	4	95.6%	0.000474	0.0209	0.0071	0.00090	4.4E-03	0.006	**0.008**		0.006		**0.008**	
0.010	Arsenic	91	9	90.1%	0.000106	0.022	0.0065	0.0010	4.7E-03	0.004	0.006		0.006		0.009	
2.0	Barium	91	0	100%	0.0195	0.397	0.057	0.010	4.7E-02	0.049	0.053		0.049		0.047	
0.0040	Beryllium	91	91	0%	0.0000119	0.0000119	0.0000119	--	1.4E-20	0.000012	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	91	46	49.5%	0.000171	0.00927	0.0012	0.00035	1.7E-03	0.00053	0.004		0.002		0.00017	ND
--	Calcium	91	0	100%	46	411	131	11.2	5.4E+01	122	146		145		106	
0.10	Chromium	91	90	1.1%	0.000436	0.00301	0.00046	0.00006	2.7E-04	0.00045	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	91	91	0%	0.0000416	0.0000416	0.0000416	--	5.5E-20	0.0000416	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	91	51	44.0%	0.000216	0.00882	0.0020	0.00049	2.4E-03	0.00077	0.0077		0.0039		0.0087	
--	Iron	91	84	7.7%	0.046	0.234	0.054	0.0061	2.9E-02	0.050	0.150		0.046	ND	0.046	ND
0.015	Lead	91	46	49.5%	0.000214	0.0265	0.0029	0.00091	4.4E-03	0.0010	**0.027**		0.004		0.009	
--	Magnesium	91	0	100%	11.1	88.1	30.7	3.0	1.5E+01	27.8	35.1		34.9		27.9	
--	Manganese	91	1	98.9%	0.0006	1.03	0.20	0.036	1.8E-01	0.14	0.209		0.159		0.052	
0.0020	Mercury	91	91	0%	0.0000026	0.00000446	0.0000044	--	4.3E-07	0.0000043	0.0000045	ND	0.0000045	ND	0.0000045	ND
--	Nickel	91	82	9.9%	0.00079	0.00384	0.00097	0.00012	5.9E-04	0.00089	0.00079	ND	0.00079	ND	0.00200	
--	Potassium	91	0	100%	1.4	18.2	4.4	0.81	3.9E+00	3.4	7.26		4.49		16.60	
0.050	Selenium	91	91	0%	0.000135	0.000135	0.000135	--	1.9E-19	0.00014	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	91	91	0%	0.0000217	0.0000217	0.0000217	--	2.4E-20	0.0000217	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	91	0	100%	18.5	356	112	13.0	6.3E+01	95.2	185.0		135.0		203.0	
0.0020	Thallium	91	91	0%	0.0000217	0.0000217	0.0000217	--	2.4E-20	0.0000217	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	91	90	1.1%	0.00053	0.00572	0.00059	0.00011	5.4E-04	0.00054	0.001	ND	0.001	ND	0.001	ND
--	Zinc	91	2	97.8%	0.0045	3.15	0.55	0.12	5.6E-01	0.31	1.510		0.880		0.140	
	Total water															
--	Aluminum	91	75	17.6%	0.016	2.51	0.073	0.055	2.7E-01	0.025	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	91	3	96.7%	0.000474	0.0212	0.0078	0.00092	4.5E-03	0.0065	0.00851		0.00734		0.00882	
0.010	Arsenic	91	4	95.6%	0.000106	0.0262	0.0088	0.0011	5.6E-03	0.0065	0.00677		0.00811		0.0111	
2.0	Barium	91	0	100%	0.0202	0.397	0.059	0.010	4.6E-02	0.051	0.0521		0.0496		0.0458	
0.0040	Beryllium	91	91	0%	0.0000119	0.0000119	0.0000119	--	1.4E-20	0.0000119	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	91	15	83.5%	0.000171	0.022	0.0022	0.0006	2.9E-03	0.0012	0.00423		0.00396		0.000171	ND
--	Calcium	91	0	100%	45.1	394	131	10.6	5.2E+01	122	146		151		110	
0.10	Chromium	91	89	2.2%	0.000436	0.00516	0.00052	0.00012	6.0E-04	0.00046	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	91	91	0%	0.0000416	0.0000416	0.0000416	--	5.5E-20	0.0000416	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	91	8	91.2%	0.000216	0.044	0.0053	0.0011	5.2E-03	0.0036	0.00822		0.00811		0.0116	
--	Iron	91	13	85.7%	0.046	4.12	0.31	0.092	4.5E-01	0.21	0.199		0.144		0.046	ND
0.015	Lead	91	4	95.6%	0.000214	0.24	0.029	0.0060	2.9E-02	0.018	0.0384		0.0421		0.0383	
--	Magnesium	91	0	100%	10.5	83.5	30.9	2.8	1.4E+01	28.2	34.8		35.3		29.4	
--	Manganese	91	0	100%	0.00385	1.07	0.22	0.038	1.8E-01	0.16	0.22		0.182		0.0539	
0.0020	Mercury	91	88	3.3%	0.000002595	0.000328	0.000011	8.3E-06	4.0E-05	0.0000049	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	91	82	9.9%	0.00079	0.00536	0.0010	0.00015	7.5E-04	0.00090	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	91	0	100%	1.56	19.5	4.5	0.83	4.1E+00	3.5	7.18		4.65		17.5	
0.050	Selenium	91	91	0%	0.000135	0.000135	0.000135	--	1.9E-19	0.000135	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	91	90	1.1%	0.0000217	0.00216	0.000045	0.000046	2.2E-04	0.000023	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	91	0	100%	17	317	113	12.8	6.2E+01	95.9	202		136		221	
0.0020	Thallium	91	91	0%	0.0000217	0.0000217	0.0000217	--	2.4E-20	0.0000217	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	91	89	2.2%	0.00053	0.00691	0.00065	0.00017	8.2E-04	0.00056	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	91	0	100%	0.0118	3.15	0.63	0.12	5.9E-01	0.40	1.44		1.05		0.172	

Table F-1b. (cont.)

											OU2 Samples			
	Sample ID										OU2-0-SW-AIRF	OU2-0-SW-AIRF	OU2-0-SW-AIRF	
	Operable Unit										OU2	OU2	OU2	
MCL	Sample date										3/9/2015	5/26/2015	8/31/2015	
(mg/L)	Habitat	**N**	**count of NDs**	**% detected**	**Minimum**	**Maximum**	**Average**	**UCLM**	**Stdev**	**GeoMean**	Stream	Stream	Stream	
--	Hardness, as CaCO3	91	0	100%	161	1330	453	38.0	1.9E+02	422	508	523	396	
--	Phosphate, Total (as P)	91	56	38.5%	0.0106	1.66	0.18	0.078	3.8E-01	0.034	0.576	0.269	1.2	
--	Total Suspended Solids	91	44	51.6%	1.415	119	5.0	2.6	1.2E+01	2.9	4.8	1.415	ND 1.415	ND
10.0	Nitrate, as N	91	32	64.8%	0.00345	23.9	2.1	1.1	5.4E+00	0.055	7.74	4.25	**19.1**	
--	Chloride	91	0	100%	32.3	939	235	31.5	1.5E+02	196	367	267	393	
--	Sulfate	91	0	100%	12.6	723	178	19.2	9.3E+01	152	194	215	123	
--	Alkalinity, as CaCO3	91	0	100%	105	267	160	7.0	3.4E+01	157	161	170	150	
--	Total Dissolved Solids	91	0	100%	256	2190	818	74.7	3.6E+02	747	1260	1020	1040	

Table F-1b. (cont.)

		OU2 Samples															
	Sample ID	OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
MCL	Sample date	3/10/2015		5/26/2015		8/31/2015		10/8/2015		3/9/2015		5/26/2015		8/31/2015		10/8/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	**0.009**		0.006		**0.019**		**0.021**		**0.008**		**0.006**		**0.012**		**0.017**	
0.010	Arsenic	0.004		0.005		**0.022**		**0.013**		0.005		0.006		**0.013**		**0.016**	
2.0	Barium	0.048		0.043		0.053		0.055		0.053		0.048		0.047		0.053	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.005		0.003		0.00017	ND	0.0005		0.003		0.002		0.0002	ND	0.0006	
--	Calcium	159		144		128		184		144		146		107		143	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0024		0.0032		0.0054		0.0042		0.0038		0.0038		0.0082		0.0063	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	Lead	0.003		0.003		0.003		0.008		0.003		0.003		0.009		0.005	
--	Magnesium	36.1		35.0		34.5		47.2		34.8		35.2		28.0		34.7	
--	Manganese	0.249		0.157		0.305		0.360		0.206		0.185		0.066		0.251	
0.0020	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.23		1.87		4.61		5.18		8.15		3.92		16.00		10.50	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	159.0		102.0		81.8		98.2		186.0		126.0		196.0		143.0	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	1.790		0.827		0.282		0.658		1.410		0.972		0.168		0.461	
	Total water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.00971		0.00658		0.0196		0.0212		0.00857		0.00852		0.0133		0.0189	
0.010	Arsenic	0.00651		0.0075		0.0262		0.0147		0.00741		0.00823		0.0134		0.0207	
2.0	Barium	0.0496		0.0442		0.0528		0.0545		0.0513		0.0497		0.0485		0.0551	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00544		0.00391		0.000712		0.00106		0.00423		0.00453		0.000171	ND	0.00123	
--	Calcium	157		149		131		188		144		156		113		145	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.00492		0.0061		0.00678		0.00592		0.00988		0.00905		0.011		0.0115	
--	Iron	0.159		0.046	ND	0.226		0.162		0.237		0.151		0.101		0.234	
0.015	Lead	0.0284		0.0227		0.0411		0.0479		0.0527		0.0587		0.0387		0.0755	
--	Magnesium	36.8		35.6		37.4		48		34		36.7		30.7		34.1	
--	Manganese	0.272		0.182		0.306		0.361		0.224		0.216		0.0679		0.264	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000155	
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.17		1.85		4.97		5.21		7.97		4.06		17.5		10.6	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	159		103		88.2		99.7		206		133		219		151	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	2.02		0.949		0.327		0.725		1.43		1.18		0.199		0.596	

Table F-1b. (cont.)

		OU2 Samples															
	Sample ID	OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
MCL	Sample date	3/10/2015		5/26/2015		8/31/2015		10/8/2015		3/9/2015		5/26/2015		8/31/2015		10/8/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	545		518		482		668		500		540		409		501	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.637		0.256		1.17		0.771	
--	Total Suspended Solids	4		1.415	ND	1.415	ND	1.415	ND	6.4		4		1.415	ND	3.2	
10.0	Nitrate, as N	0.00345	ND	0.00345	ND	0.0163		0.00345	ND	8.44		3.58		**17.9**		**10.9**	
--	Chloride	344		221		197		209		370		289		381		263	
--	Sulfate	209		222		176		320		176		216		128		221	
--	Alkalinity, as CaCO3	170		182		184		204		149		175		150		164	
--	Total Dissolved Solids	1070		860		768		1020		1180		1140		964		1030	

Table F-1b. (cont.)

		OU2 Samples															
	Sample ID	OU2-0-SW-IRF		OU2-0-SW-IRF		OU2-0-SW-PPTRIB		OU2-0-SW-SC1		OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR Dups ave		OU2-0-SW-SCBNPRR	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
MCL	Sample date	3/9/2015		5/26/2015		3/9/2015		10/8/2015		3/11/2015		5/27/2015		9/1/2015		10/8/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.004		0.006		0.000	ND	0.005		**0.007**		0.005		**0.007**		**0.018**	
0.010	Arsenic	0.002		0.006		0.000	ND	**0.016**		0.004		0.005		0.010		0.009	
2.0	Barium	0.030		0.049		0.158		0.145		0.047		0.042		0.046		0.042	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.0002	ND	0.0022		0.0002	ND	0.0002	ND	0.003		0.002		0.0002	ND	0.0008	
--	Calcium	264		144		69		74		151		159		127		180	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0002	ND	0.0039		0.0002	ND	0.0002	ND	0.0024		0.0022		0.0024		0.0033	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.114		0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	Lead	0.000	ND	0.003		0.000	ND	0.000	ND	0.002		0.000	ND	0.003		0.007	
--	Magnesium	64.9		33.9		15.2		18.7		39.0		37.0		32.1		46.3	
--	Manganese	0.538		0.163		0.192		0.100		0.201		0.112		0.105		0.114	
0.0020	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	12.70		4.40		10.30		4.70		3.31		1.74		3.87		5.00	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	75.2		131.0		32.4		32.6		157.0		108.0		73.7		94.7	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.064		0.895		0.005	ND	0.038		1.340		0.689		0.185		0.672	
	Total water																
--	Aluminum	0.016	ND	0.016	ND	0.12		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.00378		0.00732		0.000474	ND	0.00589		0.00776		0.00489		0.00770		0.0183	
0.010	Arsenic	0.00267		0.00844		0.000106	ND	0.022		0.00568		0.00669		0.0111		0.01	
2.0	Barium	0.0298		0.0509		0.142		0.15		0.0465		0.0428		0.048		0.0424	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000171	ND	0.00421		0.000171	ND	0.000171	ND	0.00439		0.00281		0.000512		0.00105	
--	Calcium	265		152		67.5		74.7		150		147		134		184	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.00203		0.00836		0.000216	ND	0.000216	ND	0.0046		0.0032		0.003210		0.00367	
--	Iron	0.228		0.149		0.396		0.285		0.229		0.046	ND	0.116		0.105	
0.015	Lead	0.00356		0.0471		0.000214	ND	0.0243		0.0233		0.0106		0.0121		0.0133	
--	Magnesium	66.3		36.7		15		18.4		36.3		34.6		34.6		46.2	
--	Manganese	0.556		0.192		0.187		0.112		0.218		0.114		0.11		0.119	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	12.7		4.66		10.1		4.67		3.32		1.72		4.17		4.98	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	84		138		34.9		31.6		153		101		78.2		94.2	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.0722		1.07		0.0131		0.0705		1.28		0.703		0.213		0.711	

Table F-1b. (cont.)

		OU2 Samples											
	Sample ID	OU2-0-SW-IRF	OU2-0-SW-IRF	OU2-0-SW-PPTRIB		OU2-0-SW-SC1	OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR Dups ave		OU2-0-SW-SCBNPRR	
	Operable Unit	OU2	OU2	OU2		OU2	OU2		OU2		OU2		OU2	
MCL	Sample date	3/9/2015	5/26/2015	3/9/2015		10/8/2015	3/11/2015		5/27/2015		9/1/2015		10/8/2015	
(mg/L)	Habitat	Stream	Stream	Stream		Stream	Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	935	531	230		262	525		509		477		649	
--	Phosphate, Total (as P)	0.265	0.3	0.253		0.0548	0.0106	ND	0.0106	ND	0.035		0.0106	ND
--	Total Suspended Solids	7.6	3.2	1.415	ND	3.6	1.415	ND	1.415	ND	1.42	ND	1.415	ND
10.0	Nitrate, as N	1.31	3.89	0.943		0.318	0.00345	ND	0.00345	ND	0.0192		0.00345	ND
--	Chloride	309	259	90.4		89.5	328		210		169		191	
--	Sulfate	460	206	12.6		32.1	214		212		175		313	
--	Alkalinity, as CaCO3	159	173	167		179	177		189		194		199	
--	Total Dissolved Solids	1480	948	408		388	904		884		672		968	

Table F-1b. (cont.)

		OU2 Samples															
	Sample ID	OU2-0-SW-SCI		OU2-0-SW-SCI		OU2-0-SW-SCI		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCWWT Dups ave	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
MCL	Sample date	3/9/2015		5/26/2015		8/31/2015		3/9/2015		5/26/2015		8/31/2015		10/8/2015		3/10/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.005		0.005		0.005		**0.010**		**0.007**		**0.018**		**0.020**		0.000	ND
0.010	Arsenic	**0.014**		**0.012**		**0.013**		0.007		0.008		**0.020**		**0.022**		0.003	
2.0	Barium	0.120		0.130		0.139		0.063		0.056		0.077		0.077		0.060	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.0002	ND	0.0002	ND	0.0002	ND	0.0036		0.0028		0.0002	ND	0.0007		0.0006	
--	Calcium	64		70		60		141		146		96		132		116	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0027		0.0042		0.0057		0.0055		0.0077	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.119		0.046	ND
0.015	Lead	0.003		0.004		0.005		0.000	ND	0.010		0.006		**0.016**		0.006	
--	Magnesium	16.1		16.3		15.0		33.9		34.6		24.8		31.9		28.8	
--	Manganese	0.111		0.069		0.029		0.264		0.214		0.108		0.298		0.048	
0.0020	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.84		2.79		2.13		6.05		3.59		12.70		9.41		14.80	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	21.7		25.8		24.2		153.0		115.0		149.5		120.5		213.5	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.048		0.041		0.065		1.710		1.095		0.296		0.513		0.260	
	Total water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.15	
0.0060	Antimony	0.00669		0.00563		0.00584		0.0108		0.0087		0.0198		0.0201		0.0023	
0.010	Arsenic	0.0202		0.0132		0.0143		0.010		0.0098		0.0208		0.025		0.0037	
2.0	Barium	0.119		0.129		0.136		0.062		0.057		0.079		0.078		0.064	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	0.00454		0.00434		0.00057		0.00103		0.00086	
--	Calcium	62.7		68.6		61.7		139		146		99.4		134		114	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.00449		0.0023		0.00217		0.00843		0.00832		0.00731		0.00794		0.014	
--	Iron	0.592		0.224		0.158		0.335		0.208		0.130		0.301		0.13	
0.015	Lead	0.0665		0.0348		0.0248		0.0564		0.0487		0.0327		0.0552		0.026	
--	Magnesium	15.2		16.6		16.3		33.7		34.1		26.6		31.6		29.4	
--	Manganese	0.127		0.0758		0.0328		0.28		0.24		0.11		0.30		0.057	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.77		2.81		2.32		5.68		3.62		13.6		9.3		15.1	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	23.2		25.3		26.3		166		113		161		121		214	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.0052		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.133		0.0753		0.095		1.74		1.25		0.32		0.58		0.32	

Table F-1b. (cont.)

		OU2 Samples									
	Sample ID	OU2-0-SW-SCI	OU2-0-SW-SCI		OU2-0-SW-SCI		OU2-0-SW-SCI80 Dups ave	OU2-0-SW-SCI80 Dups ave	OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave	OU2-0-SW-SCWWT Dups ave
	Operable Unit	OU2	OU2		OU2		OU2	OU2	OU2		OU2	OU2
MCL	Sample date	3/9/2015	5/26/2015		8/31/2015		3/9/2015	5/26/2015	8/31/2015		10/8/2015	3/10/2015
(mg/L)	Habitat	Stream	Stream		Stream		Stream	Stream	Stream		Stream	Stream
--	Hardness, as CaCO3	219	240		221		486	505	358		463	405
--	Phosphate, Total (as P)	0.122	0.0579		0.0106	ND	0.347	0.181	0.864		0.54	1.62
--	Total Suspended Solids	6	1.415	ND	1.415	ND	4.20	2.71	1.42	ND	2.31	12.0
10.0	Nitrate, as N	0.582	0.52		0.0129		4.71	2.11	**13.6**		6.8	**20.6**
--	Chloride	65.5	71.5		63.7		331	240	300		222	392
--	Sulfate	25.6	26.5		19.1		173	208	98		188	141
--	Alkalinity, as CaCO3	159	163		161		165	182	161		180	133
--	Total Dissolved Solids	332	408		312		1055	942	862		860	1065

Table F-1b. (cont.)

		OU2 Samples											
	Sample ID	OU2-0-SW-SCWWT		OU2-0-SW-SCWWT		OU2-0-SW-SCWWT		OU2-0-SW-SGDINF		OU2-0-SW-SPRRP		OU2-0-SW-STRGD	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2	
MCL	Sample date	5/26/2015		8/31/2015		10/8/2015		3/10/2015		3/10/2015		3/10/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water												
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.002		0.002		0.003		**0.012**		**0.009**		0.003	
0.010	Arsenic	0.003		0.004		0.004		0.009		**0.011**		0.003	
2.0	Barium	0.065		0.049		0.051		0.031		0.044		0.076	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.0009		0.0002	ND	0.0002	ND	**0.0093**		0.0002	ND	0.0018	
--	Calcium	138		106		99		411		46		219	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0057		0.0083		0.0088		0.0041		0.0002	ND	0.0002	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.125		0.046	ND
0.015	Lead	0.002		0.005		0.004		0.000	ND	0.004		0.000	ND
--	Magnesium	34.5		27.6		23.6		88.1		12.3		54.2	
--	Manganese	0.035		0.013		0.011		0.335		0.053		0.171	
0.0020	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00284		0.00079	ND	0.00079	ND
--	Potassium	13.30		18.20		16.70		2.37		3.66		2.86	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	240.0		224.0		210.0		107.0		19.5		172.0	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.299		0.069		0.099		3.150		0.485		0.668	
	Total water												
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.00363		0.00282		0.00383		0.0124		0.00934		0.00261	
0.010	Arsenic	0.00425		0.00451		0.00602		0.00943		0.0192		0.00412	
2.0	Barium	0.0648		0.0491		0.0531		0.0318		0.0454		0.0748	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00124		0.000171	ND	0.000815		0.00928		0.00106		0.00174	
--	Calcium	141		110		103		394		45.1		208	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.0117		0.011		0.0149		0.00465		0.00252		0.000216	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.57		0.144	
0.015	Lead	0.0315		0.0171		0.0378		0.000214	ND	0.0213		0.000214	ND
--	Magnesium	34.4		29.3		23.9		83.5		12		53.4	
--	Manganese	0.0505		0.015		0.0221		0.341		0.062		0.181	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00203		0.00079	ND	0.00079	ND	0.00298		0.00079	ND	0.00079	ND
--	Potassium	13.7		19.5		17.1		2.25		3.38		2.77	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	240		246		217		106		17		166	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.371		0.0902		0.198		3.15		0.607		0.711	

Table F-1b. (cont.)

		OU2 Samples									
	Sample ID	OU2-0-SW-SCWWT	OU2-0-SW-SCWWT		OU2-0-SW-SCWWT	OU2-0-SW-SGDINF		OU2-0-SW-SPRRP		OU2-0-SW-STRGD	
	Operable Unit	OU2	OU2		OU2	OU2		OU2		OU2	
MCL	Sample date	5/26/2015	8/31/2015		10/8/2015	3/10/2015		3/10/2015		3/10/2015	
(mg/L)	Habitat	Stream	Stream		Stream	Stream		Stream		Stream	
--	Hardness, as CaCO3	493	395		355	1330		162		738	
--	Phosphate, Total (as P)	1.3	1.45		1.66	0.0106	ND	0.0548		0.0106	ND
--	Total Suspended Solids	6	1.415	ND	4.8	4.4		1.415	ND	1.415	ND
10.0	Nitrate, as N	**17.2**	**22.9**		**23.9**	0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	448	427		329	387		32.3		532	
--	Sulfate	187	117		111	723		31.8		111	
--	Alkalinity, as CaCO3	136	145		139	267		127		249	
--	Total Dissolved Solids	1270	1100		1060	1730		352		1390	

Table F-1b. (cont.)

		OU3 Samples															
	Sample ID	OU3-0-SW-ASCAOU4		OU3-0-SW-HS		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-NGCF		OU3-0-SW-NPCWR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	3/16/2015		3/11/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015		3/11/2015		3/10/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.005		0.000	ND	0.005		0.005		0.006		0.004		0.000	ND	**0.008**	
0.010	Arsenic	0.003		0.000	ND	0.000	ND	0.003		0.003		0.000	ND	0.000	ND	0.004	
2.0	Barium	0.034		0.132		0.022		0.032		0.037		0.029		0.397		0.049	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.0022		0.0002	ND	0.0005		0.0015		0.0007		0.0002	ND	0.0002	ND	0.0044	
--	Calcium	67		48		94		87		94		88		269		160	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0031		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0024	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	Lead	0.002		0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.003	
--	Magnesium	13.5		11.4		14.2		15.4		15.3		13.9		80.1		36.3	
--	Manganese	0.046		0.001	ND	0.088		0.069		0.100		0.153		0.017		0.244	
0.0020	Mercury	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00212		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.89		3.51		2.15		2.48		2.21		1.88		11.00		3.14	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	104.0		18.5		60.4		110.0		112.0		58.9		356.0		159.0	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.006		0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.544		0.005	ND	0.610		0.542		0.305		0.117		0.010		1.670	
	Total water																
--	Aluminum	0.226		0.138		0.016	ND	0.016	ND	0.016	ND	0.207		0.016	ND	0.016	ND
0.0060	Antimony	0.00539		0.000474	ND	0.0054		0.00532		0.00597		0.00439		0.000474	ND	0.00898	
0.010	Arsenic	0.00383		0.000106	ND	0.00282		0.00321		0.00383		0.00292		0.000106	ND	0.00609	
2.0	Barium	0.037		0.133		0.0236		0.0319		0.039		0.0301		0.397		0.0504	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00292		0.000171	ND	0.0029		0.00301		0.00294		0.00201		0.000171	ND	0.00534	
--	Calcium	70.8		47.1		92.9		85.4		96.6		95		252		153	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.00924		0.000216	ND	0.00343		0.00394		0.00445		0.00362		0.000216	ND	0.00459	
--	Iron	0.339		0.211		0.144		0.144		0.242		0.439		0.046	ND	0.176	
0.015	Lead	0.0166		0.00587		0.00744		0.00713		0.0138		0.0145		0.000214	ND	0.0245	
--	Magnesium	13.3		10.5		15.5		15.4		15.7		15		74.3		37	
--	Manganese	0.0551		0.00385		0.0924		0.0666		0.108		0.162		0.0174		0.291	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.000002595	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.98		3.5		2.23		2.49		2.23		2.42		10.1		3.21	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	109		17.5		61.7		109		112		66		317		156	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00691		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.688		0.0118		0.724		0.6		0.411		0.373		0.0165		1.85	

Table F-1b. (cont.)

		OU3 Samples													
	Sample ID	OU3-0-SW-ASCAOU4		OU3-0-SW-HS		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-NGCF		OU3-0-SW-NPCWR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	3/16/2015		3/11/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015		3/11/2015		3/10/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	232		161		296		277		306		299		934		536	
--	Phosphate, Total (as P)	0.0106	ND	0.125		0.0106	ND	0.0106	ND	0.0106	ND	0.0713		0.0106	ND	0.0106	ND
--	Total Suspended Solids	6.4		9.2		3.6		3.6		3.6		7.2		1.415	ND	4.4	
10.0	Nitrate, as N	0.0109		0.76		0.253		0.0804		0.115		0.016		0.00345	ND	0.00345	ND
--	Chloride	189		44.1		112		180		198		117		939		349	
--	Sulfate	93.1		14.2		166		135		137		113		58.3		221	
--	Alkalinity, as CaCO3	107		116		114		120		108		130		234		179	
--	Total Dissolved Solids	468		256		400		576		628		448		2140		1080	

Table F-1b. (cont.)

		OU3 Samples															
	Sample ID	OU3-0-SW-NPCWR Dups ave		OU3-0-SW-NPCWR		OU3-0-SW-NPCWR		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC248AC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	5/27/2015		8/31/2015		10/8/2015		3/11/2015		5/27/2015		9/1/2015		10/8/2015		3/13/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.006		**0.017**		**0.020**		**0.007**		0.006		**0.008**		**0.007**		**0.006**	
0.010	Arsenic	0.005		**0.017**		**0.010**		0.003		0.007		0.009		0.007		0.003	
2.0	Barium	0.045		0.053		0.051		0.044		0.034		0.054		0.044		0.042	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.0037		0.0002	ND	0.0005		0.0020		0.0016		0.0002	ND	0.0002	ND	0.0002	ND
--	Calcium	156		130		180		136		131		118		131		118	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0029		0.0041		0.0035		0.0002	ND	0.0024		0.0002	ND	0.0002	ND	0.0002	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.234		0.046	ND	0.046	ND	0.046	ND
0.015	Lead	0.000	ND	0.004		0.005		0.000	ND	**0.021**		0.003		0.004		0.000	ND
--	Magnesium	36.8		34.7		46.2		32.5		31.6		29.5		29.7		26.8	
--	Manganese	0.197		0.288		0.292		0.062		0.152		0.459		0.193		0.173	
0.0020	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.74		4.58		5.13		2.70		1.58		2.70		2.20		2.41	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	107.0		81.3		94.8		155.0		86.4		68.6		51.3		131.0	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	1.455		0.202		0.638		0.549		0.287		0.054		0.105		0.425	
	Total water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.0061		0.0174		0.0198		0.00633		0.00559		0.00929		0.0088		0.0063	
0.010	Arsenic	0.0062		0.0202		0.0135		0.00372		0.00854		0.0138		0.00953		0.00422	
2.0	Barium	0.046		0.0528		0.0517		0.0425		0.0351		0.0562		0.0466		0.0439	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00593		0.000559		0.00119		0.00226		0.00172		0.000586		0.000682		0.000929	
--	Calcium	150		134		181		132		120		126		125		119	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.0053		0.00721		0.0049		0.00203		0.0044		0.00357		0.00265		0.00208	
--	Iron	0.046	ND	0.173		0.146		0.152		0.306		0.576		0.311		0.211	
0.015	Lead	0.0076		0.0272		0.0264		0.00707		0.0332		0.0612		0.0369		0.0152	
--	Magnesium	35.2		37.4		46.1		31		29.2		32.4		29.6		26.9	
--	Manganese	0.203		0.292		0.305		0.0796		0.171		0.502		0.223		0.188	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.9		5		5		2.59		1.7		2.89		2.23		2.38	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	103		87.8		95.3		144		78.6		74		48.6		131	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	1.49		0.238		0.711		0.537		0.316		0.143		0.166		0.454	

Table F-1b. (cont.)

		OU3 Samples														
	Sample ID	OU3-0-SW-NPCWR Dups ave		OU3-0-SW-NPCWR		OU3-0-SW-NPCWR		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC248AC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	5/27/2015		8/31/2015		10/8/2015		3/11/2015		5/27/2015		9/1/2015		10/8/2015		3/13/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	519		488		642		459		420		449		435		407	
--	Phosphate, Total (as P)	0.011	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0549		0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.4	ND	1.415	ND	1.415	ND	1.415	ND	5.2		5.6		1.415	ND	4.8	
10.0	Nitrate, as N	0.0035	ND	0.0312		0.00345	ND	0.00345	ND	0.00345	ND	0.0218		0.00345	ND	0.0815	
--	Chloride	219		199		212		285		157		156		93.4		235	
--	Sulfate	223		184		321		206		212		156		241		176	
--	Alkalinity, as CaCO3	186		189		203		138		133		184		162		134	
--	Total Dissolved Solids	902		712		1000		816		648		608		616		792	

Table F-1b. (cont.)

		OU3 Samples															
	Sample ID	OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC		OU3-0-SW-SC248BC		OU3-9-SW-SC248BC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	5/25/2015		9/1/2015		10/9/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		10/9/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.004		**0.006**		**0.006**		0.005		0.005		**0.007**		0.006		**0.006**	
0.010	Arsenic	0.005		0.010		0.009		0.004		0.005		0.010		0.006		0.006	
2.0	Barium	0.057		0.167		0.121		0.039		0.033		0.052		0.045		0.047	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--	Calcium	132		192		205		159		119		118		128		131	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--	Iron	0.046	ND	0.046	ND	0.154		0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	Lead	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.002		0.004		0.005	
--	Magnesium	31.6		46.4		48.1		37.3		29.8		28.5		31.3		29.2	
--	Manganese	0.598		1.030		0.968		0.489		0.200		0.481		0.411		0.409	
0.0020	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.68		2.71		2.03		2.57		1.66		2.56		2.32		2.31	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	94.8		215.0		172.0		112.0		70.2		68.6		57.2		57.4	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.309		0.852		0.672		0.365		0.235		0.087		0.169		0.174	
	Total water																
--	Aluminum	0.42		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.165		0.016	ND	0.016	ND
0.0060	Antimony	0.00506		0.00723		0.00593		0.0055		0.0056		0.0101		0.00612		0.00659	
0.010	Arsenic	0.00872		0.0135		0.0112		0.0068		0.0076		0.0158		0.00842		0.00848	
2.0	Barium	0.0643		0.173		0.121		0.041		0.033		0.0574		0.046		0.0456	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00124		0.000171	ND	0.000171	ND	0.00102		0.00118		0.00127		0.000614		0.000631	
--	Calcium	121		201		186		160		111		126		123		125	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.00494		0.000216	ND	0.000216	ND	0.0023		0.0029		0.00678		0.00273		0.00293	
--	Iron	0.806		0.351		0.374		0.468		0.284		0.813		0.407		0.402	
0.015	Lead	0.0317		0.00555		0.00712		0.0244		0.0289		0.101		0.038		0.0372	
--	Magnesium	32		48.1		43.9		38.1		29.4		31.2		28.7		27.8	
--	Manganese	0.658		1.07		0.93		0.562		0.21		0.55		0.4		0.403	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000155		0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.84		2.97		2.06		2.6		1.6		2.93		2.28		2.25	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	85.5		225		159		114		64.1		73.5		53.5		54.4	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.412		0.927		0.662		0.42		0.29		0.278		0.211		0.212	

Table F-1b. (cont.)

		OU3 Samples													
	Sample ID	OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC		OU3-0-SW-SC248BC		OU3-9-SW-SC248BC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	5/25/2015		9/1/2015		10/9/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		10/9/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	435		700		644		557		397		444		425		428	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.035		0.011	ND	0.0718		0.0106	ND	0.0106	ND
--	Total Suspended Solids	16.4		1.415	ND	1.415	ND	2.7		3.4		7.2		1.415	ND	1.415	ND
10.0	Nitrate, as N	0.0587		0.0619		0.00345	ND	0.060		0.013		0.013		0.00345	ND	0.00345	ND
--	Chloride	210		608		397		224		144		140		106		104	
--	Sulfate	198		146		233		267		214		145		232		231	
--	Alkalinity, as CaCO3	156		208		210		161		135		181		161		161	
--	Total Dissolved Solids	768		1550		1230		914		642		600		636		700	

Table F-1b. (cont.)

		OU3 Samples															
	Sample ID	OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCBOU4	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	3/11/2015		5/27/2015		10/8/2015		11/12/2014		5/28/2015		9/2/2015		11/12/2014		3/16/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.006		0.004		**0.010**		0.006		**0.006**		0.006		0.005		0.005	
0.010	Arsenic	0.003		0.004		0.008		0.003		0.004		0.003		0.002		0.000	ND
2.0	Barium	0.044		0.049		0.036		0.020		0.036		0.025		0.022		0.036	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.0020		0.0014		0.0027		0.0008		0.0002	ND	0.0006		0.0006		0.0016	
--	Calcium	141		148		134		64		78		68		95		102	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0002	ND	0.0002	ND	0.0040		0.0002	ND	0.0023		0.0002	ND	0.0002	ND	0.0002	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	Lead	0.000	ND	0.002		0.003		0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND
--	Magnesium	32.7		35.2		30.9		11.1		13.5		11.4		14.2		17.2	
--	Manganese	0.053		0.133		0.029		0.018		0.052		0.047		0.077		0.118	
0.0020	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00208		0.00234	
--	Potassium	2.78		2.14		2.82		1.47		1.74		1.40		2.23		2.77	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	164.0		118.0		61.5		28.3		98.6		30.7		61.6		155.0	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.697		0.654		1.110		0.338		0.108		0.200		0.623		0.945	
	Total water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.309		0.24		2.51		0.117	
0.0060	Antimony	0.00574		0.00428		0.00992		0.00638		0.00715		0.00598		0.0105		0.00465	
0.010	Arsenic	0.00354		0.0043		0.00814		0.00347		0.00503		0.00394		0.0173		0.00315	
2.0	Barium	0.0454		0.0499		0.0362		0.0202		0.0403		0.0259		0.0462		0.0367	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00265		0.00223		0.00283		0.0014		0.0021		0.00238		0.022		0.00488	
--	Calcium	137		142		136		64		79		71.5		95.7		95	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00516		0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.00214		0.00313		0.00453		0.00458		0.00824		0.00641		0.044		0.00548	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.127		0.442		0.395		4.12		0.22	
0.015	Lead	0.00485		0.00596		0.00528		0.00918		0.0296		0.0245		0.24		0.01	
--	Magnesium	31.9		32.6		30.6		11.6		13.9		12.4		16.9		16.9	
--	Manganese	0.0581		0.134		0.0311		0.0213		0.0657		0.0521		0.442		0.123	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000002595	ND	0.00000446	ND	0.00000446	ND	0.000328		0.00000446	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00322		0.00079	ND	0.00079	ND	0.00536		0.00234	
--	Potassium	2.76		2.03		2.85		1.56		1.91		1.83		2.78		2.73	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.00216		0.0000217	ND
--	Sodium	153		111		61.1		29.1		99		35.3		62		144	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.667		0.636		1.15		0.379		0.272		0.338		2.16		1.13	

Table F-1b. (cont.)

		OU3 Samples															
	Sample ID	OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCBOU4	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	3/11/2015		5/27/2015		10/8/2015		11/12/2014		5/28/2015		9/2/2015		11/12/2014		3/16/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	474		489		466		208		254		230		309		307	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.251		0.0106	ND
--	Total Suspended Solids	1.415	ND	1.415	ND	1.415	ND	6		12.4		11.6		119		10.8	
10.0	Nitrate, as N	0.00345	ND	0.00345	ND	0.00345	ND	0.152		0.0701		0.0332		0.251		0.0927	
--	Chloride	300		223		108		50.4		182		62.5		113		237	
--	Sulfate	224		185		259		89		101		83.7		127		154	
--	Alkalinity, as CaCO3	158		189		159		108		105		118		115		116	
--	Total Dissolved Solids	832		848		608		280		452		292		492		664	

Table F-1b. (cont.)

		OU3 Samples															
	Sample ID	OU3-9-SW-SCBOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCOU3BC		OU3-9-SW-SCOU3BC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	3/16/2015		5/28/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		3/11/2015		3/11/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.004		0.006		**0.007**		0.005		**0.007**		**0.007**		0.006		0.006	
0.010	Arsenic	0.000	ND	0.003		0.004		0.006		0.008		0.006		0.002		0.000	ND
2.0	Barium	0.035		0.037		0.040		0.031		0.051		0.044		0.059		0.059	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.0015		0.0008		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	**0.0068**		**0.0067**	
--	Calcium	98		92		108		116		107		124		199		201	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.003010	
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0029		0.0030	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	Lead	0.000	ND	0.000	ND	0.000	ND	0.002		0.000	ND	0.005		0.000	ND	0.000	ND
--	Magnesium	16.6		15.3		25.5		28.0		24.0		26.5		52.2		52.2	
--	Manganese	0.116		0.092		0.287		0.146		0.423		0.410		0.211		0.212	
0.0020	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
--	Nickel	0.00216		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00273		0.00366	
--	Potassium	2.72		2.14		2.49		1.72		2.56		2.26		4.24		4.23	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	152.0		109.0		117.0		69.5		67.5		58.0		210.0		213.0	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.944		0.333		0.323		0.162		0.157		0.214		1.930		1.930	
	Total water																
--	Aluminum	0.121		0.171		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.0045		0.00617		0.00772		0.00612		0.00768		0.00659		0.00599		0.00563	
0.010	Arsenic	0.00289		0.00443		0.00708		0.00937		0.011		0.00834		0.00749		0.00434	
2.0	Barium	0.0366		0.0387		0.0415		0.0323		0.0524		0.0433		0.0633		0.0619	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00476		0.0031		0.000997		0.000907		0.000171	ND	0.00068		0.00732		0.00722	
--	Calcium	94.7		94		111		118		112		117		200		204	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.0052		0.00518		0.00358		0.00403		0.0022		0.00285		0.00724		0.00543	
--	Iron	0.218		0.307		0.435		0.343		0.42		0.386		0.873		0.47	
0.015	Lead	0.00978		0.018		0.0396		0.0418		0.0247		0.0371		0.0278		0.0135	
--	Magnesium	16.7		15.3		25.4		29.2		26.5		25.1		53.7		53.7	
--	Manganese	0.119		0.0989		0.304		0.169		0.445		0.397		0.241		0.24	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00241		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00298		0.00299	
--	Potassium	2.76		2.16		2.45		1.76		2.85		2.24		4.44		4.41	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	142		110		120		69		70.7		54.1		200		205	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	1.13		0.435		0.404		0.232		0.196		0.232		2		1.93	

Table F-1b. (cont.)

		OU3 Samples															
	Sample ID	OU3-9-SW-SCBOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCOU3BC		OU3-9-SW-SCOU3BC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	3/16/2015		5/28/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		3/11/2015		3/11/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	305		298		381		416		388		395		721		731	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	4.4		5.6		5.6		4		1.415	ND	1.415	ND	1.415	ND	1.415	ND
10.0	Nitrate, as N	0.101		0.15		0.082		0.0333		0.0272		0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	243		187		208		136		133		97.7		482		501	
--	Sulfate	160		127		166		204		134		216		221		227	
--	Alkalinity, as CaCO3	115		112		132		138		169		154		183		202	
--	Total Dissolved Solids	700		580		720		620		536		676		1250		1360	

Table F-1b. (cont.)

		OU3 Samples															
	Sample ID	OU3-0-SW-SCOU3BC		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	5/27/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		11/12/2014		3/13/2015		5/28/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.003		**0.007**		0.005		**0.006**		**0.007**		0.005		**0.007**		0.006	
0.010	Arsenic	0.000	ND	0.004		0.006		0.007		0.006		0.004		0.003		0.005	
2.0	Barium	0.110		0.040		0.031		0.048		0.043		0.036		0.038		0.030	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	**0.0052**		0.0007		0.0002	ND	0.0002	ND	0.0005		0.0002	ND	0.0002	ND	0.0002	ND
--	Calcium	302		108		115		106		116		113		101		107	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0033		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.146		0.046	ND	0.046	ND	0.046	ND
0.015	Lead	0.000	ND	0.005		0.000	ND	0.000	ND	**0.015**		0.000	ND	0.000	ND	0.000	ND
--	Magnesium	80.7		25.0		28.0		23.6		25.8		23.1		22.3		24.2	
--	Manganese	0.281		0.266		0.148		0.286		0.336		0.256		0.245		0.140	
0.0020	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND
--	Nickel	0.00384		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	6.43		2.42		1.75		2.47		2.39		2.56		2.51		1.96	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	304.0		116.0		68.5		67.5		55.5		67.5		126.0		97.9	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	1.150		0.386		0.228		0.143		0.223		0.174		0.402		0.165	
	Total water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.152		0.016	ND	0.016	ND
0.0060	Antimony	0.00275		0.00712		0.00617		0.00787		0.00644		0.00796		0.00786		0.00621	
0.010	Arsenic	0.000106	ND	0.00658		0.00907		0.0102		0.00789		0.00885		0.00689		0.00764	
2.0	Barium	0.111		0.0399		0.0334		0.0524		0.0422		0.0433		0.0406		0.0318	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00539		0.0013		0.00136		0.000171	ND	0.000761		0.00114		0.0011		0.00102	
--	Calcium	281		112		124		114		111		120		102		110	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00373		0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.00419		0.00295		0.00408		0.00223		0.00279		0.00605		0.00291		0.00265	
--	Iron	0.128		0.406		0.354		0.341		0.328		0.719		0.436		0.381	
0.015	Lead	0.00211		0.0311		0.044		0.0216		0.0351		0.0617		0.0314		0.0261	
--	Magnesium	73.8		25.5		28.1		26.1		25.1		26.8		22.4		24.3	
--	Manganese	0.278		0.277		0.181		0.315		0.325		0.335		0.265		0.154	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000002595	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00358		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	6.49		2.43		1.75		2.86		2.35		2.43		2.48		1.9	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	292		120		72.7		71.9		52.1		73.1		126		98.6	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	1.15		0.441		0.308		0.186		0.234		0.309		0.469		0.237	

Table F-1b. (cont.)

		OU3 Samples													
	Sample ID	OU3-0-SW-SCOU3BC		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	5/27/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		11/12/2014		3/13/2015		5/28/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	1010		385		425		391		381		410		346		376	
--	Phosphate, Total (as P)	0.0106	ND	1.01		0.0106	ND	0.054		0.0106	ND	0.0614		0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.415	ND	4.8		4.8		1.415	ND	1.415	ND	5.6		5.6		1.415	ND
10.0	Nitrate, as N	0.00345	ND	0.0747		0.027		0.0314		0.00345	ND	0.018		0.0593		0.00345	ND
--	Chloride	826		211		137		127		98.9		133		215		183	
--	Sulfate	155		164		204		129		215		193		175		174	
--	Alkalinity, as CaCO3	264		136		133		181		152		144		129		126	
--	Total Dissolved Solids	2190		680		608		592		664		640		708		672	

Table F-1b. (cont.)

		OU3 Samples															
	Sample ID	OU3-0-SW-SCRFR		OU3-0-SW-SCURTFB Dups ave		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB		OU3-9-SW-SCURTFB		OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
MCL	Sample date	9/1/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015		9/2/2015		3/10/2015		5/27/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	**0.007**		0.005		**0.007**		0.005		0.005		0.005		**0.008**		0.005	
0.010	Arsenic	0.007		0.005		0.006		0.007		0.008		0.008		0.004		0.005	
2.0	Barium	0.050		0.034		0.034		0.031		0.039		0.041		0.049		0.041	
0.0040	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0039		0.0020	
--	Calcium	101		110		99		107		92		93		158		153	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0024		0.0030	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	Lead	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.002		0.000	ND
--	Magnesium	22.0		20.7		20.4		22.7		17.9		17.2		35.9		36.6	
--	Manganese	0.442		0.128		0.102		0.097		0.127		0.129		0.206		0.132	
0.0020	Mercury	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	2.76		2.21		2.38		1.98		2.35		2.34		3.18		1.74	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	72.1		62.0		117.0		97.0		59.6		59.9		159.0		104.0	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.115		0.205		0.231		0.122		0.091		0.096		1.350		0.928	
	Total water																
--	Aluminum	0.156		0.26		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.00892		0.0068		0.00623		0.00545		0.00514		0.00497		0.00803		0.00527	
0.010	Arsenic	0.0137		0.0073		0.00676		0.00739		0.0099		0.00993		0.00548		0.00591	
2.0	Barium	0.0545		0.039		0.0347		0.0343		0.0414		0.0391		0.0492		0.0427	
0.0040	Beryllium	0.0000119	ND	0.000012	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000986		0.00110		0.000863		0.00111		0.000622		0.00058		0.00467		0.00382	
--	Calcium	103		112		97.4		94.9		98.4		98.2		152		145	
0.10	Chromium	0.000436	ND	0.00044	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.000042	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.00529		0.0058		0.00229		0.000216	ND	0.00206		0.00215		0.00338		0.00323	
--	Iron	0.851		0.43		0.221		0.197		0.275		0.282		0.17		0.046	ND
0.015	Lead	0.0653		0.048		0.014		0.0134		0.0177		0.0177		0.0138		0.00553	
--	Magnesium	23.1		23.2		20.5		22.5		19.2		19.3		36		34.1	
--	Manganese	0.513		0.15		0.105		0.0969		0.155		0.154		0.214		0.134	
0.0020	Mercury	0.00000446	ND	0.00000260	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.01		2.3		2.38		1.89		2.79		2.85		3.08		1.87	
0.050	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.000022	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	73.6		65.7		113		84.3		65.8		65.8		155		97.5	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.243		0.33		0.283		0.187		0.166		0.175		1.46		0.957	

Table F-1b. (cont.)

		OU3 Samples												
	Sample ID	OU3-0-SW-SCRFR		OU3-0-SW-SCURTFB Dups ave		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB	OU3-9-SW-SCURTFB		OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3	OU3		OU3		OU3	
MCL	Sample date	9/1/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015	9/2/2015		3/10/2015		5/27/2015	
(mg/L)	Habitat	Stream		Stream		Stream		Stream		Stream	Stream		Stream		Stream	
--	Hardness, as CaCO3	353		374		327		330		325	325		528		502	
--	Phosphate, Total (as P)	0.0878		0.054		0.0106	ND	0.0106	ND	0.05	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	8		12.0		1.415	ND	1.415	ND	4	3.6		1.415	ND	1.415	ND
10.0	Nitrate, as N	0.00345	ND	0.22		0.105		0.0122		0.0271	0.0281		0.00345	ND	0.00345	ND
--	Chloride	137		126		190		178		123	122		346		207	
--	Sulfate	140		184		153		169		130	132		215		214	
--	Alkalinity, as CaCO3	159		130		124		131		135	135		175		186	
--	Total Dissolved Solids	616		484		644		644		472	532		1040		812	

Table F-1b. (cont.)

		OU3 Samples			
	Sample ID	OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
	Operable Unit	OU3		OU3	
MCL	Sample date	8/31/2015		10/8/2015	
(mg/L)	Habitat	Stream		Stream	
	Dissolved water				
--	Aluminum	0.016	ND	0.016	ND
0.0060	Antimony	**0.011**		**0.018**	
0.010	Arsenic	**0.015**		0.008	
2.0	Barium	0.049		0.044	
0.0040	Beryllium	0.000012	ND	0.000012	ND
0.0050	Cadmium	0.0002	ND	0.0006	
--	Calcium	127		181	
0.10	Chromium	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND
1.3	Copper	0.0034		0.0032	
--	Iron	0.046	ND	0.046	ND
0.015	Lead	0.004		0.003	
--	Magnesium	32.2		45.4	
--	Manganese	0.141		0.158	
0.0020	Mercury	0.0000045	ND	0.0000045	ND
--	Nickel	0.00079	ND	0.00079	ND
--	Potassium	3.89		5.13	
0.050	Selenium	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND
--	Sodium	77.4		93.9	
0.0020	Thallium	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND
--	Zinc	0.137		0.732	
	Total water				
--	Aluminum	0.016	ND	0.016	ND
0.0060	Antimony	0.0114		0.0186	
0.010	Arsenic	0.0179		0.0102	
2.0	Barium	0.0493		0.0438	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000581		0.00124	
--	Calcium	135		187	
0.10	Chromium	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND
1.3	Copper	0.00419		0.00399	
--	Iron	0.199		0.114	
0.015	Lead	0.0253		0.0123	
--	Magnesium	35.5		47.1	
--	Manganese	0.143		0.159	
0.0020	Mercury	0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00079	ND
--	Potassium	4.26		4.95	
0.050	Selenium	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND
--	Sodium	86		96.2	
0.0020	Thallium	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND
--	Zinc	0.159		0.797	

Table F-1b. (cont.)

		OU3 Samples			
	Sample ID	OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
	Operable Unit	OU3		OU3	
MCL	Sample date	8/31/2015		10/8/2015	
(mg/L)	Habitat	Stream		Stream	
--	Hardness, as CaCO3	483		660	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.415	ND	1.415	ND
10.0	Nitrate, as N	0.0199		0.00345	ND
--	Chloride	181		198	
--	Sulfate	178		321	
--	Alkalinity, as CaCO3	184		204	
--	Total Dissolved Solids	740		908	

Notes:
Results in mg/L
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Samples were collected quarterly from November 2014 to October 2015
Samples analyzed for dissolved metals were field filtered by sample collectors
UCLM calculated using Excel confidence function (CONFIDENCE(alpha,standard_dev,size))

Key:
-- = no MCL screening value available
ID = Identification
mg/L = milligrams per liter
ND = not detected
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3
SW = Surface Water

Table F-1c. Screening results for surface water samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBCs

											OU2 Samples					
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID Operable Unit Sample date Habitat	N	count of NDs	% detected	Minimum	Maximum	Average	UCLM	Stdev	GeoMean	OU2-0-SW-AIRF OU2 3/9/2015 Stream		OU2-0-SW-AIRF OU2 5/26/2015 Stream		OU2-0-SW-AIRF OU2 8/31/2015 Stream	
	Dissolved water															
3788	Aluminum	91	91	0%	0.016	0.016	0.016	--	1.0E-17	0.016	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	91	4	95.6%	0.000474	0.0209	0.0071	0.00090	4.4E-03	0.006	0.008		0.006		0.008	
0.070	Arsenic	91	9	90.1%	0.000106	0.022	0.0065	0.0010	4.7E-03	0.004	0.006		0.006		0.009	
265	Barium	91	0	100%	0.0195	0.397	0.057	0.010	4.7E-02	0.049	0.053		0.049		0.047	
8.0	Beryllium	91	91	0%	0.0000119	0.0000119	0.0000119	--	1.4E-20	0.000012	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	91	46	49.5%	0.000171	0.00927	0.0012	0.00035	1.7E-03	0.00053	0.004		0.002		0.00017	ND
--	Calcium	91	0	100%	46	411	131	11.2	5.4E+01	122	146		145		106	
--	Chromium	91	90	1.1%	0.000436	0.00301	0.00046	0.00006	2.7E-04	0.00045	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	91	91	0%	0.0000416	0.0000416	0.0000416	--	5.5E-20	0.0000416	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	91	51	44.0%	0.000216	0.00882	0.0020	0.00049	2.4E-03	0.00077	0.0077		0.0039		0.0087	
--	Iron	91	84	7.7%	0.046	0.234	0.054	0.0061	2.9E-02	0.050	0.150		0.046	ND	0.046	ND
4.0	Lead	91	46	49.5%	0.000214	0.0265	0.0029	0.00091	4.4E-03	0.0010	0.027		0.004		0.009	
--	Magnesium	91	0	100%	11.1	88.1	30.7	3.0	1.5E+01	27.8	35.1		34.9		27.9	
--	Manganese	91	1	98.9%	0.0006	1.03	0.20	0.036	1.8E-01	0.14	0.209		0.159		0.052	
1.0	Mercury	91	91	0%	0.0000026	0.00000446	0.0000044	--	4.3E-07	0.0000043	0.0000045	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	91	82	9.9%	0.00079	0.00384	0.00097	0.00012	5.9E-04	0.00089	0.00079	ND	0.00079	ND	0.00200	
--	Potassium	91	0	100%	1.4	18.2	4.4	0.81	3.9E+00	3.4	7.26		4.49		16.60	
--	Selenium	91	91	0%	0.000135	0.000135	0.000135	--	1.9E-19	0.00014	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	91	91	0%	0.0000217	0.0000217	0.0000217	--	2.4E-20	0.0000217	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	91	0	100%	18.5	356	112	13.0	6.3E+01	95.2	185.0		135.0		203.0	
--	Thallium	91	91	0%	0.0000217	0.0000217	0.0000217	--	2.4E-20	0.0000217	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	91	90	1.1%	0.00053	0.00572	0.00059	0.00011	5.4E-04	0.00054	0.001	ND	0.001	ND	0.001	ND
--	Zinc	91	2	97.8%	0.0045	3.15	0.55	0.12	5.6E-01	0.31	1.510		0.880		0.140	
	Total water															
3788	Aluminum	91	75	17.6%	0.016	2.51	0.073	0.055	2.7E-01	0.025	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	91	3	96.7%	0.000474	0.0212	0.0078	0.00092	4.5E-03	0.0065	0.00851		0.00734		0.00882	
0.070	Arsenic	91	4	95.6%	0.000106	0.0262	0.0088	0.0011	5.6E-03	0.0065	0.00677		0.00811		0.0111	
265	Barium	91	0	100%	0.0202	0.397	0.059	0.010	4.6E-02	0.051	0.0521		0.0496		0.0458	
8.0	Beryllium	91	91	0%	0.0000119	0.0000119	0.0000119	--	1.4E-20	0.0000119	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	91	15	83.5%	0.000171	0.022	0.0022	0.0006	2.9E-03	0.0012	0.00423		0.00396		0.000171	ND
--	Calcium	91	0	100%	45.1	394	131	10.6	5.2E+01	122	146		151		110	
--	Chromium	91	89	2.2%	0.000436	0.00516	0.00052	0.00012	6.0E-04	0.00046	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	91	91	0%	0.0000416	0.0000416	0.0000416	--	5.5E-20	0.0000416	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	91	8	91.2%	0.000216	0.044	0.0053	0.0011	5.2E-03	0.0036	0.00822		0.00811		0.0116	
--	Iron	91	13	85.7%	0.046	4.12	0.31	0.092	4.5E-01	0.21	0.199		0.144		0.046	ND
4.0	Lead	91	4	95.6%	0.000214	0.24	0.029	0.0060	2.9E-02	0.018	0.0384		0.0421		0.0383	
--	Magnesium	91	0	100%	10.5	83.5	30.9	2.8	1.4E+01	28.2	34.8		35.3		29.4	
--	Manganese	91	0	100%	0.00385	1.07	0.22	0.038	1.8E-01	0.16	0.22		0.182		0.0539	
1.0	Mercury	91	88	3.3%	0.000002595	0.000328	0.000011	8.3E-06	4.0E-05	0.0000049	0.00000446	ND	0.00000446	ND	0.00000446	ND
76.0	Nickel	91	82	9.9%	0.00079	0.00536	0.0010	0.00015	7.5E-04	0.00090	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	91	0	100%	1.56	19.5	4.5	0.83	4.1E+00	3.5	7.18		4.65		17.5	
--	Selenium	91	91	0%	0.000135	0.000135	0.000135	--	1.9E-19	0.000135	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	91	90	1.1%	0.0000217	0.00216	0.000045	0.000046	2.2E-04	0.000023	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	91	0	100%	17	317	113	12.8	6.2E+01	95.9	202		136		221	
--	Thallium	91	91	0%	0.0000217	0.0000217	0.0000217	--	2.4E-20	0.0000217	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	91	89	2.2%	0.00053	0.00691	0.00065	0.00017	8.2E-04	0.00056	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	91	0	100%	0.0118	3.15	0.63	0.12	5.9E-01	0.40	1.44		1.05		0.172	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID										OU2 Samples				
											OU2-0-SW-AIRF	OU2-0-SW-AIRF		OU2-0-SW-AIRF	
	Operable Unit										OU2	OU2		OU2	
	Sample date										3/9/2015	5/26/2015		8/31/2015	
	Habitat	**N**	**count of NDs**	**% detected**	**Minimum**	**Maximum**	**Average**	**UCLM**	**Stdev**	**GeoMean**	Stream	Stream		Stream	
--	Hardness, as CaCO3	91	0	100%	161	1330	453	38.0	1.9E+02	422	508	523		396	
--	Phosphate, Total (as P)	91	56	38.5%	0.0106	1.66	0.18	0.078	3.8E-01	0.034	0.576	0.269		1.2	
--	Total Suspended Solids	91	44	51.6%	1.415	119	5.0	2.6	1.2E+01	2.9	4.8	1.415	ND	1.415	ND
--	Nitrate, as N	91	32	64.8%	0.00345	23.9	2.1	1.1	5.4E+00	0.055	7.74	4.25		19.1	
--	Chloride	91	0	100%	32.3	939	235	31.5	1.5E+02	196	367	267		393	
--	Sulfate	91	0	100%	12.6	723	178	19.2	9.3E+01	152	194	215		123	
--	Alkalinity, as CaCO3	91	0	100%	105	267	160	7.0	3.4E+01	157	161	170		150	
--	Total Dissolved Solids	91	0	100%	256	2190	818	74.7	3.6E+02	747	1260	1020		1040	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU2 Samples															
		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	3/10/2015		5/26/2015		8/31/2015		10/8/2015		3/9/2015		5/26/2015		8/31/2015		10/8/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.009		0.006		0.019		0.021		0.008		0.006		0.012		0.017	
0.070	Arsenic	0.004		0.005		0.022		0.013		0.005		0.006		0.013		0.016	
265	Barium	0.048		0.043		0.053		0.055		0.053		0.048		0.047		0.053	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.005		0.003		0.00017	ND	0.0005		0.003		0.002		0.0002	ND	0.0006	
--	Calcium	159		144		128		184		144		146		107		143	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0024		0.0032		0.0054		0.0042		0.0038		0.0038		0.0082		0.0063	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
4.0	Lead	0.003		0.003		0.003		0.008		0.003		0.003		0.009		0.005	
--	Magnesium	36.1		35.0		34.5		47.2		34.8		35.2		28.0		34.7	
--	Manganese	0.249		0.157		0.305		0.360		0.206		0.185		0.066		0.251	
1.0	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.23		1.87		4.61		5.18		8.15		3.92		16.00		10.50	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	159.0		102.0		81.8		98.2		186.0		126.0		196.0		143.0	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	1.790		0.827		0.282		0.658		1.410		0.972		0.168		0.461	
	Total water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.00971		0.00658		0.0196		0.0212		0.00857		0.00852		0.0133		0.0189	
0.070	Arsenic	0.00651		0.0075		0.0262		0.0147		0.00741		0.00823		0.0134		0.0207	
265	Barium	0.0496		0.0442		0.0528		0.0545		0.0513		0.0497		0.0485		0.0551	
8.0	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.00544		0.00391		0.000712		0.00106		0.00423		0.00453		0.000171	ND	0.00123	
--	Calcium	157		149		131		188		144		156		113		145	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.00492		0.0061		0.00678		0.00592		0.00988		0.00905		0.011		0.0115	
--	Iron	0.159		0.046	ND	0.226		0.162		0.237		0.151		0.101		0.234	
4.0	Lead	0.0284		0.0227		0.0411		0.0479		0.0527		0.0587		0.0387		0.0755	
--	Magnesium	36.8		35.6		37.4		48		34		36.7		30.7		34.1	
--	Manganese	0.272		0.182		0.306		0.361		0.224		0.216		0.0679		0.264	
1.0	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000155	
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.17		1.85		4.97		5.21		7.97		4.06		17.5		10.6	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	159		103		88.2		99.7		206		133		219		151	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	2.02		0.949		0.327		0.725		1.43		1.18		0.199		0.596	

Table F-1c. (cont.)

		OU2 Samples															
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-ASCWWT		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF		OU2-0-SW-BIRF	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	3/10/2015		5/26/2015		8/31/2015		10/8/2015		3/9/2015		5/26/2015		8/31/2015		10/8/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	545		518		482		668		500		540		409		501	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.637		0.256		1.17		0.771	
--	Total Suspended Solids	4		1.415	ND	1.415	ND	1.415	ND	6.4		4		1.415	ND	3.2	
--	Nitrate, as N	0.00345	ND	0.00345	ND	0.0163		0.00345	ND	8.44		3.58		17.9		10.9	
--	Chloride	344		221		197		209		370		289		381		263	
--	Sulfate	209		222		176		320		176		216		128		221	
--	Alkalinity, as CaCO3	170		182		184		204		149		175		150		164	
--	Total Dissolved Solids	1070		860		768		1020		1180		1140		964		1030	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU2 Samples															
		OU2-0-SW-IRF		OU2-0-SW-IRF		OU2-0-SW-PPTRIB		OU2-0-SW-SC1		OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR Dups ave		OU2-0-SW-SCBNPRR	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	3/9/2015		5/26/2015		3/9/2015		10/8/2015		3/11/2015		5/27/2015		9/1/2015		10/8/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.004		0.006		0.000	ND	0.005		0.007		0.005		0.007		0.018	
0.070	Arsenic	0.002		0.006		0.000	ND	0.016		0.004		0.005		0.010		0.009	
265	Barium	0.030		0.049		0.158		0.145		0.047		0.042		0.046		0.042	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.0002	ND	0.0022		0.0002	ND	0.0002	ND	0.003		0.002		0.0002	ND	0.0008	
--	Calcium	264		144		69		74		151		159		127		180	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0002	ND	0.0039		0.0002	ND	0.0002	ND	0.0024		0.0022		0.0024		0.0033	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.114		0.046	ND	0.046	ND	0.046	ND	0.046	ND
4.0	Lead	0.000	ND	0.003		0.000	ND	0.000	ND	0.002		0.000	ND	0.003		0.007	
--	Magnesium	64.9		33.9		15.2		18.7		39.0		37.0		32.1		46.3	
--	Manganese	0.538		0.163		0.192		0.100		0.201		0.112		0.105		0.114	
1.0	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	12.70		4.40		10.30		4.70		3.31		1.74		3.87		5.00	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	75.2		131.0		32.4		32.6		157.0		108.0		73.7		94.7	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.064		0.895		0.005	ND	0.038		1.340		0.689		0.185		0.672	
	Total water																
3788	Aluminum	0.016	ND	0.016	ND	0.12		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.00378		0.00732		0.000474	ND	0.00589		0.00776		0.00489		0.00770		0.0183	
0.070	Arsenic	0.00267		0.00844		0.000106	ND	0.022		0.00568		0.00669		0.0111		0.01	
265	Barium	0.0298		0.0509		0.142		0.15		0.0465		0.0428		0.048		0.0424	
8.0	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.000171	ND	0.00421		0.000171	ND	0.000171	ND	0.00439		0.00281		0.000512		0.00105	
--	Calcium	265		152		67.5		74.7		150		147		134		184	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.00203		0.00836		0.000216	ND	0.000216	ND	0.0046		0.0032		0.003210		0.00367	
--	Iron	0.228		0.149		0.396		0.285		0.229		0.046	ND	0.116		0.105	
4.0	Lead	0.00356		0.0471		0.000214	ND	0.0243		0.0233		0.0106		0.0121		0.0133	
--	Magnesium	66.3		36.7		15		18.4		36.3		34.6		34.6		46.2	
--	Manganese	0.556		0.192		0.187		0.112		0.218		0.114		0.11		0.119	
1.0	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	12.7		4.66		10.1		4.67		3.32		1.72		4.17		4.98	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	84		138		34.9		31.6		153		101		78.2		94.2	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.0722		1.07		0.0131		0.0705		1.28		0.703		0.213		0.711	

Table F-1c. (cont.)

		OU2 Samples											
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU2-0-SW-IRF	OU2-0-SW-IRF	OU2-0-SW-PPTRIB		OU2-0-SW-SC1	OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR		OU2-0-SW-SCBNPRR Dups ave		OU2-0-SW-SCBNPRR	
	Operable Unit	OU2	OU2	OU2		OU2	OU2		OU2		OU2		OU2	
	Sample date	3/9/2015	5/26/2015	3/9/2015		10/8/2015	3/11/2015		5/27/2015		9/1/2015		10/8/2015	
	Habitat	Stream	Stream	Stream		Stream	Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	935	531	230		262	525		509		477		649	
--	Phosphate, Total (as P)	0.265	0.3	0.253		0.0548	0.0106	ND	0.0106	ND	0.035		0.0106	ND
--	Total Suspended Solids	7.6	3.2	1.415	ND	3.6	1.415	ND	1.415	ND	1.42	ND	1.415	ND
--	Nitrate, as N	1.31	3.89	0.943		0.318	0.00345	ND	0.00345	ND	0.0192		0.00345	ND
--	Chloride	309	259	90.4		89.5	328		210		169		191	
--	Sulfate	460	206	12.6		32.1	214		212		175		313	
--	Alkalinity, as CaCO3	159	173	167		179	177		189		194		199	
--	Total Dissolved Solids	1480	948	408		388	904		884		672		968	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU2 Samples															
		OU2-0-SW-SCI		OU2-0-SW-SCI		OU2-0-SW-SCI		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCWWT Dups ave	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	3/9/2015		5/26/2015		8/31/2015		3/9/2015		5/26/2015		8/31/2015		10/8/2015		3/10/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.005		0.005		0.005		0.010		0.007		0.018		0.020		0.000	ND
0.070	Arsenic	0.014		0.012		0.013		0.007		0.008		0.020		0.022		0.003	
265	Barium	0.120		0.130		0.139		0.063		0.056		0.077		0.077		0.060	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.0002	ND	0.0002	ND	0.0002	ND	0.0036		0.0028		0.0002	ND	0.0007		0.0006	
--	Calcium	64		70		60		141		146		96		132		116	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0027		0.0042		0.0057		0.0055		0.0077	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.119		0.046	ND
4.0	Lead	0.003		0.004		0.005		0.000	ND	0.010		0.006		0.016		0.006	
--	Magnesium	16.1		16.3		15.0		33.9		34.6		24.8		31.9		28.8	
--	Manganese	0.111		0.069		0.029		0.264		0.214		0.108		0.298		0.048	
1.0	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.84		2.79		2.13		6.05		3.59		12.70		9.41		14.80	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	21.7		25.8		24.2		153.0		115.0		149.5		120.5		213.5	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.048		0.041		0.065		1.710		1.095		0.296		0.513		0.260	
	Total water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.15	
2.0	Antimony	0.00669		0.00563		0.00584		0.0108		0.0087		0.0198		0.0201		0.0023	
0.070	Arsenic	0.0202		0.0132		0.0143		0.010		0.0098		0.0208		0.025		0.0037	
265	Barium	0.119		0.129		0.136		0.062		0.057		0.079		0.078		0.064	
8.0	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	0.00454		0.00434		0.00057		0.00103		0.00086	
--	Calcium	62.7		68.6		61.7		139		146		99.4		134		114	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.00449		0.0023		0.00217		0.00843		0.00832		0.00731		0.00794		0.014	
--	Iron	0.592		0.224		0.158		0.335		0.208		0.130		0.301		0.13	
4.0	Lead	0.0665		0.0348		0.0248		0.0564		0.0487		0.0327		0.0552		0.026	
--	Magnesium	15.2		16.6		16.3		33.7		34.1		26.6		31.6		29.4	
--	Manganese	0.127		0.0758		0.0328		0.28		0.24		0.11		0.30		0.057	
1.0	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.77		2.81		2.32		5.68		3.62		13.6		9.3		15.1	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	23.2		25.3		26.3		166		113		161		121		214	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.0052		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.133		0.0753		0.095		1.74		1.25		0.32		0.58		0.32	

Table F-1c. (cont.)

		OU2 Samples									
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU2-0-SW-SCI	OU2-0-SW-SCI		OU2-0-SW-SCI		OU2-0-SW-SCI80 Dups ave	OU2-0-SW-SCI80 Dups ave	OU2-0-SW-SCI80 Dups ave		OU2-0-SW-SCI80 Dups ave	OU2-0-SW-SCWWT Dups ave
	Operable Unit	OU2	OU2		OU2		OU2	OU2	OU2		OU2	OU2
	Sample date	3/9/2015	5/26/2015		8/31/2015		3/9/2015	5/26/2015	8/31/2015		10/8/2015	3/10/2015
	Habitat	Stream	Stream		Stream		Stream	Stream	Stream		Stream	Stream
--	Hardness, as CaCO3	219	240		221		486	505	358		463	405
--	Phosphate, Total (as P)	0.122	0.0579		0.0106	ND	0.347	0.181	0.864		0.54	1.62
--	Total Suspended Solids	6	1.415	ND	1.415	ND	4.20	2.71	1.42	ND	2.31	12.0
--	Nitrate, as N	0.582	0.52		0.0129		4.71	2.11	13.6		6.8	20.6
--	Chloride	65.5	71.5		63.7		331	240	300		222	392
--	Sulfate	25.6	26.5		19.1		173	208	98		188	141
--	Alkalinity, as CaCO3	159	163		161		165	182	161		180	133
--	Total Dissolved Solids	332	408		312		1055	942	862		860	1065

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU2 Samples											
		OU2-0-SW-SCWWT		OU2-0-SW-SCWWT		OU2-0-SW-SCWWT		OU2-0-SW-SGDINF		OU2-0-SW-SPRRP		OU2-0-SW-STRGD	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	5/26/2015		8/31/2015		10/8/2015		3/10/2015		3/10/2015		3/10/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water												
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.002		0.002		0.003		0.012		0.009		0.003	
0.070	Arsenic	0.003		0.004		0.004		0.009		0.011		0.003	
265	Barium	0.065		0.049		0.051		0.031		0.044		0.076	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.0009		0.0002	ND	0.0002	ND	0.0093		0.0002	ND	0.0018	
--	Calcium	138		106		99		411		46		219	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0057		0.0083		0.0088		0.0041		0.0002	ND	0.0002	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.125		0.046	ND
4.0	Lead	0.002		0.005		0.004		0.000	ND	0.004		0.000	ND
--	Magnesium	34.5		27.6		23.6		88.1		12.3		54.2	
--	Manganese	0.035		0.013		0.011		0.335		0.053		0.171	
1.0	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00284		0.00079	ND	0.00079	ND
--	Potassium	13.30		18.20		16.70		2.37		3.66		2.86	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	240.0		224.0		210.0		107.0		19.5		172.0	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.299		0.069		0.099		3.150		0.485		0.668	
	Total water												
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.00363		0.00282		0.00383		0.0124		0.00934		0.00261	
0.070	Arsenic	0.00425		0.00451		0.00602		0.00943		0.0192		0.00412	
265	Barium	0.0648		0.0491		0.0531		0.0318		0.0454		0.0748	
8.0	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.00124		0.000171	ND	0.000815		0.00928		0.00106		0.00174	
--	Calcium	141		110		103		394		45.1		208	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.0117		0.011		0.0149		0.00465		0.00252		0.000216	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.57		0.144	
4.0	Lead	0.0315		0.0171		0.0378		0.000214	ND	0.0213		0.000214	ND
--	Magnesium	34.4		29.3		23.9		83.5		12		53.4	
--	Manganese	0.0505		0.015		0.0221		0.341		0.062		0.181	
1.0	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
76.0	Nickel	0.00203		0.00079	ND	0.00079	ND	0.00298		0.00079	ND	0.00079	ND
--	Potassium	13.7		19.5		17.1		2.25		3.38		2.77	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	240		246		217		106		17		166	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.371		0.0902		0.198		3.15		0.607		0.711	

Table F-1c. (cont.)

		OU2 Samples									
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU2-0-SW-SCWWT	OU2-0-SW-SCWWT		OU2-0-SW-SCWWT	OU2-0-SW-SGDINF		OU2-0-SW-SPRRP		OU2-0-SW-STRGD	
	Operable Unit	OU2	OU2		OU2	OU2		OU2		OU2	
	Sample date	5/26/2015	8/31/2015		10/8/2015	3/10/2015		3/10/2015		3/10/2015	
	Habitat	Stream	Stream		Stream	Stream		Stream		Stream	
--	Hardness, as CaCO3	493	395		355	1330		162		738	
--	Phosphate, Total (as P)	1.3	1.45		1.66	0.0106	ND	0.0548		0.0106	ND
--	Total Suspended Solids	6	1.415	ND	4.8	4.4		1.415	ND	1.415	ND
--	Nitrate, as N	17.2	22.9		23.9	0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	448	427		329	387		32.3		532	
--	Sulfate	187	117		111	723		31.8		111	
--	Alkalinity, as CaCO3	136	145		139	267		127		249	
--	Total Dissolved Solids	1270	1100		1060	1730		352		1390	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3 Samples															
		OU3-0-SW-ASCAOU4		OU3-0-SW-HS		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-NGCF		OU3-0-SW-NPCWR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	3/16/2015		3/11/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015		3/11/2015		3/10/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.005		0.000	ND	0.005		0.005		0.006		0.004		0.000	ND	0.008	
0.070	Arsenic	0.003		0.000	ND	0.000	ND	0.003		0.003		0.000	ND	0.000	ND	0.004	
265	Barium	0.034		0.132		0.022		0.032		0.037		0.029		0.397		0.049	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.0022		0.0002	ND	0.0005		0.0015		0.0007		0.0002	ND	0.0002	ND	0.0044	
--	Calcium	67		48		94		87		94		88		269		160	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0031		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0024	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
4.0	Lead	0.002		0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.003	
--	Magnesium	13.5		11.4		14.2		15.4		15.3		13.9		80.1		36.3	
--	Manganese	0.046		0.001	ND	0.088		0.069		0.100		0.153		0.017		0.244	
1.0	Mercury	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00212		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.89		3.51		2.15		2.48		2.21		1.88		11.00		3.14	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	104.0		18.5		60.4		110.0		112.0		58.9		356.0		159.0	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.006		0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.544		0.005	ND	0.610		0.542		0.305		0.117		0.010		1.670	
	Total water																
3788	Aluminum	0.226		0.138		0.016	ND	0.016	ND	0.016	ND	0.207		0.016	ND	0.016	ND
2.0	Antimony	0.00539		0.000474	ND	0.0054		0.00532		0.00597		0.00439		0.000474	ND	0.00898	
0.070	Arsenic	0.00383		0.000106	ND	0.00282		0.00321		0.00383		0.00292		0.000106	ND	0.00609	
265	Barium	0.037		0.133		0.0236		0.0319		0.039		0.0301		0.397		0.0504	
8.0	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.00292		0.000171	ND	0.0029		0.00301		0.00294		0.00201		0.000171	ND	0.00534	
--	Calcium	70.8		47.1		92.9		85.4		96.6		95		252		153	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.00924		0.000216	ND	0.00343		0.00394		0.00445		0.00362		0.000216	ND	0.00459	
--	Iron	0.339		0.211		0.144		0.144		0.242		0.439		0.046	ND	0.176	
4.0	Lead	0.0166		0.00587		0.00744		0.00713		0.0138		0.0145		0.000214	ND	0.0245	
--	Magnesium	13.3		10.5		15.5		15.4		15.7		15		74.3		37	
--	Manganese	0.0551		0.00385		0.0924		0.0666		0.108		0.162		0.0174		0.291	
1.0	Mercury	0.00000446	ND	0.00000446	ND	0.000002595	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.98		3.5		2.23		2.49		2.23		2.42		10.1		3.21	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	109		17.5		61.7		109		112		66		317		156	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00691		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.688		0.0118		0.724		0.6		0.411		0.373		0.0165		1.85	

Table F-1c. (cont.)

		OU3 Samples														
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3-0-SW-ASCAOU4		OU3-0-SW-HS		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-MRUBP		OU3-0-SW-NGCF		OU3-0-SW-NPCWR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	3/16/2015		3/11/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015		3/11/2015		3/10/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	232		161		296		277		306		299		934		536	
--	Phosphate, Total (as P)	0.0106	ND	0.125		0.0106	ND	0.0106	ND	0.0106	ND	0.0713		0.0106	ND	0.0106	ND
--	Total Suspended Solids	6.4		9.2		3.6		3.6		3.6		7.2		1.415	ND	4.4	
--	Nitrate, as N	0.0109		0.76		0.253		0.0804		0.115		0.016		0.00345	ND	0.00345	ND
--	Chloride	189		44.1		112		180		198		117		939		349	
--	Sulfate	93.1		14.2		166		135		137		113		58.3		221	
--	Alkalinity, as CaCO3	107		116		114		120		108		130		234		179	
--	Total Dissolved Solids	468		256		400		576		628		448		2140		1080	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3 Samples															
		OU3-0-SW-NPCWR Dups ave		OU3-0-SW-NPCWR		OU3-0-SW-NPCWR		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC248AC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	5/27/2015		8/31/2015		10/8/2015		3/11/2015		5/27/2015		9/1/2015		10/8/2015		3/13/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.006		0.017		0.020		0.007		0.006		0.008		0.007		0.006	
0.070	Arsenic	0.005		0.017		0.010		0.003		0.007		0.009		0.007		0.003	
265	Barium	0.045		0.053		0.051		0.044		0.034		0.054		0.044		0.042	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.0037		0.0002	ND	0.0005		0.0020		0.0016		0.0002	ND	0.0002	ND	0.0002	ND
--	Calcium	156		130		180		136		131		118		131		118	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0029		0.0041		0.0035		0.0002	ND	0.0024		0.0002	ND	0.0002	ND	0.0002	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.234		0.046	ND	0.046	ND	0.046	ND
4.0	Lead	0.000	ND	0.004		0.005		0.000	ND	0.021		0.003		0.004		0.000	ND
--	Magnesium	36.8		34.7		46.2		32.5		31.6		29.5		29.7		26.8	
--	Manganese	0.197		0.288		0.292		0.062		0.152		0.459		0.193		0.173	
1.0	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.74		4.58		5.13		2.70		1.58		2.70		2.20		2.41	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	107.0		81.3		94.8		155.0		86.4		68.6		51.3		131.0	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	1.455		0.202		0.638		0.549		0.287		0.054		0.105		0.425	
	Total water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.0061		0.0174		0.0198		0.00633		0.00559		0.00929		0.0088		0.0063	
0.070	Arsenic	0.0062		0.0202		0.0135		0.00372		0.00854		0.0138		0.00953		0.00422	
265	Barium	0.046		0.0528		0.0517		0.0425		0.0351		0.0562		0.0466		0.0439	
8.0	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.00593		0.000559		0.00119		0.00226		0.00172		0.000586		0.000682		0.000929	
--	Calcium	150		134		181		132		120		126		125		119	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.0053		0.00721		0.0049		0.00203		0.0044		0.00357		0.00265		0.00208	
--	Iron	0.046	ND	0.173		0.146		0.152		0.306		0.576		0.311		0.211	
4.0	Lead	0.0076		0.0272		0.0264		0.00707		0.0332		0.0612		0.0369		0.0152	
--	Magnesium	35.2		37.4		46.1		31		29.2		32.4		29.6		26.9	
--	Manganese	0.203		0.292		0.305		0.0796		0.171		0.502		0.223		0.188	
1.0	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.9		5		5		2.59		1.7		2.89		2.23		2.38	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	103		87.8		95.3		144		78.6		74		48.6		131	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	1.49		0.238		0.711		0.537		0.316		0.143		0.166		0.454	

Table F-1c. (cont.)

		OU3 Samples															
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3-0-SW-NPCWR Dups ave		OU3-0-SW-NPCWR		OU3-0-SW-NPCWR		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC1C		OU3-0-SW-SC248AC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	5/27/2015		8/31/2015		10/8/2015		3/11/2015		5/27/2015		9/1/2015		10/8/2015		3/13/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	519		488		642		459		420		449		435		407	
--	Phosphate, Total (as P)	0.011	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0549		0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.4	ND	1.415	ND	1.415	ND	1.415	ND	5.2		5.6		1.415	ND	4.8	
--	Nitrate, as N	0.0035	ND	0.0312		0.00345	ND	0.00345	ND	0.00345	ND	0.0218		0.00345	ND	0.0815	
--	Chloride	219		199		212		285		157		156		93.4		235	
--	Sulfate	223		184		321		206		212		156		241		176	
--	Alkalinity, as CaCO3	186		189		203		138		133		184		162		134	
--	Total Dissolved Solids	902		712		1000		816		648		608		616		792	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3 Samples															
		OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC		OU3-0-SW-SC248BC		OU3-9-SW-SC248BC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	5/25/2015		9/1/2015		10/9/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		10/9/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.004		0.006		0.006		0.005		0.005		0.007		0.006		0.006	
0.070	Arsenic	0.005		0.010		0.009		0.004		0.005		0.010		0.006		0.006	
265	Barium	0.057		0.167		0.121		0.039		0.033		0.052		0.045		0.047	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--	Calcium	132		192		205		159		119		118		128		131	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--	Iron	0.046	ND	0.046	ND	0.154		0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
4.0	Lead	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.002		0.004		0.005	
--	Magnesium	31.6		46.4		48.1		37.3		29.8		28.5		31.3		29.2	
--	Manganese	0.598		1.030		0.968		0.489		0.200		0.481		0.411		0.409	
1.0	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.68		2.71		2.03		2.57		1.66		2.56		2.32		2.31	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	94.8		215.0		172.0		112.0		70.2		68.6		57.2		57.4	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.309		0.852		0.672		0.365		0.235		0.087		0.169		0.174	
	Total water																
3788	Aluminum	0.42		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.165		0.016	ND	0.016	ND
2.0	Antimony	0.00506		0.00723		0.00593		0.0055		0.0056		0.0101		0.00612		0.00659	
0.070	Arsenic	0.00872		0.0135		0.0112		0.0068		0.0076		0.0158		0.00842		0.00848	
265	Barium	0.0643		0.173		0.121		0.041		0.033		0.0574		0.046		0.0456	
8.0	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.00124		0.000171	ND	0.000171	ND	0.00102		0.00118		0.00127		0.000614		0.000631	
--	Calcium	121		201		186		160		111		126		123		125	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.00494		0.000216	ND	0.000216	ND	0.0023		0.0029		0.00678		0.00273		0.00293	
--	Iron	0.806		0.351		0.374		0.468		0.284		0.813		0.407		0.402	
4.0	Lead	0.0317		0.00555		0.00712		0.0244		0.0289		0.101		0.038		0.0372	
--	Magnesium	32		48.1		43.9		38.1		29.4		31.2		28.7		27.8	
--	Manganese	0.658		1.07		0.93		0.562		0.21		0.55		0.4		0.403	
1.0	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000155		0.00000446	ND	0.00000446	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	1.84		2.97		2.06		2.6		1.6		2.93		2.28		2.25	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	85.5		225		159		114		64.1		73.5		53.5		54.4	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.412		0.927		0.662		0.42		0.29		0.278		0.211		0.212	

Table F-1c. (cont.)

		OU3 Samples													
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248AC		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC Dups ave		OU3-0-SW-SC248BC		OU3-0-SW-SC248BC		OU3-9-SW-SC248BC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	5/25/2015		9/1/2015		10/9/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		10/9/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	435		700		644		557		397		444		425		428	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.035		0.011	ND	0.0718		0.0106	ND	0.0106	ND
--	Total Suspended Solids	16.4		1.415	ND	1.415	ND	2.7		3.4		7.2		1.415	ND	1.415	ND
--	Nitrate, as N	0.0587		0.0619		0.00345	ND	0.060		0.013		0.013		0.00345	ND	0.00345	ND
--	Chloride	210		608		397		224		144		140		106		104	
--	Sulfate	198		146		233		267		214		145		232		231	
--	Alkalinity, as CaCO3	156		208		210		161		135		181		161		161	
--	Total Dissolved Solids	768		1550		1230		914		642		600		636		700	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3 Samples															
		OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCBOU4	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	3/11/2015		5/27/2015		10/8/2015		11/12/2014		5/28/2015		9/2/2015		11/12/2014		3/16/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.006		0.004		0.010		0.006		0.006		0.006		0.005		0.005	
0.070	Arsenic	0.003		0.004		0.008		0.003		0.004		0.003		0.002		0.000	ND
265	Barium	0.044		0.049		0.036		0.020		0.036		0.025		0.022		0.036	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.0020		0.0014		0.0027		0.0008		0.0002	ND	0.0006		0.0006		0.0016	
--	Calcium	141		148		134		64		78		68		95		102	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0002	ND	0.0002	ND	0.0040		0.0002	ND	0.0023		0.0002	ND	0.0002	ND	0.0002	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
4.0	Lead	0.000	ND	0.002		0.003		0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND
--	Magnesium	32.7		35.2		30.9		11.1		13.5		11.4		14.2		17.2	
--	Manganese	0.053		0.133		0.029		0.018		0.052		0.047		0.077		0.118	
1.0	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00208		0.00234	
--	Potassium	2.78		2.14		2.82		1.47		1.74		1.40		2.23		2.77	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	164.0		118.0		61.5		28.3		98.6		30.7		61.6		155.0	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.697		0.654		1.110		0.338		0.108		0.200		0.623		0.945	
	Total water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.309		0.24		2.51		0.117	
2.0	Antimony	0.00574		0.00428		0.00992		0.00638		0.00715		0.00598		0.0105		0.00465	
0.070	Arsenic	0.00354		0.0043		0.00814		0.00347		0.00503		0.00394		0.0173		0.00315	
265	Barium	0.0454		0.0499		0.0362		0.0202		0.0403		0.0259		0.0462		0.0367	
8.0	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.00265		0.00223		0.00283		0.0014		0.0021		0.00238		0.022		0.00488	
--	Calcium	137		142		136		64		79		71.5		95.7		95	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00516		0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.00214		0.00313		0.00453		0.00458		0.00824		0.00641		0.044		0.00548	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.127		0.442		0.395		4.12		0.22	
4.0	Lead	0.00485		0.00596		0.00528		0.00918		0.0296		0.0245		0.24		0.01	
--	Magnesium	31.9		32.6		30.6		11.6		13.9		12.4		16.9		16.9	
--	Manganese	0.0581		0.134		0.0311		0.0213		0.0657		0.0521		0.442		0.123	
1.0	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000002595	ND	0.00000446	ND	0.00000446	ND	0.000328		0.00000446	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00322		0.00079	ND	0.00079	ND	0.00536		0.00234	
--	Potassium	2.76		2.03		2.85		1.56		1.91		1.83		2.78		2.73	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.00216		0.0000217	ND
--	Sodium	153		111		61.1		29.1		99		35.3		62		144	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.667		0.636		1.15		0.379		0.272		0.338		2.16		1.13	

Table F-1c. (cont.)

		OU3 Samples															
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SC248NRB		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCAOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCBOU4	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	3/11/2015		5/27/2015		10/8/2015		11/12/2014		5/28/2015		9/2/2015		11/12/2014		3/16/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	474		489		466		208		254		230		309		307	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.251		0.0106	ND
--	Total Suspended Solids	1.415	ND	1.415	ND	1.415	ND	6		12.4		11.6		119		10.8	
--	Nitrate, as N	0.00345	ND	0.00345	ND	0.00345	ND	0.152		0.0701		0.0332		0.251		0.0927	
--	Chloride	300		223		108		50.4		182		62.5		113		237	
--	Sulfate	224		185		259		89		101		83.7		127		154	
--	Alkalinity, as CaCO3	158		189		159		108		105		118		115		116	
--	Total Dissolved Solids	832		848		608		280		452		292		492		664	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3 Samples															
		OU3-9-SW-SCBOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCOU3BC		OU3-9-SW-SCOU3BC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	3/16/2015		5/28/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		3/11/2015		3/11/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.004		0.006		0.007		0.005		0.007		0.007		0.006		0.006	
0.070	Arsenic	0.000	ND	0.003		0.004		0.006		0.008		0.006		0.002		0.000	ND
265	Barium	0.035		0.037		0.040		0.031		0.051		0.044		0.059		0.059	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.0015		0.0008		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0068		0.0067	
--	Calcium	98		92		108		116		107		124		199		201	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.003010	
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0029		0.0030	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
4.0	Lead	0.000	ND	0.000	ND	0.000	ND	0.002		0.000	ND	0.005		0.000	ND	0.000	ND
--	Magnesium	16.6		15.3		25.5		28.0		24.0		26.5		52.2		52.2	
--	Manganese	0.116		0.092		0.287		0.146		0.423		0.410		0.211		0.212	
1.0	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00216		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00273		0.00366	
--	Potassium	2.72		2.14		2.49		1.72		2.56		2.26		4.24		4.23	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	152.0		109.0		117.0		69.5		67.5		58.0		210.0		213.0	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.944		0.333		0.323		0.162		0.157		0.214		1.930		1.930	
	Total water																
3788	Aluminum	0.121		0.171		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.0045		0.00617		0.00772		0.00612		0.00768		0.00659		0.00599		0.00563	
0.070	Arsenic	0.00289		0.00443		0.00708		0.00937		0.011		0.00834		0.00749		0.00434	
265	Barium	0.0366		0.0387		0.0415		0.0323		0.0524		0.0433		0.0633		0.0619	
8.0	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.00476		0.0031		0.000997		0.000907		0.000171	ND	0.00068		0.00732		0.00722	
--	Calcium	94.7		94		111		118		112		117		200		204	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.0052		0.00518		0.00358		0.00403		0.0022		0.00285		0.00724		0.00543	
--	Iron	0.218		0.307		0.435		0.343		0.42		0.386		0.873		0.47	
4.0	Lead	0.00978		0.018		0.0396		0.0418		0.0247		0.0371		0.0278		0.0135	
--	Magnesium	16.7		15.3		25.4		29.2		26.5		25.1		53.7		53.7	
--	Manganese	0.119		0.0989		0.304		0.169		0.445		0.397		0.241		0.24	
1.0	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
76.0	Nickel	0.00241		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00298		0.00299	
--	Potassium	2.76		2.16		2.45		1.76		2.85		2.24		4.44		4.41	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	142		110		120		69		70.7		54.1		200		205	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	1.13		0.435		0.404		0.232		0.196		0.232		2		1.93	

Table F-1c. (cont.)

		OU3 Samples															
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3-9-SW-SCBOU4		OU3-0-SW-SCBOU4		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCHFTR		OU3-0-SW-SCOU3BC		OU3-9-SW-SCOU3BC	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	3/16/2015		5/28/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		3/11/2015		3/11/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	305		298		381		416		388		395		721		731	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	4.4		5.6		5.6		4		1.415	ND	1.415	ND	1.415	ND	1.415	ND
--	Nitrate, as N	0.101		0.15		0.082		0.0333		0.0272		0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	243		187		208		136		133		97.7		482		501	
--	Sulfate	160		127		166		204		134		216		221		227	
--	Alkalinity, as CaCO3	115		112		132		138		169		154		183		202	
--	Total Dissolved Solids	700		580		720		620		536		676		1250		1360	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3 Samples															
		OU3-0-SW-SCOU3BC		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	5/27/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		11/12/2014		3/13/2015		5/28/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.003		0.007		0.005		0.006		0.007		0.005		0.007		0.006	
0.070	Arsenic	0.000	ND	0.004		0.006		0.007		0.006		0.004		0.003		0.005	
265	Barium	0.110		0.040		0.031		0.048		0.043		0.036		0.038		0.030	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.0052		0.0007		0.0002	ND	0.0002	ND	0.0005		0.0002	ND	0.0002	ND	0.0002	ND
--	Calcium	302		108		115		106		116		113		101		107	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0033		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.146		0.046	ND	0.046	ND	0.046	ND
4.0	Lead	0.000	ND	0.005		0.000	ND	0.000	ND	0.015		0.000	ND	0.000	ND	0.000	ND
--	Magnesium	80.7		25.0		28.0		23.6		25.8		23.1		22.3		24.2	
--	Manganese	0.281		0.266		0.148		0.286		0.336		0.256		0.245		0.140	
1.0	Mercury	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00384		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	6.43		2.42		1.75		2.47		2.39		2.56		2.51		1.96	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	304.0		116.0		68.5		67.5		55.5		67.5		126.0		97.9	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	1.150		0.386		0.228		0.143		0.223		0.174		0.402		0.165	
	Total water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.152		0.016	ND	0.016	ND
2.0	Antimony	0.00275		0.00712		0.00617		0.00787		0.00644		0.00796		0.00786		0.00621	
0.070	Arsenic	0.000106	ND	0.00658		0.00907		0.0102		0.00789		0.00885		0.00689		0.00764	
265	Barium	0.111		0.0399		0.0334		0.0524		0.0422		0.0433		0.0406		0.0318	
8.0	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.00539		0.0013		0.00136		0.000171	ND	0.000761		0.00114		0.0011		0.00102	
--	Calcium	281		112		124		114		111		120		102		110	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00373		0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.00419		0.00295		0.00408		0.00223		0.00279		0.00605		0.00291		0.00265	
--	Iron	0.128		0.406		0.354		0.341		0.328		0.719		0.436		0.381	
4.0	Lead	0.00211		0.0311		0.044		0.0216		0.0351		0.0617		0.0314		0.0261	
--	Magnesium	73.8		25.5		28.1		26.1		25.1		26.8		22.4		24.3	
--	Manganese	0.278		0.277		0.181		0.315		0.325		0.335		0.265		0.154	
1.0	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000002595	ND	0.00000446	ND	0.00000446	ND
76.0	Nickel	0.00358		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	6.49		2.43		1.75		2.86		2.35		2.43		2.48		1.9	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	292		120		72.7		71.9		52.1		73.1		126		98.6	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	1.15		0.441		0.308		0.186		0.234		0.309		0.469		0.237	

Table F-1c. (cont.)

		OU3 Samples													
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3-0-SW-SCOU3BC		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRF72		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR		OU3-0-SW-SCRFR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	5/27/2015		3/13/2015		5/28/2015		9/1/2015		10/9/2015		11/12/2014		3/13/2015		5/28/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
--	Hardness, as CaCO3	1010		385		425		391		381		410		346		376	
--	Phosphate, Total (as P)	0.0106	ND	1.01		0.0106	ND	0.054		0.0106	ND	0.0614		0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.415	ND	4.8		4.8		1.415	ND	1.415	ND	5.6		5.6		1.415	ND
--	Nitrate, as N	0.00345	ND	0.0747		0.027		0.0314		0.00345	ND	0.018		0.0593		0.00345	ND
--	Chloride	826		211		137		127		98.9		133		215		183	
--	Sulfate	155		164		204		129		215		193		175		174	
--	Alkalinity, as CaCO3	264		136		133		181		152		144		129		126	
--	Total Dissolved Solids	2190		680		608		592		664		640		708		672	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3 Samples															
		OU3-0-SW-SCRFR		OU3-0-SW-SCURTFB Dups ave		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB		OU3-9-SW-SCURTFB		OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/1/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015		9/2/2015		3/10/2015		5/27/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
	Dissolved water																
3788	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.007		0.005		0.007		0.005		0.005		0.005		0.008		0.005	
0.070	Arsenic	0.007		0.005		0.006		0.007		0.008		0.008		0.004		0.005	
265	Barium	0.050		0.034		0.034		0.031		0.039		0.041		0.049		0.041	
8.0	Beryllium	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
--	Cadmium	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0039		0.0020	
--	Calcium	101		110		99		107		92		93		158		153	
--	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
--	Copper	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0024		0.0030	
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
4.0	Lead	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.000	ND	0.002		0.000	ND
--	Magnesium	22.0		20.7		20.4		22.7		17.9		17.2		35.9		36.6	
--	Manganese	0.442		0.128		0.102		0.097		0.127		0.129		0.206		0.132	
1.0	Mercury	0.0000045	ND	0.0000026	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	2.76		2.21		2.38		1.98		2.35		2.34		3.18		1.74	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	72.1		62.0		117.0		97.0		59.6		59.9		159.0		104.0	
--	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND
--	Zinc	0.115		0.205		0.231		0.122		0.091		0.096		1.350		0.928	
	Total water																
3788	Aluminum	0.156		0.26		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
2.0	Antimony	0.00892		0.0068		0.00623		0.00545		0.00514		0.00497		0.00803		0.00527	
0.070	Arsenic	0.0137		0.0073		0.00676		0.00739		0.0099		0.00993		0.00548		0.00591	
265	Barium	0.0545		0.039		0.0347		0.0343		0.0414		0.0391		0.0492		0.0427	
8.0	Beryllium	0.0000119	ND	0.000012	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
--	Cadmium	0.000986		0.00110		0.000863		0.00111		0.000622		0.00058		0.00467		0.00382	
--	Calcium	103		112		97.4		94.9		98.4		98.2		152		145	
--	Chromium	0.000436	ND	0.00044	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.000042	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
--	Copper	0.00529		0.0058		0.00229		0.000216	ND	0.00206		0.00215		0.00338		0.00323	
--	Iron	0.851		0.43		0.221		0.197		0.275		0.282		0.17		0.046	ND
4.0	Lead	0.0653		0.048		0.014		0.0134		0.0177		0.0177		0.0138		0.00553	
--	Magnesium	23.1		23.2		20.5		22.5		19.2		19.3		36		34.1	
--	Manganese	0.513		0.15		0.105		0.0969		0.155		0.154		0.214		0.134	
1.0	Mercury	0.00000446	ND	0.00000260	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
76.0	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.01		2.3		2.38		1.89		2.79		2.85		3.08		1.87	
--	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.000022	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	73.6		65.7		113		84.3		65.8		65.8		155		97.5	
--	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.243		0.33		0.283		0.187		0.166		0.175		1.46		0.957	

Table F-1c. (cont.)

		OU3 Samples												
Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3-0-SW-SCRFR		OU3-0-SW-SCURTFB Dups ave		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB		OU3-0-SW-SCURTFB	OU3-9-SW-SCURTFB		OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
	Operable Unit	OU3		OU3		OU3		OU3		OU3	OU3		OU3		OU3	
	Sample date	9/1/2015		11/12/2014		3/13/2015		5/28/2015		9/2/2015	9/2/2015		3/10/2015		5/27/2015	
	Habitat	Stream		Stream		Stream		Stream		Stream	Stream		Stream		Stream	
--	Hardness, as CaCO3	353		374		327		330		325	325		528		502	
--	Phosphate, Total (as P)	0.0878		0.054		0.0106	ND	0.0106	ND	0.05	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	8		12.0		1.415	ND	1.415	ND	4	3.6		1.415	ND	1.415	ND
--	Nitrate, as N	0.00345	ND	0.22		0.105		0.0122		0.0271	0.0281		0.00345	ND	0.00345	ND
--	Chloride	137		126		190		178		123	122		346		207	
--	Sulfate	140		184		153		169		130	132		215		214	
--	Alkalinity, as CaCO3	159		130		124		131		135	135		175		186	
--	Total Dissolved Solids	616		484		644		644		472	532		1040		812	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3 Samples			
		OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
	Operable Unit	OU3		OU3	
	Sample date	8/31/2015		10/8/2015	
	Habitat	Stream		Stream	
	Dissolved water				
3788	Aluminum	0.016	ND	0.016	ND
2.0	Antimony	0.011		0.018	
0.070	Arsenic	0.015		0.008	
265	Barium	0.049		0.044	
8.0	Beryllium	0.000012	ND	0.000012	ND
--	Cadmium	0.0002	ND	0.0006	
--	Calcium	127		181	
--	Chromium	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND
--	Copper	0.0034		0.0032	
--	Iron	0.046	ND	0.046	ND
4.0	Lead	0.004		0.003	
--	Magnesium	32.2		45.4	
--	Manganese	0.141		0.158	
1.0	Mercury	0.0000045	ND	0.0000045	ND
76.0	Nickel	0.00079	ND	0.00079	ND
--	Potassium	3.89		5.13	
--	Selenium	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND
--	Sodium	77.4		93.9	
--	Thallium	0.000022	ND	0.000022	ND
--	Vanadium	0.001	ND	0.001	ND
--	Zinc	0.137		0.732	
	Total water				
3788	Aluminum	0.016	ND	0.016	ND
2.0	Antimony	0.0114		0.0186	
0.070	Arsenic	0.0179		0.0102	
265	Barium	0.0493		0.0438	
8.0	Beryllium	0.0000119	ND	0.0000119	ND
--	Cadmium	0.000581		0.00124	
--	Calcium	135		187	
--	Chromium	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND
--	Copper	0.00419		0.00399	
--	Iron	0.199		0.114	
4.0	Lead	0.0253		0.0123	
--	Magnesium	35.5		47.1	
--	Manganese	0.143		0.159	
1.0	Mercury	0.00000446	ND	0.00000446	ND
76.0	Nickel	0.00079	ND	0.00079	ND
--	Potassium	4.26		4.95	
--	Selenium	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND
--	Sodium	86		96.2	
--	Thallium	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND
--	Zinc	0.159		0.797	

Table F-1c. (cont.)

Richardson Flats BHHRA (EPA 2003, Table 3-6) Calculated RBC* (mg/L)	Sample ID	OU3 Samples: OU3-0-SW-SPCWR		OU3-0-SW-SPCWR	
	Operable Unit	OU3		OU3	
	Sample date	8/31/2015		10/8/2015	
	Habitat	Stream		Stream	
--	Hardness, as CaCO3	483		660	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.415	ND	1.415	ND
--	Nitrate, as N	0.0199		0.00345	ND
--	Chloride	181		198	
--	Sulfate	178		321	
--	Alkalinity, as CaCO3	184		204	
--	Total Dissolved Solids	740		908	

Notes:
Results in mg/L
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Samples were collected quarterly from November 2014 to October 2015
Samples analyzed for dissolved metals were field filtered by sample collectors
UCLM calculated using Excel confidence function (CONFIDENCE(alpha,standard_dev,size))

Key:
-- = no RBC available
ID = Identification
mg/L = milligrams per liter
ND = not detected
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3
SW = Surface Water

Table F-2. Summary statistics for groundwater samples

	N	count of NDs	% detected	Minimum	Maximum	Average	UCLM	Stdev	GeoMean
Dissolved water									
Aluminum	86	81	6%	0.016	0.81	0.034	0.019	9.4E-02	0.019
Antimony	86	58	33%	0.00047	0.47	0.029	0.018	8.6E-02	0.0019
Arsenic	86	12	86%	0.00011	0.40	0.030	0.015	7.2E-02	0.0054
Barium	86	0	100%	0.0093	0.32	0.079	0.013	6.2E-02	0.063
Beryllium	86	86	0%	0.000012	0.000012	0.000012	--	1.4E-20	0.000012
Cadmium	86	61	29%	0.00017	0.43	0.033	0.017	8.1E-02	0.0009
Calcium	86	0	100%	52.0	595	232	25.6	1.2E+02	202
Chromium	86	83	3%	0.00044	0.0054	0.00055	0.00013	6.6E-04	0.00047
Cobalt	86	68	21%	0.000042	0.099	0.0041	0.0027	1.3E-02	0.00014
Copper	86	59	31%	0.00022	0.15	0.014	0.0061	3.0E-02	0.00091
Iron	86	22	74%	0.046	28.2	3.0	1.2	5.9E+00	0.60
Lead	86	55	36%	0.00021	0.58	0.043	0.021	1.0E-01	0.0015
Magnesium	86	0	100%	10.4	150	52.0	5.9	2.9E+01	45.3
Manganese	86	2	98%	0.00060	9.7	2.0	0.52	2.5E+00	0.51
Mercury	86	79	8%	0.0000045	0.00093	0.000044	0.000033	1.6E-04	0.0000064
Nickel	86	35	59%	0.00079	0.057	0.0052	0.0016	8.0E-03	0.0025
Potassium	86	4	95%	0.12	22.0	3.6	0.71	3.5E+00	2.7
Selenium	86	76	12%	0.00014	0.025	0.00079	0.00059	2.9E-03	0.00020
Silver	86	86	0%	0.000022	0.000022	0.000022	--	2.4E-20	0.000022
Sodium	86	0	100%	16.0	297	115	12.4	6.1E+01	98.2
Thallium	86	71	17%	0.000022	0.062	0.0031	0.0022	1.1E-02	0.000063
Vanadium	86	76	12%	0.00053	0.040	0.0021	0.0012	5.8E-03	0.00075
Zinc	86	22	74%	0.0024	56.4	7.6	3.2	1.6E+01	0.15
Total water									
Aluminum	86	47	45%	0.016	3.71	0.31	0.13	6.3E-01	0.069
Antimony	86	49	43%	0.000474	0.484	0.030	0.018	8.8E-02	0.0023
Arsenic	86	6	93%	0.000106	0.4135	0.032	0.015	7.5E-02	0.0080
Barium	86	0	100%	0.00897	0.372	0.083	0.013	6.5E-02	0.066
Beryllium	86	86	0%	0.0000119	0.0000119	0.000012	--	1.4E-20	0.000012
Cadmium	86	52	40%	0.000171	0.436	0.034	0.017	8.2E-02	0.0011
Calcium	86	0	100%	52.75	568	229	25.6	1.2E+02	200
Chromium	86	77	10%	0.000436	0.00762	0.00082	0.00026	1.2E-03	0.00055
Cobalt	86	68	21%	0.0000416	0.0981	0.0042	0.0027	1.3E-02	0.00014
Copper	86	43	50%	0.000216	0.156	0.020	0.0074	3.6E-02	0.0019
Iron	86	8	91%	0.046	28.5	3.3	1.2	5.8E+00	1.0
Lead	86	19	78%	0.000214	0.769	0.089	0.037	1.8E-01	0.0086
Magnesium	86	0	100%	10.35	149	51.7	5.9	2.8E+01	44.9
Manganese	86	2	98%	0.0006	9.74	1.9	0.50	2.4E+00	0.55
Mercury	86	67	22%	0.00000446	0.00559	0.00024	0.00015	7.1E-04	0.000014
Nickel	86	33	62%	0.00079	0.0574	0.0055	0.0017	8.2E-03	0.0026
Potassium	86	3	97%	0.115	22.7	3.7	0.71	3.5E+00	2.9
Selenium	86	75	13%	0.000135	0.025	0.00081	0.00060	2.9E-03	0.00021
Silver	86	80	7%	0.0000217	0.00404	0.00021	0.00015	7.2E-04	0.000030
Sodium	86	0	100%	16.05	310	114	12.5	6.1E+01	97.2
Thallium	86	71	17%	0.0000217	0.0616	0.0031	0.0022	1.1E-02	0.000063
Vanadium	86	75	13%	0.00053	0.0542	0.0031	0.0019	9.3E-03	0.00081
Zinc	86	8	91%	0.00238	56	7.7	3.2	1.6E+01	0.24
Hardness, as CaCO3	86	0	100%	174.5	2030	786	85.0	4.1E+02	687
Phosphate, Total (as P)	83	39	53%	0.0106	2.09	0.13	0.053	2.6E-01	0.043
Total Suspended Solids	83	35	58%	1.415	82.4	11.2	3.3	1.6E+01	4.9
Nitrate, as N	83	51	39%	0.00345	3.24	0.15	0.089	4.3E-01	0.015
Chloride	83	0	100%	25.05	1040	324	44.4	2.2E+02	255
Sulfate	83	0	100%	16.95	1300	385	61.9	3.0E+02	288
Alkalinity, as CaCO3	83	0	100%	97.6	512	226	16.9	8.2E+01	213
Total Dissolved Solids	83	0	100%	234	3200	1346	138	6.7E+02	1180

Note:
UCLM calculated using Excel confidence function (CONFIDENCE(alpha,standard_dev,size))

Table F-2a. Screening results for OU2 Floodplain groundwater samples compared with EPA tapwater screening values

Tapwater (mg/L)		Sample ID	N	count of NDs	% detected	OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(B)		OU2-0-GW-P2-2(B)	
						Dups ave.											
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date				3/11/2015		5/11/2015		8/25/2015		10/6/2015		3/11/2015		10/6/2015	
		Habitat				Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water															
20.0	n	Aluminum	33	31	6%	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	33	24	27%	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	**0.071**		**0.127**	
0.000052	c	Arsenic	33	3	91%	**0.00213**		**0.00011**	ND	**0.00292**		**0.00258**		**0.01020**		**0.01230**	
3.8	n	Barium	33	0	100%	0.2595		0.2710		0.2950		0.3160		0.0173		0.0444	
0.025	n	Beryllium	33	33	0%	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	33	27	18%	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	**0.174**		**0.426**	
--		Calcium	33	0	100%	251		237		253		285		337		525	
22.0	n	Chromium	33	31	6%	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	33	29	12%	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	33	23	30%	0.00661		0.00022	ND	0.00022	ND	0.00022	ND	0.07380		0.14900	
14.0	n	Iron	33	7	79%	0.617		0.545		0.532		0.652		0.046	ND	0.046	ND
0.015	L	Lead	33	20	39%	0.0040		0.0002	ND	0.0022		0.0020		**0.234**		**0.485**	
--		Magnesium	33	0	100%	69.4		67.0		71.7		76.1		80.4		135.0	
0.43	n	Manganese	33	0	100%	**2.09**		**2.11**		**1.97**		**2.23**		**1.34**		**3.21**	
0.0057	n	Mercury	33	32	3%	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND
0.39	n	Nickel	33	12	64%	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00623		0.01220	
--		Potassium	33	0	100%	3.73		3.55		4.36		4.39		9.48		22.00	
0.10	n	Selenium	33	30	9%	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.002790	
0.094	n	Silver	33	33	0%	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	33	0	100%	65.1		60.1		64.2		69.3		96.5		221.0	
0.00020	n	Thallium	33	29	12%	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	**0.024**		**0.060**	
0.086	n	Vanadium	33	33	0%	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	33	11	67%	0.44		0.16		0.16		0.09		**35.0**		**56.4**	
		Total water															
20.0	n	Aluminum	33	20	39%	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	33	22	33%	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	**0.069**		**0.128**	
0.000052	c	Arsenic	33	2	94%	**0.00261**		**0.00011**	ND	**0.00317**		**0.00349**		**0.01070**		**0.01450**	
3.8	n	Barium	33	0	100%	0.2495		0.2700		0.2930		0.3720		0.0172		0.0465	
0.025	n	Beryllium	33	33	0%	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	33	24	27%	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	**0.167**		**0.436**	
--		Calcium	33	0	100%	248		244		260		278		322		532	
22.0	n	Chromium	33	31	6%	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	33	29	12%	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	33	21	36%	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.07200		0.15600	
14.0	n	Iron	33	3	91%	0.695		0.627		0.580		0.659		0.046	ND	0.046	ND
0.015	L	Lead	33	11	67%	0.0073		0.0063		0.0061		0.0053		**0.227**		**0.516**	
--		Magnesium	33	0	100%	69.3		68.7		74.6		74.4		81.0		136.0	
0.43	n	Manganese	33	0	100%	**2.08**		**2.13**		**2.17**		**2.16**		**1.32**		**3.45**	
0.0057	n	Mercury	33	26	21%	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000217	
0.39	n	Nickel	33	11	67%	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00582		0.01250	
--		Potassium	33	0	100%	3.74		3.71		4.46		4.28		9.29		22.70	
0.10	n	Selenium	33	30	9%	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.002940	
0.094	n	Silver	33	31	6%	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	33	0	100%	62.5		61.7		65.7		68.0		92.5		224.0	
0.00020	n	Thallium	33	29	12%	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	**0.024**		**0.062**	
0.086	n	Vanadium	33	32	3%	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	33	7	79%	0.52		0.18		0.19		0.12		**34.6**		**56.0**	

Table F-2a. (cont.)

	Sample ID				OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(B)		OU2-0-GW-P2-2(B)	
					Dups ave.											
	Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date				3/11/2015		5/11/2015		8/25/2015		10/6/2015		3/11/2015		10/6/2015	
	Habitat				Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
Tapwater (mg/L)		N	count of NDs	% detected												
--	Hardness, as CaCO3	33	0	100%	904		893		956		1000		1140		1890	
--	Phosphate, Total (as P)	32	4	88%	0.289		0.21		0.265		0.278		0.0106	ND	0.0106	ND
--	Total Suspended Solids	32	16	50%	1.42	ND	1.415	ND	1.415	ND	1.415	ND	1.415	ND	1.415	ND
32.0	Nitrate, as N	32	20	38%	0.00345	ND	0.0116		0.471		0.00345	ND	0.00345	ND	0.07	
--	Chloride	32	0	100%	180		214		252		229		226		644	
--	Sulfate	32	0	100%	418		457		472		504		809		1300	
--	Alkalinity, as CaCO3	32	0	100%	275		259		297		279		188		147	
--	Total Dissolved Solids	32	0	100%	1145		1290		1410		1320		1790		3120	

Table F-2a. (cont.)

Tapwater (mg/L)		Sample ID	OU2-0-GW-P2-2(B)		OU2-0-GW-P2-2(B)		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-5		OU2-0-GW-P2-5	
							Dups ave.				Dups ave.				Dups ave.		Dups ave.	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	5/11/2015		8/25/2015		3/13/2015		5/12/2015		8/26/2015		10/6/2015		3/10/2015		5/11/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	**0.0847**		**0.151**		0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	**0.270**		**0.358**	
0.000052	c	Arsenic	**0.01270**		**0.01740**		**0.02955**		**0.03270**		**0.03720**		**0.04920**		**0.188**		**0.229**	
3.8	n	Barium	0.0279		0.0527		0.0412		0.0319		0.0297		0.0346		0.1055		0.0863	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	**0.277**		**0.401**		0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	**0.01190**		0.00835	
--		Calcium	416		595		570		432		248		279		94		58	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	**0.0314**		**0.0254**		**0.0118**		**0.0133**		0.000042	ND	0.000042	ND
0.80	n	Copper	0.09200		0.06300		0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.01065		0.00116	
14.0	n	Iron	0.046	ND	0.046	ND	13.150		8.950		5.465		5.400		8.27		4.95	
0.015	L	Lead	**0.313**		**0.575**		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	**0.119**		**0.030**	
--		Magnesium	105.0		146.0		150.0		111.0		65.6		71.9		16.4		11.2	
0.43	n	Manganese	**2.35**		**4.52**		**8.89**		**7.06**		**3.97**		**4.48**		**1.73**		**1.21**	
0.0057	n	Mercury	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000078		0.000004	ND
0.39	n	Nickel	0.00980		0.01190		0.02235		0.01790		0.00890		0.00939		0.00346		0.00241	
--		Potassium	11.60		21.20		5.04		4.53		3.81		4.11		2.54		2.45	
0.10	n	Selenium	0.002130		0.004090		0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	114.0		186.0		147.5		132.0		80.7		90.5		19.6		16.4	
0.00020	n	Thallium	**0.035**		**0.062**		0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	**47.3**		**56.3**		**7.64**		5.65		3.18		3.30		**8.47**		5.43	
		Total water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.414		0.113		0.153		0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	**0.0900**		**0.155**		0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	**0.277**		**0.368**	
0.000052	c	Arsenic	**0.01390**		**0.02260**		**0.03090**		**0.03220**		**0.03620**		**0.05330**		**0.200**		**0.233**	
3.8	n	Barium	0.0289		0.0521		0.0466		0.0347		0.0315		0.0389		0.1105		0.0867	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	**0.287**		**0.393**		0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	**0.01235**		**0.01015**	
--		Calcium	431		566		568		405		252		284		91		60	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	**0.0306**		**0.0255**		**0.0117**		**0.0151**		0.000042	ND	0.000042	ND
0.80	n	Copper	0.10700		0.08110		0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.01520		0.03865	
14.0	n	Iron	0.046	ND	0.164		14.000		9.230		4.665		5.640		8.39		5.24	
0.015	L	Lead	**0.381**		**0.737**		0.0053		0.0031		0.0048		0.0024		**0.165**		**0.417**	
--		Magnesium	110.0		149.0		145.0		103.0		65.9		73.0		16.7		11.2	
0.43	n	Manganese	**2.41**		**4.51**		**8.98**		**7.05**		**3.88**		**4.48**		**1.79**		**1.26**	
0.0057	n	Mercury	0.000202		0.000315		0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000184		0.000508	
0.39	n	Nickel	0.01060		0.01310		0.02220		0.01790		0.00901		0.01070		0.00345		0.00245	
--		Potassium	12.10		20.90		5.14		4.93		3.70		4.17		2.59		2.44	
0.10	n	Selenium	0.002160		0.003740		0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	117.0		189.0		146.5		125.0		81.3		91.9		18.9		16.5	
0.00020	n	Thallium	**0.037**		**0.059**		0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	**49.9**		**55.6**		**7.76**		5.64		3.17		3.36		**8.53**		5.90	

Table F-2a. (cont.)

Tapwater (mg/L)	Sample ID	OU2-0-GW-P2-2(B)		OU2-0-GW-P2-2(B)		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-5		OU2-0-GW-P2-5	
						Dups ave.				Dups ave.				Dups ave.		Dups ave.	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	5/11/2015		8/25/2015		3/13/2015		5/12/2015		8/26/2015		10/6/2015		3/10/2015		5/11/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	1530		2030		2015		1440		900		1010		297		197	
--	Phosphate, Total (as P)	0.0106	ND	0.0532		0.199		0.209		0.211		0.233		0.196		0.154	
--	Total Suspended Solids	1.415	ND	9.2		6.60		6.4		8.80		4.4		17.80		15.60	
32.0	Nitrate, as N	0.0304		1.31		0.00345	ND	0.00345	ND	0.40800		0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	361		585		857		642		427		387		36		32	
--	Sulfate	1170		1290		1045		786		438		470		157		43	
--	Alkalinity, as CaCO3	186		167		98		102		112		123		157		158	
--	Total Dissolved Solids	2420		3200		3055		2330		1445		1560		436		322	

Table F-2a. (cont.)

Tapwater (mg/L)		Sample ID	OU2-0-GW-P2-5		OU2-0-GW-P2-5		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E1125		OU2-0-GW-T3W0375	
			Dups ave.		Dups ave.													
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	8/25/2015		10/6/2015		3/13/2015		5/12/2015		8/26/2015		10/7/2015		3/13/2015		3/13/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.170		0.016	ND	0.016	ND	0.244		0.016	ND
0.0078	n	Antimony	**0.464**		**0.469**		0.000474	ND	0.000474	ND	0.000474	ND	0.00467		0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.398**		**0.363**		**0.00201**		**0.00286**		**0.00379**		**0.00828**		**0.00011**	ND	**0.00687**	
3.8	n	Barium	0.1175		0.0982		0.0656		0.0651		0.0708		0.0707		0.0304		0.0496	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND
--		Calcium	61		52		293		265		273		242		168		144	
22.0	n	Chromium	0.003113		0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.00235		0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00239		0.00022	ND
14.0	n	Iron	6.92		6.43		1.28		1.44		1.25		0.979		0.242		0.861	
0.015	L	Lead	**0.0289**		**0.0381**		0.0002	ND	0.0031		0.0002	ND	0.0054		0.0002	ND	0.0002	ND
--		Magnesium	13.0		10.4		74.8		72.9		70.8		60.1		42.3		34.5	
0.43	n	Manganese	**1.53**		**1.31**		**0.70**		**0.62**		**0.63**		**0.60**		0.09		**0.46**	
0.0057	n	Mercury	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND
0.39	n	Nickel	0.00292		0.00217		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00323		0.00212	
--		Potassium	2.91		2.67		2.49		2.20		2.59		2.94		6.53		3.31	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	17.6		16.0		111.0		106.0		125.0		104.0		185.0		155.0	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	2.22		2.55		0.011		0.002	ND	0.017		0.192		0.018		0.005	ND
		Total water																
20.0	n	Aluminum	0.094		0.117		2.900		0.355		0.737		0.312		1.280		0.016	ND
0.0078	n	Antimony	**0.463**		**0.484**		0.002320		0.000474	ND	0.000474	ND	0.00476		0.002080		0.000474	ND
0.000052	c	Arsenic	**0.414**		**0.385**		**0.01030**		**0.00349**		**0.00651**		**0.00889**		**0.00226**		**0.00659**	
3.8	n	Barium	0.1170		0.1003		0.0875		0.0689		0.0787		0.0728		0.0461		0.0477	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00225		0.00284		0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00060		0.00017	ND
--		Calcium	63		53		303		255		279		247		162		144	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.005670		0.000436	ND	0.000436	ND	0.000436	ND	0.004020		0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.05560		0.05465		0.00440		0.00022	ND	0.00224		0.00252		0.00436		0.00022	ND
14.0	n	Iron	7.01		6.74		5.05		1.74		2.13		1.350		1.510		0.885	
0.015	L	Lead	**0.6345**		**0.7690**		**0.0264**		0.0050		**0.0184**		0.0134		0.0119		0.0031	
--		Magnesium	13.0		10.4		76.9		68.8		70.8		63.0		40.6		35.3	
0.43	n	Manganese	**1.66**		**1.37**		**0.72**		**0.62**		**0.65**		**0.60**		0.22		**0.44**	
0.0057	n	Mercury	0.001056		0.001265		0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND
0.39	n	Nickel	0.00375		0.00232		0.00272		0.00079	ND	0.00079	ND	0.00079	ND	0.00526		0.00209	
--		Potassium	3.08		2.66		3.03		2.35		2.59		2.99		6.37		3.32	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.002006		0.002855		0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	17.6		16.1		115.0		103.0		125.0		113.0		159.0		155.0	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00900		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	2.51		3.10		0.051		0.008		0.043		0.203		0.041		0.012	

Table F-2a. (cont.)

Tapwater (mg/L)	Sample ID	OU2-0-GW-P2-5	OU2-0-GW-P2-5		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E1125		OU2-0-GW-T3W0375	
		Dups ave.	Dups ave.													
	Operable Unit	OU2	OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	8/25/2015	10/6/2015		3/13/2015		5/12/2015		8/26/2015		10/7/2015		3/13/2015		3/13/2015	
	Habitat	Floodplain	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	210	175		1070		919		989		876		573		505	
--	Phosphate, Total (as P)	0.186	0.213		0.0875		0.0106	ND	0.118		0.104		NS		0.119	
--	Total Suspended Solids	12.00	18.70		10		13.2		47.2		14.4		NS		1.415	ND
32.0	Nitrate, as N	0.01143	0.00345	ND	0.00345	ND	0.00345	ND	0.457		0.00345	ND	NS		0.00345	ND
--	Chloride	33	25		361		329		399		301		NS		315	
--	Sulfate	33	17		307		307		245		247		NS		212	
--	Alkalinity, as CaCO3	191	173		458		385		497		436		NS		181	
--	Total Dissolved Solids	320	234		1440		1710		1350		1190		NS		992	

Table F-2a. (cont.)

Tapwater (mg/L)		Sample ID	OU2-0-GW-T3W0375		OU2-0-GW-T3W0375		OU2-0-GW-T3W0375		OU2-0-GW-T4E0875		OU2-0-GW-T4E0875		OU2-0-GW-T4E0875		OU2-0-GW-T4E0875		OU2-0-GW-T5E0875	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	5/12/2015		8/26/2015		10/6/2015		3/11/2015		5/12/2015		8/26/2015		10/6/2015		3/11/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.00794**		**0.00665**		**0.00490**		**0.00011**	ND	**0.00205**		**0.00215**		**0.00234**		**0.00296**	
3.8	n	Barium	0.0585		0.0630		0.0709		0.0719		0.0710		0.0818		0.0740		0.0777	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND
--		Calcium	170		169		197		195		170		175		146		183	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND
14.0	n	Iron	0.933		2.10		2.14		0.046	ND	0.046	ND	0.046	ND	0.110		0.486	
0.015	L	Lead	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--		Magnesium	40.9		41.1		45.9		43.7		37.3		39.6		29.5		46.5	
0.43	n	Manganese	**0.53**		**0.58**		**0.68**		0.13		0.14		0.11		0.13		0.19	
0.0057	n	Mercury	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND
0.39	n	Nickel	0.00297		0.00326		0.00361		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00401	
--		Potassium	3.94		4.32		4.51		1.60		1.38		1.66		1.44		2.67	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	177.0		169.0		157.0		139.0		126.0		139.0		124.0		76.1	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.002	ND	0.002	ND	0.002	ND	0.005	ND	0.006		0.002	ND	0.002	ND	0.040	
		Total water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.509		0.311		0.434		0.016	ND	0.016	ND
0.0078	n	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.00830**		**0.00740**		**0.00545**		**0.00011**	ND	**0.00222**		**0.00317**		**0.00236**		**0.00290**	
3.8	n	Barium	0.0566		0.0649		0.0765		0.0794		0.0784		0.0879		0.0728		0.0774	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND
--		Calcium	155		168		198		193		159		160		137		179	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND
14.0	n	Iron	0.928		1.94		2.17		0.414		0.337		0.581		0.144		0.541	
0.015	L	Lead	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--		Magnesium	36.9		39.2		47.4		43.8		34.2		34.9		30.0		44.7	
0.43	n	Manganese	**0.53**		**0.61**		**0.73**		0.16		0.14		0.11		0.12		0.19	
0.0057	n	Mercury	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND
0.39	n	Nickel	0.00282		0.00314		0.00331		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00375	
--		Potassium	4.36		4.42		4.58		1.70		1.62		1.54		1.62		2.64	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	168.0		167.0		162.0		132.0		130.0		124.0		118.0		70.9	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.007		0.002	ND	0.002	ND	0.014		0.002	ND	0.002	ND	0.002	ND	0.013	

Table F-2a. (cont.)

Tapwater (mg/L)	Sample ID	OU2-0-GW-T3W0375		OU2-0-GW-T3W0375		OU2-0-GW-T3W0375		OU2-0-GW-T4E0875		OU2-0-GW-T4E0875		OU2-0-GW-T4E0875		OU2-0-GW-T4E0875		OU2-0-GW-T5E0875	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	5/12/2015		8/26/2015		10/6/2015		3/11/2015		5/12/2015		8/26/2015		10/6/2015		3/11/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	540		580		690		661		539		543		465		630	
--	Phosphate, Total (as P)	0.123		0.264		0.266		0.0528		0.0655		0.058		0.0724		0.0675	
--	Total Suspended Solids	1.415	ND	3.2		1.415	ND	4		5.6		1.415	ND	1.415	ND	1.415	ND
32.0	Nitrate, as N	0.00345	ND	0.0761		0.00345	ND	0.182		0.0689		0.105		0.00345	ND	0.00345	ND
--	Chloride	371		363		248		259		240		313		211		186	
--	Sulfate	186		321		421		253		262		239		229		292	
--	Alkalinity, as CaCO3	203		277		240		240		234		240		243		188	
--	Total Dissolved Solids	1190		1030		1160		992		1290		960		852		800	

Table F-2a. (cont.)

Tapwater (mg/L)		Sample ID	OU2-0-GW-T5E0875		OU2-0-GW-T5E0875		OU2-0-GW-T5E0875	
			Dups ave.					
		Operable Unit	OU2		OU2		OU2	
		Sample date	5/12/2015		8/25/2015		10/6/2015	
		Habitat	Floodplain		Floodplain		Floodplain	
		Dissolved water						
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.000474	ND	0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.00323**		**0.00460**		**0.00427**	
3.8	n	Barium	0.0644		0.0546		0.0631	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00017	ND	0.00017	ND	0.00017	ND
--		Calcium	148		82		67	
22.0	n	Chromium	0.000436	ND	0.005430		0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.00022	ND	0.00295		0.00022	ND
14.0	n	Iron	0.327		0.281		0.290	
0.015	L	Lead	0.0002	ND	0.0002	ND	0.0002	ND
--		Magnesium	36.9		21.8		17.8	
0.43	n	Manganese	0.17		0.11		0.10	
0.0057	n	Mercury	0.000004	ND	0.000004	ND	0.000004	ND
0.39	n	Nickel	0.00357		0.00333		0.00205	
--		Potassium	2.58		2.36		2.04	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	74.8		58.2		50.7	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.002	ND	0.002	ND	0.002	ND
		Total water						
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.000474	ND	0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.00302**		**0.00424**		**0.00424**	
3.8	n	Barium	0.0642		0.0499		0.0670	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00017	ND	0.00017	ND	0.00017	ND
--		Calcium	138		82		68	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND
0.80	n	Copper	0.00022	ND	0.00022	ND	0.00022	ND
14.0	n	Iron	0.350		0.309		0.325	
0.015	L	Lead	0.0002	ND	0.0002	ND	0.0002	ND
--		Magnesium	35.5		22.1		17.5	
0.43	n	Manganese	0.17		0.10		0.10	
0.0057	n	Mercury	0.000004	ND	0.000004	ND	0.000004	ND
0.39	n	Nickel	0.00356		0.00256		0.00221	
--		Potassium	2.63		2.35		2.22	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.000022	ND	0.000022	ND	0.000022	ND
--		Sodium	69.4		58.5		50.9	
0.00020	n	Thallium	0.000022	ND	0.000022	ND	0.000022	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.002	ND	0.002	ND	0.006	

Table F-2a. (cont.)

Tapwater (mg/L)	Sample ID	OU2-0-GW-T5E0875		OU2-0-GW-T5E0875		OU2-0-GW-T5E0875	
		Dups ave.					
	Operable Unit	OU2		OU2		OU2	
	Sample date	5/12/2015		8/25/2015		10/6/2015	
	Habitat	Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	489		296		242	
--	Phosphate, Total (as P)	0.031		0.0644		0.0835	
--	Total Suspended Solids	1.42	ND	1.415	ND	1.415	ND
32.0	Nitrate, as N	0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	172		102		64.8	
--	Sulfate	237		56.4		36.6	
--	Alkalinity, as CaCO3	182		230		235	
--	Total Dissolved Solids	874		500		392	

Notes:
Results reported as mg/L
Samples were collected quarterly from March 2015 to October 2015
Samples analyzed for dissolved metals were field filtered by sample collectors

Key:
-- = no tapwater screening value available
GW = Groundwater
ID = Identification
mg/L = milligrams per liter
ND = Non-Detect
NS = Not Sampled; See Section 2.6 for additional details
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3

Table F-2b. Screening results for OU2 Upland groundwater samples compared with EPA tapwater screening values

		Sample ID				OU2-0-GW-T5E1875		OU2-0-GW-T5E1875		OU2-0-GW-T6E0375		OU2-0-GW-T6E0375	
		Operable Unit				OU2		OU2		OU2		OU2	
		Sample date				3/11/2015		5/11/2015		3/10/2015		5/11/2015	
		Habitat				Upland		Upland		Upland		Upland	
Tapwater (mg/L)			N	count of NDs	% detected								
		Dissolved water											
20.0	n	Aluminum	4	4	0%	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	4	4	0%	0.00047	ND	0.00047	ND	0.00047	ND	0.00047	ND
0.000052	c	Arsenic	4	0	100%	**0.0035**		**0.0037**		**0.0056**		**0.0060**	
3.8	n	Barium	4	0	100%	0.092		0.098		0.063		0.070	
0.025	n	Beryllium	4	4	0%	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	4	4	0%	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND
--		Calcium	4	0	100%	179		165		375		329	
22.0	n	Chromium	4	4	0%	0.00044	ND	0.00044	ND	0.00044	ND	0.00044	ND
0.0060	n	Cobalt	4	4	0%	0.00004	ND	0.00004	ND	0.00004	ND	0.00004	ND
0.80	n	Copper	4	4	0%	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND
14.0	n	Iron	4	4	0%	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	4	4	0%	0.00021	ND	0.00021	ND	0.00021	ND	0.00021	ND
--		Magnesium	4	0	100%	35.0		32.7		86.3		76.2	
0.43	n	Manganese	4	2	50%	0.00248		0.01040		0.00060	ND	0.00060	ND
0.0057	n	Mercury	4	4	0%	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	4	4	0%	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	4	2	50%	0.115	ND	0.115	ND	3.060		3.350	
0.10	n	Selenium	4	4	0%	0.00014	ND	0.00014	ND	0.00014	ND	0.00014	ND
0.094	n	Silver	4	4	0%	0.00002	ND	0.00002	ND	0.00002	ND	0.00002	ND
--		Sodium	4	0	100%	52.1		50.7		90.7		87.4	
0.00020	n	Thallium	4	4	0%	0.00002	ND	0.00002	ND	0.00002	ND	0.00002	ND
0.086	n	Vanadium	4	1	75%	0.00053	ND	0.00527		0.00512		0.00698	
6.0	n	Zinc	4	3	25%	0.00450	ND	0.00238	ND	0.0119		0.00238	ND
		Total water											
20.0	n	Aluminum	4	2	50%	0.157		2.050		0.016	ND	0.016	ND
0.0078	n	Antimony	4	4	0%	0.00047	ND	0.00047	ND	0.00047	ND	0.00047	ND
0.000052	c	Arsenic	4	0	100%	**0.0035**		**0.0045**		**0.0054**		**0.0065**	
3.8	n	Barium	4	0	100%	0.096		0.124		0.065		0.069	
0.025	n	Beryllium	4	4	0%	0.000012	ND	0.000012	ND	0.000012	ND	0.000012	ND
0.0092	n	Cadmium	4	4	0%	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND
--		Calcium	4	0	100%	181		169		359		336	
22.0	n	Chromium	4	3	25%	0.00044	ND	0.00463		0.00044	ND	0.00044	ND
0.0060	n	Cobalt	4	4	0%	0.00004	ND	0.00004	ND	0.00004	ND	0.00004	ND
0.80	n	Copper	4	3	25%	0.00022	ND	0.00264		0.00022	ND	0.00022	ND
14.0	n	Iron	4	2	50%	0.154		1.590		0.046	ND	0.046	ND
0.015	L	Lead	4	3	25%	0.00021	ND	0.00519		0.00021	ND	0.00021	ND
--		Magnesium	4	0	100%	35.5		34.3		80.0		79.2	
0.43	n	Manganese	4	2	50%	0.00353		0.04770		0.00060	ND	0.00060	ND
0.0057	n	Mercury	4	4	0%	0.0000045	ND	0.0000045	ND	0.0000045	ND	0.0000045	ND
0.39	n	Nickel	4	3	25%	0.00079	ND	0.00252		0.00079	ND	0.00079	ND
--		Potassium	4	1	75%	0.115	ND	1.190		3.110		3.420	
0.10	n	Selenium	4	4	0%	0.00014	ND	0.00014	ND	0.00014	ND	0.00014	ND
0.094	n	Silver	4	4	0%	0.00002	ND	0.00002	ND	0.00002	ND	0.00002	ND
--		Sodium	4	0	100%	50.7		51.8		87.6		89.6	
0.00020	n	Thallium	4	4	0%	0.00002	ND	0.00002	ND	0.00002	ND	0.00002	ND
0.086	n	Vanadium	4	0	100%	0.00531		0.00802		0.00528		0.00724	
6.0	n	Zinc	4	1	75%	0.01370		0.01820		0.0191		0.00238	ND

Table F-2b. (cont.)

Tapwater (mg/L)	Sample ID	N	count of NDs	% detected	OU2-0-GW-T5E1875		OU2-0-GW-T5E1875		OU2-0-GW-T6E0375		OU2-0-GW-T6E0375	
	Operable Unit				OU2		OU2		OU2		OU2	
	Sample date				3/11/2015		5/11/2015		3/10/2015		5/11/2015	
	Habitat				Upland		Upland		Upland		Upland	
--	Hardness, as CaCO3	4	0	100%	599		563		1230		1170	
--	Phosphate, Total (as P)	4	3	25%	0.0106	ND	0.153		0.0106	ND	0.0106	ND
--	Total Suspended Solids	4	2	50%	16		31.6		1.415	ND	1.415	ND
32.0	Nitrate, as N	4	0	100%	0.396		0.384		1.67		0.417	
--	Chloride	4	0	100%	223		248		408		384	
--	Sulfate	4	0	100%	187		194		623		601	
--	Alkalinity, as CaCO3	4	0	100%	161		164		213		224	
--	Total Dissolved Solids	4	0	100%	840		872		1920		1860	

Notes:
Results reported as mg/L
Samples were collected quarterly from March 2015 to October 2015
Samples analyzed for dissolved metals were field filtered by sample collectors

Key:
-- = no tapwater screening value available
GW = Groundwater
ID = Identification
mg/L = milligrams per liter
ND = Non-Detect
NS = Not Sampled; See Section 2.6 for additional details
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3

Table F-2c. Screening results for OU3 Floodplain groundwater samples compared with EPA tapwater screening values

Tapwater (mg/L)		Sample ID	N	count of NDs	% detected	OU3-0-GW-FPT-2B		OU3-0-GW-FPT-2B		OU3-0-GW-FPT-6A		OU3-0-GW-FPT-6A		OU3-0-GW-FPT-6A		OU3-0-GW-FPT-6A	
		Operable Unit				OU3		OU3		OU3		Dups ave. OU3		OU3		OU3	
		Sample date				5/13/2015		3/16/2015		5/13/2015		8/27/2015		3/16/2015		10/7/2015	
		Habitat				Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water															
20.0	n	Aluminum	49	46	6%	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	49	30	39%	**0.0378**		**0.0335**		**0.031**		**0.03225**		**0.0186**		**0.0315**	
0.000052	c	Arsenic	49	9	82%	**0.000106**	ND	**0.00377**		**0.00913**		**0.01715**		**0.00323**		**0.0218**	
3.8	n	Barium	49	0	100%	0.0499		0.0262		0.0167		0.03375		0.00925		0.0319	
0.025	n	Beryllium	49	49	0%	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	49	30	39%	**0.0423**		**0.0186**		**0.112**		**0.128**		**0.123**		**0.131**	
--		Calcium	49	0	100%	239		170		495		558		489		469	
22.0	n	Chromium	49	48	2%	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	49	35	29%	0.0000416	ND	0.00489		0.00411		0.004135		0.00421		0.0000416	ND
0.80	n	Copper	49	32	35%	0.0611		0.0313		0.101		0.0602		0.0811		0.0823	
14.0	n	Iron	49	11	78%	0.046	ND	0.119		0.203		1.03		0.1		0.732	
0.015	L	Lead	49	31	37%	**0.0324**		**0.0967**		**0.0499**		**0.0840**		**0.0318**		**0.0585**	
--		Magnesium	49	0	100%	46.9		36.3		37.7		58.2		36.4		54.1	
0.43	n	Manganese	49	0	100%	**0.548**		**1.32**		**2.42**		**2.8**		**2.65**		**2.45**	
0.0057	n	Mercury	49	43	12%	0.00000446	ND	0.000163		0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000227	
0.39	n	Nickel	49	19	61%	0.0035		0.00266		0.0154		0.0168		0.0157		0.0141	
--		Potassium	49	2	96%	0.115	ND	0.115	ND	2.57		2.495		2.33		2.6	
0.10	n	Selenium	49	42	14%	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	49	49	0%	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	49	0	100%	69.7		79.7		88.5		150		73.5		147	
0.00020	n	Thallium	49	38	22%	**0.00203**		0.0000217	ND	**0.0148**		**0.0202**		**0.00991**		**0.0144**	
0.086	n	Vanadium	49	42	14%	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	49	8	84%	**10.3**		**7.16**		**41.5**		**44.4**		**48.5**		**38**	
		Total water															
20.0	n	Aluminum	49	25	49%	0.016	ND	0.684		0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	49	23	53%	**0.0398**		**0.0446**		**0.0328**		**0.02885**		**0.0179**		**0.0334**	
0.000052	c	Arsenic	49	4	92%	**0.000106**	ND	**0.0141**		**0.012**		**0.0154**		**0.00787**		**0.0316**	
3.8	n	Barium	49	0	100%	0.0535		0.0338		0.0166		0.0329		0.00897		0.0313	
0.025	n	Beryllium	49	49	0%	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	49	24	51%	**0.046**		**0.0203**		**0.104**		**0.1375**		**0.133**		**0.131**	
--		Calcium	49	0	100%	240		179		487		559		506		484	
22.0	n	Chromium	49	43	12%	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	49	35	29%	0.0000416	ND	**0.0112**		0.00408		0.0000416	ND	0.00411		0.0000416	ND
0.80	n	Copper	49	19	61%	0.0711		0.0831		0.114		0.09635		0.0875		0.102	
14.0	n	Iron	49	3	94%	0.046	ND	1.64		0.318		1.08		0.272		0.981	
0.015	L	Lead	49	5	90%	**0.0623**		**0.565**		**0.0598**		**0.0929**		**0.0484**		**0.101**	
--		Magnesium	49	0	100%	48.2		38.6		36.9		57.8		37.4		56.8	
0.43	n	Manganese	49	0	100%	**0.626**		**1.81**		**2.44**		**2.935**		**2.65**		**2.38**	
0.0057	n	Mercury	49	37	24%	0.00000446	ND	0.00102		0.000913		0.0008245		0.000313		0.00133	
0.39	n	Nickel	49	19	61%	0.00346		0.0037		0.015		0.01715		0.0161		0.0145	
--		Potassium	49	2	96%	0.115	ND	0.115	ND	2.61		2.465		2.36		2.73	
0.10	n	Selenium	49	41	16%	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	49	45	8%	0.0000217	ND	0.0000217	ND	0.00272		0.002475		0.0000217	ND	0.00404	
--		Sodium	49	0	100%	71		88.5		88.5		150.5		72.2		160	
0.00020	n	Thallium	49	38	22%	**0.00218**		0.0000217	ND	**0.0145**		**0.0206**		**0.0101**		**0.0149**	
0.086	n	Vanadium	49	43	12%	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	49	0	100%	**10.8**		**7.46**		**47.5**		**44.45**		**46.7**		**35.4**	

Table F-2c. (cont.)

	Sample ID				OU3-0-GW-FPT-2B		OU3-0-GW-FPT-2B		OU3-0-GW-FPT-6A		OU3-0-GW-FPT-6A		OU3-0-GW-FPT-6A		OU3-0-GW-FPT-6A	
	Operable Unit				OU3		OU3		OU3		Dups ave. OU3		OU3		OU3	
	Sample date				5/13/2015		3/16/2015		5/13/2015		8/27/2015		3/16/2015		10/7/2015	
	Habitat				Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
Tapwater (mg/L)		N	count of NDs	% detected												
--	Hardness, as CaCO3	49	0	100%	797		606		1370		1635		1420		1440	
--	Phosphate, Total (as P)	47	32	32%	0.0106	ND	0.0106	ND	0.0106	ND	0.011	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	47	17	64%	1.415	ND	82.4		1.415	ND	4.60		1.415	ND	1.415	ND
32.0	Nitrate, as N	47	31	34%	0.00345	ND	0.00345	ND	0.00345	ND	0.03190		0.00345	ND	0.00345	ND
--	Chloride	47	0	100%	147		169		193		479		133		465	
--	Sulfate	47	0	100%	569		329		980		800		1160		825	
--	Alkalinity, as CaCO3	47	0	100%	156		240		340		512		285		406	
--	Total Dissolved Solids	47	0	100%	1440		960		2380		2295		1920		2190	

Table F-2c. (cont.)

Tapwater (mg/L)		Sample ID	OU3-0-GW-MR-1		OU3-0-GW-MR-1		OU3-0-GW-MR-2		OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-5	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	3/16/2015		5/13/2015		5/13/2015		3/16/2015		5/13/2015		8/27/2015		10/7/2015		3/16/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.197		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.81	
0.0078	n	Antimony	0.00247		0.000474	ND	0.00368		**0.0306**		**0.0374**		**0.051**		**0.0531**		0.000474	ND
0.000052	c	Arsenic	**0.0053**		**0.00234**		**0.00685**		**0.000106**	ND	**0.000106**	ND	**0.00205**		**0.0113**		**0.000106**	ND
3.8	n	Barium	0.0544		0.0697		0.0469		0.0313		0.0384		0.0319		0.0421		0.0965	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.000171	ND	0.000984		**0.0685**		**0.0542**		**0.0385**		**0.105**		0.000171	ND
--		Calcium	128		134		92.1		177		156		146		259		132	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	**0.0507**		**0.0381**		**0.0244**		**0.0987**		0.0000416	ND
0.80	n	Copper	0.000216	ND	0.000216	ND	0.0113		0.108		0.0461		0.0432		0.0392		0.00312	
14.0	n	Iron	3.83		6.34		0.687		6.12		4.7		4.39		**14.9**		2.86	
0.015	L	Lead	0.000214	ND	0.00226		**0.0396**		**0.163**		**0.127**		**0.119**		**0.25**		**0.019**	
--		Magnesium	25.8		26.5		23		34.5		30.4		26.7		67.3		37.2	
0.43	n	Manganese	**5.03**		**6.18**		**2.4**		**4.64**		**3.73**		**2.52**		**9.65**		0.369	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000792		0.000687		0.000925		0.00059		0.00000446	ND
0.39	n	Nickel	0.00282		0.00079	ND	0.00353		0.0262		0.0207		0.0141		0.0566		0.00249	
--		Potassium	11.3		10.6		8.17		2.44		2.34		2.74		2.39		2.03	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	114		109		199		157		141		70.1		55.3		58	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	**0.00257**		**0.00276**		**0.00399**		**0.00442**		0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.0972		0.00991		0.0593		**25.5**		**22.1**		**12.6**		**50.1**		0.0417	
		Total water																
20.0	n	Aluminum	0.016	ND	0.13		0.21		0.016	ND	0.197		0.016	ND	0.016	ND	1.18	
0.0078	n	Antimony	0.00511		0.00562		0.00228		**0.036**		**0.0552**		**0.0523**		**0.0529**		0.000474	ND
0.000052	c	Arsenic	**0.00584**		**0.00383**		**0.00566**		**0.00675**		**0.0157**		**0.00246**		**0.0111**		**0.00277**	
3.8	n	Barium	0.056		0.0691		0.0379		0.0316		0.043		0.0338		0.0424		0.0976	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.00106		0.000171	ND	0.000623		**0.0669**		**0.0566**		**0.0398**		**0.106**		0.000171	ND
--		Calcium	120		132		94.8		168		160		147		269		125	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00239	
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	**0.0481**		**0.0396**		**0.025**		**0.0981**		0.0000416	ND
0.80	n	Copper	0.00656		0.029		0.009		0.125		0.103		0.0525		0.0466		0.0045	
14.0	n	Iron	3.58		6.09		0.834		6.02		5.4		4.57		**14.2**		3.26	
0.015	L	Lead	**0.0276**		**0.0996**		**0.0391**		**0.365**		**0.661**		**0.129**		**0.26**		**0.0307**	
--		Magnesium	25		25.7		21.2		33		31.3		26.5		70.5		36.9	
0.43	n	Manganese	**4.4**		**6.53**		**2.66**		**4.83**		**3.71**		**2.59**		**9.74**		0.423	
0.0057	n	Mercury	0.00118		0.00559		0.00000446	ND	0.00107		0.00222		0.00104		0.0007		0.00000446	ND
0.39	n	Nickel	0.00355		0.00079	ND	0.00293		0.0254		0.0221		0.0142		0.0574		0.00079	ND
--		Potassium	10.8		10.9		7.42		2.48		2.47		2.77		2.35		2.18	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0024		0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	108		109		190		150		146		70.7		59.9		53.8	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	**0.00255**		**0.00286**		**0.00404**		**0.00452**		0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.304		0.0695		0.0386		**25.9**		**22.5**		**13.1**		**50.9**		0.069	

Table F-2c. (cont.)

	Sample ID	OU3-0-GW-MR-1		OU3-0-GW-MR-1	OU3-0-GW-MR-2	OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-5	
	Operable Unit	OU3		OU3	OU3	OU3		OU3		OU3		OU3		OU3	
	Sample date	3/16/2015		5/13/2015	5/13/2015	3/16/2015		5/13/2015		8/27/2015		10/7/2015		3/16/2015	
	Habitat	Floodplain		Floodplain	Floodplain	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
Tapwater (mg/L)															
--	Hardness, as CaCO3	404		436	324	556		528		476		962		464	
--	Phosphate, Total (as P)	2.09		NS	NS	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	46.8		NS	NS	35.6		20.5		8		28		19.2	
32.0	Nitrate, as N	0.00345	ND	NS	NS	0.00345	ND	0.0126		0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	202		NS	NS	299		244		151		99.3		135	
--	Sulfate	168		NS	NS	356		343		272		860		239	
--	Alkalinity, as CaCO3	261		NS	NS	143		154		169		154		166	
--	Total Dissolved Solids	728		NS	NS	1160		1290		652		1500		628	

Table F-2c. (cont.)

Tapwater (mg/L)		Sample ID	OU3-0-GW-MR-5		OU3-0-GW-MR-5		OU3-0-GW-MR-5		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-P2-1(A)	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	5/13/2015		8/27/2015		10/7/2015		3/16/2015		5/13/2015		8/26/2015		10/7/2015		5/11/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.000106**	ND	**0.000106**	ND	**0.000106**	ND	**0.0169**		**0.0204**		**0.03**		**0.0322**		**0.168**	
3.8	n	Barium	0.105		0.103		0.0934		0.0476		0.0575		0.0523		0.0557		0.164	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND
--		Calcium	137		113		109		138		146		121		115		365	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND
14.0	n	Iron	1.58		1.19		1.3		1.11		1.02		0.947		0.744		**28.2**	
0.015	L	Lead	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND
--		Magnesium	39.7		31.9		28.8		32.6		34.1		28.4		25		94.5	
0.43	n	Manganese	**0.479**		0.339		0.349		**1.04**		**1.1**		**1.07**		**1.12**		**8.92**	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	1.83		2.13		2.02		2.19		2.15		2.28		2.16		1.92	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	64.4		65		61.1		75		86		81.4		68.2		124	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.00238	ND	0.00732		0.00238	ND	1.19		1.36		1.11		1.07		0.00238	ND
		Total water																
20.0	n	Aluminum	0.661		0.409		0.238		0.302		0.855		0.134		0.129		0.952	
0.0078	n	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.00232		0.00228		0.00203		0.0023	
0.000052	c	Arsenic	**0.00235**		**0.000106**	ND	**0.000106**	ND	**0.0185**		**0.0246**		**0.0296**		**0.033**		**0.168**	
3.8	n	Barium	0.112		0.113		0.0938		0.051		0.0659		0.0526		0.0569		0.198	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND
--		Calcium	134		115		106		139		147		119		113		356	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00255		0.000436	ND	0.000436	ND	0.00243	
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.00309		0.000216	ND	0.00234		0.000216	ND	0.00466		0.000216	ND	0.000216	ND	0.00445	
14.0	n	Iron	2.36		1.58		1.56		1.58		2.22		0.986		0.942		**28.5**	
0.015	L	Lead	**0.0158**		0.00683		0.00368		0.00678		0.0123		0.00288		0.00404		**0.0459**	
--		Magnesium	39.2		31.6		28.2		33.3		34.2		26		24.5		92	
0.43	n	Manganese	**0.499**		0.359		0.409		**1.05**		**1.12**		**1.06**		**1.11**		**8.91**	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	2.01		2.24		2.08		2.3		2.19		2.19		2.21		2.07	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	64.3		66.4		62.4		74.1		88		76.2		70.6		120	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.0226		0.0176		0.00629		1.32		1.4		1.1		1.11		0.0467	

Table F-2c. (cont.)

Tapwater (mg/L)	Sample ID	OU3-0-GW-MR-5		OU3-0-GW-MR-5		OU3-0-GW-MR-5		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-P2-1(A)	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	5/13/2015		8/27/2015		10/7/2015		3/16/2015		5/13/2015		8/26/2015		10/7/2015		5/11/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	497		417		381		485		508		404		383		1270	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0605		0.0106	ND	0.065		0.0636		0.089		0.542	
--	Total Suspended Solids	10.4		7.2		4.4		8.8		25.2		4.4		4.8		54.8	
32.0	Nitrate, as N	0.00345	ND	0.00345	ND	0.00345	ND	0.00345	ND	0.00345	ND	0.0498		0.00345	ND	0.00345	ND
--	Chloride	176		135		100		173		236		138		108		521	
--	Sulfate	209		160		163		213		199		215		190		627	
--	Alkalinity, as CaCO3	158		226		210		166		147		213		210		294	
--	Total Dissolved Solids	772		604		636		720		1180		676		628		2170	

Table F-2c. (cont.)

Tapwater (mg/L)		Sample ID	OU3-0-GW-P2-1(A)		OU3-0-GW-P2-1(A)		OU3-0-GW-P2-1(A)		OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-12	
									Dups ave.		Dups ave.							
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	8/25/2015		10/6/2015		3/10/2015		3/16/2015		5/13/2015		8/26/2015		10/7/2015		3/16/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	**0.01395**		**0.0142**		**0.0152**		**0.0156**		**0.0155**	
0.000052	c	Arsenic	**0.21**		**0.193**		**0.151**		**0.004165**		**0.00531**		**0.0121**		**0.0096**		**0.000106**	ND
3.8	n	Barium	0.215		0.187		0.182		0.05115		0.0652		0.0364		0.0292		0.0109	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	**0.118**		**0.121**		**0.0169**		**0.0113**		**0.219**	
--		Calcium	390		343		370		225		269.5		138		100		343	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.000216	ND	0.000216	ND	0.000216	ND	0.0194		0.00789		0.000216	ND	0.000216	ND	0.0255	
14.0	n	Iron	**26**		**23.8**		**26.7**		0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND
0.015	L	Lead	0.000214	ND	0.000214	ND	0.000214	ND	**0.295**		**0.243**		**0.108**		**0.0945**		0.000214	ND
--		Magnesium	98.9		86.9		90.7		49.85		60.65		30.7		20.9		44	
0.43	n	Manganese	**9.04**		**8.07**		**8.43**		0.0759		0.07775		0.0893		0.0852		0.00987	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00239		0.002715		0.00079	ND	0.00079	ND	0.0101	
--		Potassium	2.29		2.18		1.84		2.61		2.87		2.29		1.97		2.31	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.00331		0.0024		0.000135	ND	0.000135	ND	0.00928	
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	134		130		115		129		203		147		114		78.6	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	**0.0034**	
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.00238	ND	0.00238	ND	0.0146		**8.37**		**9.64**		4.24		3.1		**43.3**	
		Total water																
20.0	n	Aluminum	0.171		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	**0.01505**		**0.01445**		**0.0156**		**0.016**		**0.018**	
0.000052	c	Arsenic	**0.214**		**0.195**		**0.158**		**0.00437**		**0.00574**		**0.0141**		**0.0128**		**0.000106**	ND
3.8	n	Barium	0.208		0.189		0.187		0.0548		0.06645		0.0365		0.0298		0.0118	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	**0.125**		**0.122**		**0.0183**		**0.0125**		**0.232**	
--		Calcium	391		324		357		231.5		267.5		136		101		333	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.000216	ND	0.000216	ND	0.000216	ND	0.0195		0.00824		0.00347		0.00283		0.0369	
14.0	n	Iron	**25.5**		**23.9**		**27.2**		0.046	ND	0.046	ND	0.128		0.133		0.175	
0.015	L	Lead	0.00835		0.00671		0.00361		**0.3155**		**0.244**		**0.156**		**0.174**		0.00997	
--		Magnesium	102		82.1		86.2		49.85		59.75		29.8		22.4		44.7	
0.43	n	Manganese	0.0462		**8.23**		**8.41**		0.0782		0.08295		0.14		0.0944		0.197	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000205		0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.002565		0.002905		0.00079	ND	0.00079	ND	0.0106	
--		Potassium	2.35		2.07		1.81		2.65		2.84		2.21		2.18		2.25	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.003475		0.002465		0.000135	ND	0.000135	ND	0.00988	
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	135		124		112		130.5		205		132		120		73.4	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	**0.00361**	
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.0102		0.00927		0.0213		**9.19**		**9.925**		4.16		3.15		**41.7**	

Table F-2c. (cont.)

Tapwater (mg/L)	Sample ID	OU3-0-GW-P2-1(A)		OU3-0-GW-P2-1(A)		OU3-0-GW-P2-1(A)		OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-12	
	Operable Unit	OU3		OU3		OU3		Dups ave. OU3		Dups ave. OU3		OU3		OU3		OU3	
	Sample date	8/25/2015		10/6/2015		3/10/2015		3/16/2015		5/13/2015		8/26/2015		10/7/2015		3/16/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	1400		1150		1250		784		914		463		344		1020	
--	Phosphate, Total (as P)	0.57		0.592		0.618		0.011	ND	0.011	ND	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	29.6		33.2		31.2		1.42	ND	1.42	ND	1.415	ND	1.415	ND	3.6	
32.0	Nitrate, as N	0.00345	ND	0.00345	ND	0.00345	ND	0.10145		0.04490		0.0603		0.00345	ND	0.102	
--	Chloride	618		464		487		370		589		328		159		112	
--	Sulfate	646		601		622		375		299		235		198		915	
--	Alkalinity, as CaCO3	297		289		278		192		186		174		162		140	
--	Total Dissolved Solids	2170		1900		2250		1300		2280		908		640		1490	

Table F-2c. (cont.)

Tapwater (mg/L)		Sample ID	OU3-0-GW-RT-12		OU3-0-GW-T1E0125		OU3-0-GW-T1E0125		OU3-0-GW-T1E0125		OU3-0-GW-T1E0125 Dups ave.		OU3-0-GW-T2E0125		OU3-0-GW-T2E0125	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	5/12/2015		3/16/2015		5/12/2015		8/26/2015		10/7/2015		3/13/2015		5/12/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water														
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	**0.0179**		0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.000106**	ND	**0.00435**		**0.0102**		**0.015**		**0.0151**		**0.00268**		**0.00331**	
3.8	n	Barium	0.0157		0.112		0.127		0.0958		0.102		0.032		0.0321	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	**0.214**		0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND
--		Calcium	267		306		336		231		240.5		195		183	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	**0.00858**		**0.00869**		0.00572		0.00577		0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.03		0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND
14.0	n	Iron	0.046	ND	0.367		0.485		0.49		0.452		0.669		0.675	
0.015	L	Lead	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND
--		Magnesium	33.7		72.8		85.2		55.4		55.45		44.9		42.3	
0.43	n	Manganese	0.0072		**5.78**		**5.73**		**4.13**		**4.185**		0.0499		0.0515	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00878		0.00345		0.00358		0.00275		0.00249		0.00202		0.00212	
--		Potassium	3.98		2.69		2.85		2.75		2.82		3.77		3.98	
0.10	n	Selenium	0.0245		0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	51.3		263		297		281		262		181		187	
0.00020	n	Thallium	**0.00541**		0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00571		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	**43.3**		0.32		0.204		0.05		0.0965		0.0134		0.00677	
		Total water														
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.157	
0.0078	n	Antimony	**0.0198**		0.000474	ND	0.000474	ND	0.000474	ND	0.001267		0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.003**		**0.00416**		**0.0115**		**0.0154**		**0.01515**		**0.00269**		**0.00454**	
3.8	n	Barium	0.0173		0.11		0.134		0.0943		0.1035		0.0305		0.0342	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	**0.218**		0.000171	ND	0.0043		0.000862		0.00114		0.000171	ND	0.000171	ND
--		Calcium	264		327		346		233		246		188		170	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	**0.00836**		**0.00921**		0.00586		0.00598		0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.0408		0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND
14.0	n	Iron	0.848		0.385		0.522		0.466		0.49		0.668		0.979	
0.015	L	Lead	0.00536		0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.00447		0.0115	
--		Magnesium	32.9		75.2		85		51.6		57.15		44.5		39	
0.43	n	Manganese	0.159		**5.83**		**6.09**		**4.05**		**4.355**		0.0483		0.0508	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00912		0.00351		0.00367		0.00261		0.002665		0.00225		0.00233	
--		Potassium	4.03		2.76		2.91		2.78		2.885		3.7		4.26	
0.10	n	Selenium	0.025		0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	50.1		278		310		269		279.5		174		181	
0.00020	n	Thallium	**0.00545**		0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	**44.2**		0.254		0.236		0.0496		0.1154		0.0151		0.0154	

Table F-2c. (cont.)

Tapwater (mg/L)	Sample ID	OU3-0-GW-RT-12		OU3-0-GW-T1E0125		OU3-0-GW-T1E0125		OU3-0-GW-T1E0125		OU3-0-GW-T1E0125 Dups ave.		OU3-0-GW-T2E0125		OU3-0-GW-T2E0125	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	5/12/2015		3/16/2015		5/12/2015		8/26/2015		10/7/2015		3/13/2015		5/12/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	794		1130		1210		794		850		652		585	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.054		0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.415	ND	1.415	ND	1.415	ND	1.415	ND	1.42	ND	1.415	ND	8	
32.0	Nitrate, as N	3.24		0.00345	ND	0.00345	ND	0.298		0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	83.8		951		1040		778		735		347		374	
--	Sulfate	719		163		149		142		132		417		256	
--	Alkalinity, as CaCO3	144		281		276		264		267		249		220	
--	Total Dissolved Solids	1530		2220		2880		1640		1725		1270		1330	

Table F-2c. (cont.)

Tapwater (mg/L)		Sample ID	OU3-0-GW-T2E0125		OU3-0-GW-T2E0125		OU3-0-GW-T2W0375		OU3-0-GW-T2W0375		OU3-0-GW-T6E1350		OU3-0-GW-T6E1350		OU3-0-GW-T6E1350		OU3-0-GW-T6E1350	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	8/26/2015		10/6/2015		3/13/2015		5/12/2015		3/10/2015		5/11/2015		8/25/2015		10/6/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.21		0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.000474	ND	0.00532		0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.00387**		**0.00502**		**0.00229**		**0.00259**		**0.00407**		**0.00984**		**0.0071**		**0.00926**	
3.8	n	Barium	0.0392		0.047		0.183		0.169		0.0536		0.111		0.066		0.0654	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.000171	ND	0.000724		0.000748		0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND
--		Calcium	180		166		327		307		169		165		171		167	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00282		0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.00415		**0.0062**		0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.000216	ND	0.000216	ND	0.000216	ND	0.00225		0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND
14.0	n	Iron	0.883		0.571		0.046	ND	0.046	ND	0.596		0.157		0.046	ND	0.046	ND
0.015	L	Lead	0.000214	ND	0.00293		0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND
--		Magnesium	42.9		39.5		80.1		76.7		42.5		43.2		44.7		43.5	
0.43	n	Manganese	0.0593		0.0576		0.00959		0.00917		0.0962		0.129		0.0292		0.0146	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.0021		0.00079	ND	0.0105		0.0117		0.00406		0.00673		0.00359		0.00385	
--		Potassium	4.51		4.03		2.51		2.46		3.85		3.6		4.07		3.71	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.002		0.00476		0.00252		0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	199		161		161		164		42.6		42.3		45.8		45.2	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.0061		0.00725		0.0138		0.0172		0.0295		0.04	
6.0	n	Zinc	0.00597		0.0125		0.0451		0.0392		0.0144		0.00238	ND	0.00238	ND	0.00238	ND
		Total water																
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.241		0.927		2.13		3.71		1.67	
0.0078	n	Antimony	0.000474	ND	0.00512		0.000474	ND	0.00551		0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.00412**		**0.00564**		**0.00231**		**0.00306**		**0.00584**		**0.0119**		**0.0156**		**0.0116**	
3.8	n	Barium	0.0402		0.0526		0.185		0.181		0.0651		0.0993		0.122		0.0912	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.000171	ND	0.000727		0.00488		0.000581		0.000171	ND	0.000171	ND	0.000171	ND
--		Calcium	175		166		327		282		167		164		173		156	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00418		0.00762		0.00351	
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.00526		0.00434		0.00448		0.0000416	ND
0.80	n	Copper	0.000216	ND	0.00231		0.00312		0.0214		0.000216	ND	0.00324		0.00438		0.00223	
14.0	n	Iron	0.863		0.708		0.131		0.269		1.56		2.39		3.36		1.5	
0.015	L	Lead	0.00417		0.0124		0.00219		0.0129		0.000214	ND	0.00745		0.00786		0.00447	
--		Magnesium	39.8		40.7		79.8		69.2		43.9		44.1		46.3		40.6	
0.43	n	Manganese	0.0624		0.063		0.00997		0.0119		0.133		0.0619		0.0469		0.0203	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00229		0.00221		0.0108		0.0203		0.00553		0.0054		0.00608		0.00472	
--		Potassium	4.37		4.04		2.48		2.89		4.23		3.9		4.81		3.84	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.00202		0.00254		0.00269		0.00242		0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	192		161		160		149		42		42.1		45.8		43.1	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00565		0.0318		0.0171		0.0369		0.0542		0.0485	
6.0	n	Zinc	0.0076		0.027		0.0498		0.175		0.0408		0.0179		0.016		0.0114	

Table F-2c. (cont.)

	Sample ID	OU3-0-GW-T2E0125		OU3-0-GW-T2E0125		OU3-0-GW-T2W0375		OU3-0-GW-T2W0375		OU3-0-GW-T6E1350		OU3-0-GW-T6E1350		OU3-0-GW-T6E1350		OU3-0-GW-T6E1350	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	8/26/2015		10/6/2015		3/13/2015		5/12/2015		3/10/2015		5/11/2015		8/25/2015		10/6/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
Tapwater (mg/L)																	
--	Hardness, as CaCO3	600		582		1140		989		598		590		623		557	
--	Phosphate, Total (as P)	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0534		0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	3.2		1.415	ND	1.415	ND	1.415	ND	56.4		7.2		6		56.8	
32.0	Nitrate, as N	0.127		0.00345	ND	0.016		0.00345	ND	0.376		0.448		0.402		0.442	
--	Chloride	455		319		853		682		216		219		255		212	
--	Sulfate	186		201		191		236		223		225		216		217	
--	Alkalinity, as CaCO3	284		279		192		166		175		175		179		176	
--	Total Dissolved Solids	1270		1140		2040		1870		900		956		980		864	

Table F-2c. (cont.)

Tapwater (mg/L)		Sample ID	OU3-0-GW-T6W0625		OU3-0-GW-T6W0625		OU3-0-GW-T6W0625		OU3-0-GW-T6W0625	
		Operable Unit	OU3		OU3		OU3		OU3	
		Sample date	3/10/2015		5/11/2015		8/25/2015		10/6/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain	
		Dissolved water								
20.0	n	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0078	n	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.0169**		**0.0181**		**0.0242**		**0.0251**	
3.8	n	Barium	0.0681		0.0571		0.0761		0.0762	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND
--		Calcium	166		126		158		159	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND
14.0	n	Iron	3.74		2.99		3.5		3.92	
0.015	L	Lead	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND
--		Magnesium	39.5		32.5		40.1		36.1	
0.43	n	Manganese	**1.97**		**1.58**		**1.81**		**1.88**	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	2.57		2.44		3.22		3.1	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	131		123		149		163	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.0783		0.0717		0.0673		0.0701	
		Total water								
20.0	n	Aluminum	0.189		0.446		0.334		0.276	
0.0078	n	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.000052	c	Arsenic	**0.0208**		**0.0183**		**0.0236**		**0.0255**	
3.8	n	Barium	0.0716		0.0594		0.069		0.0769	
0.025	n	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0092	n	Cadmium	0.000171	ND	0.000171	ND	0.000723		0.000171	ND
--		Calcium	155		127		154		147	
22.0	n	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
0.0060	n	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
0.80	n	Copper	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND
14.0	n	Iron	4.17		3.35		3.57		4.18	
0.015	L	Lead	0.00414		0.011		0.00616		0.00671	
--		Magnesium	40.3		32.6		39.4		36.7	
0.43	n	Manganese	**1.92**		**1.62**		**1.86**		**1.84**	
0.0057	n	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
0.39	n	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--		Potassium	2.49		2.47		3.15		3.23	
0.10	n	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
0.094	n	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--		Sodium	125		123		147		152	
0.00020	n	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
0.086	n	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
6.0	n	Zinc	0.124		0.108		0.0989		0.0924	

Table F-2c. (cont.)

Tapwater (mg/L)	Sample ID	OU3-0-GW-T6W0625		OU3-0-GW-T6W0625		OU3-0-GW-T6W0625	OU3-0-GW-T6W0625	
	Operable Unit	OU3		OU3		OU3	OU3	
	Sample date	3/10/2015		5/11/2015		8/25/2015	10/6/2015	
	Habitat	Floodplain		Floodplain		Floodplain	Floodplain	
--	Hardness, as CaCO3	554		451		547	518	
--	Phosphate, Total (as P)	0.245		0.212		0.213	0.237	
--	Total Suspended Solids	4.4		20.8		4.8	7.6	
32.0	Nitrate, as N	0.00345	ND	0.00345	ND	0.158	0.00345	ND
--	Chloride	338		305		318	333	
--	Sulfate	139		181		152	213	
--	Alkalinity, as CaCO3	247		224		235	223	
--	Total Dissolved Solids	1080		864		1020	1050	

Notes:
Results reported as mg/L
Samples were collected quarterly from March 2015 to October 2015
Samples analyzed for dissolved metals were field filtered by sample collectors

Key:
-- = no tapwater screening value available
GW = Groundwater
ID = Identification
mg/L = milligrams per liter
ND = Non-Detect
NS = Not Sampled; See Section 2.6 for additional details
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3

Table F-2d. Screening results for OU2 Floodplain groundwater samples compared with EPA MCLs

MCL (mg/L)	Sample ID	N	count of NDs	% detected	OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(B)		OU2-0-GW-P2-2(B)		OU2-0-GW-P2-2(B)	
	Operable Unit				Dups ave. OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date				3/11/2015		5/11/2015		8/25/2015		10/6/2015		3/11/2015		10/6/2015		5/11/2015	
	Habitat				Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
	Dissolved water																	
--	Aluminum	33	31	6%	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	33	24	27%	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	**0.071**		**0.127**		**0.0847**	
0.010	Arsenic	33	3	91%	0.00213		0.00011	ND	0.00292		0.00258		**0.01020**		**0.01230**		**0.01270**	
2.0	Barium	33	0	100%	0.2595		0.2710		0.2950		0.3160		0.0173		0.0444		0.0279	
0.0040	Beryllium	33	33	0%	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	33	27	18%	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	**0.174**		**0.426**		**0.277**	
--	Calcium	33	0	100%	251		237		253		285		337		525		416	
0.10	Chromium	33	31	6%	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	33	29	12%	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	33	23	30%	0.00661		0.00022	ND	0.00022	ND	0.00022	ND	0.07380		0.14900		0.09200	
--	Iron	33	7	79%	0.617		0.545		0.532		0.652		0.046	ND	0.046	ND	0.046	ND
0.015	Lead	33	20	39%	0.0040		0.0002	ND	0.0022		0.0020		**0.234**		**0.485**		**0.313**	
--	Magnesium	33	0	100%	69.4		67.0		71.7		76.1		80.4		135.0		105.0	
--	Manganese	33	0	100%	2.09		2.11		1.97		2.23		1.34		3.21		2.35	
0.0020	Mercury	33	32	3%	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND
--	Nickel	33	12	64%	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00623		0.01220		0.00980	
--	Potassium	33	0	100%	3.73		3.55		4.36		4.39		9.48		22.00		11.60	
0.05	Selenium	33	30	9%	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.002790		0.002130	
--	Silver	33	33	0%	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	33	0	100%	65.1		60.1		64.2		69.3		96.5		221.0		114.0	
0.0020	Thallium	33	29	12%	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	**0.024**		**0.060**		**0.035**	
--	Vanadium	33	33	0%	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	33	11	67%	0.44		0.16		0.16		0.09		35.0		56.4		47.3	
	Total water																	
--	Aluminum	33	20	39%	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	33	22	33%	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	**0.069**		**0.128**		**0.0900**	
0.010	Arsenic	33	2	94%	0.00261		0.00011	ND	0.00317		0.00349		**0.01070**		**0.01450**		**0.01390**	
2.0	Barium	33	0	100%	0.2495		0.2700		0.2930		0.3720		0.0172		0.0465		0.0289	
0.0040	Beryllium	33	33	0%	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	33	24	27%	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	**0.167**		**0.436**		**0.287**	
--	Calcium	33	0	100%	248		244		260		278		322		532		431	
0.10	Chromium	33	31	6%	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	33	29	12%	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	33	21	36%	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.07200		0.15600		0.10700	
--	Iron	33	3	91%	0.695		0.627		0.580		0.659		0.046	ND	0.046	ND	0.046	ND
0.015	Lead	33	11	67%	0.0073		0.0063		0.0061		0.0053		**0.227**		**0.516**		**0.381**	
--	Magnesium	33	0	100%	69.3		68.7		74.6		74.4		81.0		136.0		110.0	
--	Manganese	33	0	100%	2.08		2.13		2.17		2.16		1.32		3.45		2.41	
0.0020	Mercury	33	26	21%	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000217		0.000202	
--	Nickel	33	11	67%	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00582		0.01250		0.01060	
--	Potassium	33	0	100%	3.74		3.71		4.46		4.28		9.29		22.70		12.10	
0.05	Selenium	33	30	9%	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.002940		0.002160	
--	Silver	33	31	6%	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	33	0	100%	62.5		61.7		65.7		68.0		92.5		224.0		117.0	
0.0020	Thallium	33	29	12%	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	**0.024**		**0.062**		**0.037**	
--	Vanadium	33	32	3%	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	33	7	79%	0.52		0.18		0.19		0.12		34.6		56.0		49.9	

Table F-2d. (cont.)

	Sample ID				OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(A)		OU2-0-GW-P2-2(B)		OU2-0-GW-P2-2(B)		OU2-0-GW-P2-2(B)	
	Operable Unit				Dups ave. OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date				3/11/2015		5/11/2015		8/25/2015		10/6/2015		3/11/2015		10/6/2015		5/11/2015	
	Habitat				Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
MCL (mg/L)		N	count of NDs	% detected														
--	Hardness, as CaCO3	33	0	100%	904		893		956		1000		1140		1890		1530	
--	Phosphate, Total (as P)	32	4	88%	0.289		0.21		0.265		0.278		0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	32	16	50%	1.42	ND	1.415	ND	1.415	ND	1.415	ND	1.415	ND	1.415	ND	1.415	ND
10.0	Nitrate, as N	32	20	38%	0.00345	ND	0.0116		0.471		0.00345	ND	0.00345	ND	0.07		0.0304	
--	Chloride	32	0	100%	180		214		252		229		226		644		361	
--	Sulfate	32	0	100%	418		457		472		504		809		1300		1170	
--	Alkalinity, as CaCO3	32	0	100%	275		259		297		279		188		147		186	
--	Total Dissolved Solids	32	0	100%	1145		1290		1410		1320		1790		3120		2420	

Table F-2d. (cont.)

MCL (mg/L)	Sample ID	OU2-0-GW-P2-2(B)		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-5		OU2-0-GW-P2-5		OU2-0-GW-P2-5	
				Dups ave.				Dups ave.				Dups ave.		Dups ave.		Dups ave.	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	8/25/2015		3/13/2015		5/12/2015		8/26/2015		10/6/2015		3/10/2015		5/11/2015		8/25/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	**0.151**		0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	**0.270**		**0.358**		**0.464**	
0.010	Arsenic	**0.01740**		**0.02955**		**0.03270**		**0.03720**		**0.04920**		**0.188**		**0.229**		**0.398**	
2.0	Barium	0.0527		0.0412		0.0319		0.0297		0.0346		0.1055		0.0863		0.1175	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	**0.401**		0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	**0.01190**		**0.00835**		0.00017	ND
--	Calcium	595		570		432		248		279		94		58		61	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.003113	
--	Cobalt	0.000042	ND	0.0314		0.0254		0.0118		0.0133		0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.06300		0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.01065		0.00116		0.00235	
--	Iron	0.046	ND	13.150		8.950		5.465		5.400		8.27		4.95		6.92	
0.015	Lead	**0.575**		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	**0.119**		**0.030**		**0.0289**	
--	Magnesium	146.0		150.0		111.0		65.6		71.9		16.4		11.2		13.0	
--	Manganese	4.52		8.89		7.06		3.97		4.48		1.73		1.21		1.53	
0.0020	Mercury	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000078		0.000004	ND	0.000004	ND
--	Nickel	0.01190		0.02235		0.01790		0.00890		0.00939		0.00346		0.00241		0.00292	
--	Potassium	21.20		5.04		4.53		3.81		4.11		2.54		2.45		2.91	
0.05	Selenium	0.004090		0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	186.0		147.5		132.0		80.7		90.5		19.6		16.4		17.6	
0.0020	Thallium	**0.062**		0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	56.3		7.64		5.65		3.18		3.30		8.47		5.43		2.22	
	Total water																
--	Aluminum	0.016	ND	0.414		0.113		0.153		0.016	ND	0.016	ND	0.016	ND	0.094	
0.0060	Antimony	**0.155**		0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	**0.277**		**0.368**		**0.463**	
0.010	Arsenic	**0.02260**		**0.03090**		**0.03220**		**0.03620**		**0.05330**		**0.200**		**0.233**		**0.414**	
2.0	Barium	0.0521		0.0466		0.0347		0.0315		0.0389		0.1105		0.0867		0.1170	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	**0.393**		0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	**0.01235**		**0.01015**		0.00225	
--	Calcium	566		568		405		252		284		91		60		63	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.0306		0.0255		0.0117		0.0151		0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.08110		0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.01520		0.03865		0.05560	
--	Iron	0.164		14.000		9.230		4.665		5.640		8.39		5.24		7.01	
0.015	Lead	**0.737**		0.0053		0.0031		0.0048		0.0024		**0.165**		**0.417**		**0.6345**	
--	Magnesium	149.0		145.0		103.0		65.9		73.0		16.7		11.2		13.0	
--	Manganese	4.51		8.98		7.05		3.88		4.48		1.79		1.26		1.66	
0.0020	Mercury	0.000315		0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000184		0.000508		0.001056	
--	Nickel	0.01310		0.02220		0.01790		0.00901		0.01070		0.00345		0.00245		0.00375	
--	Potassium	20.90		5.14		4.93		3.70		4.17		2.59		2.44		3.08	
0.05	Selenium	0.003740		0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.002006	
--	Sodium	189.0		146.5		125.0		81.3		91.9		18.9		16.5		17.6	
0.0020	Thallium	**0.059**		0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	55.6		7.76		5.64		3.17		3.36		8.53		5.90		2.51	

Table F-2d. (cont.)

MCL (mg/L)	Sample ID	OU2-0-GW-P2-2(B)	OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-4		OU2-0-GW-P2-5		OU2-0-GW-P2-5		OU2-0-GW-P2-5	
			Dups ave.				Dups ave.				Dups ave.		Dups ave.		Dups ave.	
	Operable Unit	OU2	OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	8/25/2015	3/13/2015		5/12/2015		8/26/2015		10/6/2015		3/10/2015		5/11/2015		8/25/2015	
	Habitat	Floodplain	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	2030	2015		1440		900		1010		297		197		210	
--	Phosphate, Total (as P)	0.0532	0.199		0.209		0.211		0.233		0.196		0.154		0.186	
--	Total Suspended Solids	9.2	6.60		6.4		8.80		4.4		17.80		15.60		12.00	
10.0	Nitrate, as N	1.31	0.00345	ND	0.00345	ND	0.40800		0.00345	ND	0.00345	ND	0.00345	ND	0.01143	
--	Chloride	585	857		642		427		387		36		32		33	
--	Sulfate	1290	1045		786		438		470		157		43		33	
--	Alkalinity, as CaCO3	167	98		102		112		123		157		158		191	
--	Total Dissolved Solids	3200	3055		2330		1445		1560		436		322		320	

Table F-2d. (cont.)

MCL (mg/L)	Sample ID	OU2-0-GW-P2-5		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E1125		OU2-0-GW-T3W0375		OU2-0-GW-T3W0375		OU2-0-GW-T3W0375	
		Dups ave.																	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	10/6/2015		3/13/2015		5/12/2015		8/26/2015		10/7/2015		3/13/2015		3/13/2015		5/12/2015		8/26/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
	Dissolved water																		
--	Aluminum	0.016	ND	0.016	ND	0.170		0.016	ND	0.016	ND	0.244		0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	**0.469**		0.000474	ND	0.000474	ND	0.000474	ND	0.00467		0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	**0.363**		0.00201		0.00286		0.00379		0.00828		0.00011	ND	0.00687		0.00794		0.00665	
2.0	Barium	0.0982		0.0656		0.0651		0.0708		0.0707		0.0304		0.0496		0.0585		0.0630	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND
--	Calcium	52		293		265		273		242		168		144		170		169	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00239		0.00022	ND	0.00022	ND	0.00022	ND
--	Iron	6.43		1.28		1.44		1.25		0.979		0.242		0.861		0.933		2.10	
0.015	Lead	**0.0381**		0.0002	ND	0.0031		0.0002	ND	0.0054		0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--	Magnesium	10.4		74.8		72.9		70.8		60.1		42.3		34.5		40.9		41.1	
--	Manganese	1.31		0.70		0.62		0.63		0.60		0.09		0.46		0.53		0.58	
0.0020	Mercury	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND
--	Nickel	0.00217		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00323		0.00212		0.00297		0.00326	
--	Potassium	2.67		2.49		2.20		2.59		2.94		6.53		3.31		3.94		4.32	
0.05	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	16.0		111.0		106.0		125.0		104.0		185.0		155.0		177.0		169.0	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	2.55		0.011		0.002	ND	0.017		0.192		0.018		0.005	ND	0.002	ND	0.002	ND
	Total water																		
--	Aluminum	0.117		2.900		0.355		0.737		0.312		1.280		0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	**0.484**		0.002320		0.000474	ND	0.000474	ND	0.00476		0.002080		0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	**0.385**		**0.01030**		0.00349		0.00651		0.00889		0.00226		0.00659		0.00830		0.00740	
2.0	Barium	0.1003		0.0875		0.0689		0.0787		0.0728		0.0461		0.0477		0.0566		0.0649	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00284		0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00060		0.00017	ND	0.00017	ND	0.00017	ND
--	Calcium	53		303		255		279		247		162		144		155		168	
0.10	Chromium	0.000436	ND	0.005670		0.000436	ND	0.000436	ND	0.000436	ND	0.004020		0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.05465		0.00440		0.00022	ND	0.00224		0.00252		0.00436		0.00022	ND	0.00022	ND	0.00022	ND
--	Iron	6.74		5.05		1.74		2.13		1.350		1.510		0.885		0.928		1.94	
0.015	Lead	**0.7690**		**0.0264**		0.0050		**0.0184**		0.0134		0.0119		0.0031		0.0002	ND	0.0002	ND
--	Magnesium	10.4		76.9		68.8		70.8		63.0		40.6		35.3		36.9		39.2	
--	Manganese	1.37		0.72		0.62		0.65		0.60		0.22		0.44		0.53		0.61	
0.0020	Mercury	0.001265		0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND
--	Nickel	0.00232		0.00272		0.00079	ND	0.00079	ND	0.00079	ND	0.00526		0.00209		0.00282		0.00314	
--	Potassium	2.66		3.03		2.35		2.59		2.99		6.37		3.32		4.36		4.42	
0.05	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.002855		0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	16.1		115.0		103.0		125.0		113.0		159.0		155.0		168.0		167.0	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.00053	ND	0.00900		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	3.10		0.051		0.008		0.043		0.203		0.041		0.012		0.007		0.002	ND

Table F-2d. (cont.)

MCL (mg/L)	Sample ID	OU2-0-GW-P2-5		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E0125		OU2-0-GW-T3E1125		OU2-0-GW-T3W0375		OU2-0-GW-T3W0375		OU2-0-GW-T3W0375
	Operable Unit	Dups ave. OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2
	Sample date	10/6/2015		3/13/2015		5/12/2015		8/26/2015		10/7/2015		3/13/2015		3/13/2015		5/12/2015		8/26/2015
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain
--	Hardness, as CaCO3	175		1070		919		989		876		573		505		540		580
--	Phosphate, Total (as P)	0.213		0.0875		0.0106	ND	0.118		0.104		NS		0.119		0.123		0.264
--	Total Suspended Solids	18.70		10		13.2		47.2		14.4		NS		1.415	ND	1.415	ND	3.2
10.0	Nitrate, as N	0.00345	ND	0.00345	ND	0.00345	ND	0.457		0.00345	ND	NS		0.00345	ND	0.00345	ND	0.0761
--	Chloride	25		361		329		399		301		NS		315		371		363
--	Sulfate	17		307		307		245		247		NS		212		186		321
--	Alkalinity, as CaCO3	173		458		385		497		436		NS		181		203		277
--	Total Dissolved Solids	234		1440		1710		1350		1190		NS		992		1190		1030

Table F-2d. (cont.)

MCL (mg/L)	Sample ID	OU2-0-GW-T3W0375		OU2-0-GW-T4E0875		OU2-0-GW-T4E0875		OU2-0-GW-T4E0875		OU2-0-GW-T4E0875		OU2-0-GW-T5E0875		OU2-0-GW-T5E0875		OU2-0-GW-T5E0875		OU2-0-GW-T5E0875	
														Dups ave.					
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	10/6/2015		3/11/2015		5/12/2015		8/26/2015		10/6/2015		3/11/2015		5/12/2015		8/25/2015		10/6/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
	Dissolved water																		
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	0.00490		0.00011	ND	0.00205		0.00215		0.00234		0.00296		0.00323		0.00460		0.00427	
2.0	Barium	0.0709		0.0719		0.0710		0.0818		0.0740		0.0777		0.0644		0.0546		0.0631	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND
--	Calcium	197		195		170		175		146		183		148		82		67	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.005430		0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00295		0.00022	ND
--	Iron	2.14		0.046	ND	0.046	ND	0.046	ND	0.110		0.486		0.327		0.281		0.290	
0.015	Lead	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--	Magnesium	45.9		43.7		37.3		39.6		29.5		46.5		36.9		21.8		17.8	
--	Manganese	0.68		0.13		0.14		0.11		0.13		0.19		0.17		0.11		0.10	
0.0020	Mercury	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND
--	Nickel	0.00361		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00401		0.00357		0.00333		0.00205	
--	Potassium	4.51		1.60		1.38		1.66		1.44		2.67		2.58		2.36		2.04	
0.05	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	157.0		139.0		126.0		139.0		124.0		76.1		74.8		58.2		50.7	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.002	ND	0.005	ND	0.006		0.002	ND	0.002	ND	0.040		0.002	ND	0.002	ND	0.002	ND
	Total water																		
--	Aluminum	0.016	ND	0.509		0.311		0.434		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	0.00545		0.00011	ND	0.00222		0.00317		0.00236		0.00290		0.00302		0.00424		0.00424	
2.0	Barium	0.0765		0.0794		0.0784		0.0879		0.0728		0.0774		0.0642		0.0499		0.0670	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND	0.00017	ND
--	Calcium	198		193		159		160		137		179		138		82		68	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND	0.000042	ND
1.3	Copper	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND	0.00022	ND
--	Iron	2.17		0.414		0.337		0.581		0.144		0.541		0.350		0.309		0.325	
0.015	Lead	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND
--	Magnesium	47.4		43.8		34.2		34.9		30.0		44.7		35.5		22.1		17.5	
--	Manganese	0.73		0.16		0.14		0.11		0.12		0.19		0.17		0.10		0.10	
0.0020	Mercury	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND	0.000004	ND
--	Nickel	0.00331		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00375		0.00356		0.00256		0.00221	
--	Potassium	4.58		1.70		1.62		1.54		1.62		2.64		2.63		2.35		2.22	
0.05	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Sodium	162.0		132.0		130.0		124.0		118.0		70.9		69.4		58.5		50.9	
0.0020	Thallium	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND	0.000022	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.002	ND	0.014		0.002	ND	0.002	ND	0.002	ND	0.013		0.002	ND	0.002	ND	0.006	

Table F-2d. (cont.)

MCL (mg/L)	Sample ID	OU2-0-GW-T3W0375		OU2-0-GW-T4E0875	OU2-0-GW-T4E0875	OU2-0-GW-T4E0875		OU2-0-GW-T4E0875		OU2-0-GW-T5E0875		OU2-0-GW-T5E0875 Dups ave.		OU2-0-GW-T5E0875		OU2-0-GW-T5E0875	
	Operable Unit	OU2		OU2	OU2	OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	10/6/2015		3/11/2015	5/12/2015	8/26/2015		10/6/2015		3/11/2015		5/12/2015		8/25/2015		10/6/2015	
	Habitat	Floodplain		Floodplain	Floodplain	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	690		661	539	543		465		630		489		296		242	
--	Phosphate, Total (as P)	0.266		0.0528	0.0655	0.058		0.0724		0.0675		0.031		0.0644		0.0835	
--	Total Suspended Solids	1.415	ND	4	5.6	1.415	ND	1.415	ND	1.415	ND	1.42	ND	1.415	ND	1.415	ND
10.0	Nitrate, as N	0.00345	ND	0.182	0.0689	0.105		0.00345	ND	0.00345	ND	0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	248		259	240	313		211		186		172		102		64.8	
--	Sulfate	421		253	262	239		229		292		237		56.4		36.6	
--	Alkalinity, as CaCO3	240		240	234	240		243		188		182		230		235	
--	Total Dissolved Solids	1160		992	1290	960		852		800		874		500		392	

Notes:
Results reported as mg/L
Samples were collected quarterly from March 2015 to October 2015
Samples analyzed for dissolved metals were field filtered by sample collectors

Key:
-- = no MCL available
GW = Groundwater
ID = Identification
mg/L = milligrams per liter
ND = Non-Detect
NS = Not Sampled; See Section 2.6 for additional details
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3

Table F-2e. Screening results for OU2 Upland groundwater samples compared with EPA MCLs

MCL (mg/L)	Sample ID	N	count of NDs	% detected	OU2-0-GW-T5E1875		OU2-0-GW-T5E1875		OU2-0-GW-T6E0375		OU2-0-GW-T6E0375	
	Operable Unit				OU2		OU2		OU2		OU2	
	Sample date				3/11/2015		5/11/2015		3/10/2015		5/11/2015	
	Habitat				Upland		Upland		Upland		Upland	
	Dissolved water											
--	Aluminum	4	4	0%	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	4	4	0%	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	4	0	100%	0.00352		0.00371		0.0056		0.00604	
2.0	Barium	4	0	100%	0.0923		0.0982		0.0628		0.0698	
0.0040	Beryllium	4	4	0%	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	4	4	0%	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND
--	Calcium	4	0	100%	179		165		375		329	
0.10	Chromium	4	4	0%	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	4	4	0%	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	4	4	0%	0.000216	ND	0.000216	ND	0.000216	ND	0.00	ND
--	Iron	4	4	0%	0.046	ND	0.046	ND	0.046	ND	0.0460	ND
0.015	Lead	4	4	0%	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND
--	Magnesium	4	0	100%	35		32.7		86.3		76.2	
--	Manganese	4	2	50%	0.00248		0.0104		0.0006	ND	0.0006	ND
0.0020	Mercury	4	4	0%	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	4	4	0%	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	4	2	50%	0.115	ND	0.115	ND	3.06		3.35	
0.05	Selenium	4	4	0%	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	4	4	0%	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	4	0	100%	52.1		50.7		90.7		87.4	
0.0020	Thallium	4	4	0%	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	4	1	75%	0.00053	ND	0.00527		0.00512		0.00698	
--	Zinc	4	3	25%	0.0045	ND	0.00238	ND	0.0119		0.00	ND
	Total water											
--	Aluminum	4	2	50%	0.157		2.05		0.016	ND	0.016	ND
0.0060	Antimony	4	4	0%	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	4	0	100%	0.00352		0.00449		0.00537		0.0065	
2.0	Barium	4	0	100%	0.0962		0.124		0.0647		0.0693	
0.0040	Beryllium	4	4	0%	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	4	4	0%	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND
--	Calcium	4	0	100%	181		169		359		336	
0.10	Chromium	4	3	25%	0.000436	ND	0.00463		0.000436	ND	0.000436	ND
--	Cobalt	4	4	0%	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	4	3	25%	0.000216	ND	0.00264		0.000216	ND	0.00	ND
--	Iron	4	2	50%	0.154		1.59		0.046	ND	0.0460	ND
0.015	Lead	4	3	25%	0.000214	ND	0.00519		0.000214	ND	0.000214	ND
--	Magnesium	4	0	100%	35.5		34.3		80		79.2	
--	Manganese	4	2	50%	0.00353		0.0477		0.0006	ND	0.0006	ND
0.0020	Mercury	4	4	0%	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	4	3	25%	0.00079	ND	0.00252		0.00079	ND	0.00079	ND
--	Potassium	4	1	75%	0.115	ND	1.19		3.11		3.42	
0.05	Selenium	4	4	0%	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	4	4	0%	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	4	0	100%	50.7		51.8		87.6		89.6	
0.0020	Thallium	4	4	0%	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	4	0	100%	0.00531		0.00802		0.00528		0.00724	
--	Zinc	4	1	75%	0.0137		0.0182		0.0191		0.00238	ND

Table F-2e. (cont.)

MCL (mg/L)	Sample ID	N	count of NDs	% detected	OU2-0-GW-T5E1875		OU2-0-GW-T5E1875	OU2-0-GW-T6E0375		OU2-0-GW-T6E0375	
	Operable Unit				OU2		OU2	OU2		OU2	
	Sample date				3/11/2015		5/11/2015	3/10/2015		5/11/2015	
	Habitat				Upland		Upland	Upland		Upland	
--	Hardness, as CaCO3	4	0	100%	599		563	1230		1170	
--	Phosphate, Total (as P)	4	3	25%	0.0106	ND	0.153	0.0106	ND	0.0106	ND
--	Total Suspended Solids	4	2	50%	16		31.6	1.415	ND	1.415	ND
10.0	Nitrate, as N	4	0	100%	0.396		0.384	1.67		0.417	
--	Chloride	4	0	100%	223		248	408		384	
--	Sulfate	4	0	100%	187		194	623		601	
--	Alkalinity, as CaCO3	4	0	100%	161		164	213		224	
--	Total Dissolved Solids	4	0	100%	840		872	1920		1860	

Notes:
Results reported as mg/L
Samples were collected quarterly from March 2015 to October 2015
Samples analyzed for dissolved metals were field filtered by sample collectors

Key:
-- = no MCL available
GW = Groundwater
ID = Identification
mg/L = milligrams per liter
ND = Non-Detect
NS = Not Sampled; See Section 2.6 for additional details
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3

Table F-2f. Screening results for OU3 Floodplain groundwater samples compared with EPA MCLs

MCL (mg/L)	Sample ID	N	count of NDs	% detected	OU3-0-GW-FPT-2B		OU3-0-GW-FPT-2B		OU3-0-GW-FPT-6A		OU3-0-GW-FPT-6A Dups ave.		OU3-0-GW-FPT-6A		OU3-0-GW-FPT-6A		OU3-0-GW-MR-1	
	Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date				5/13/2015		3/16/2015		5/13/2015		8/27/2015		3/16/2015		10/7/2015		3/16/2015	
	Habitat				Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
	Dissolved water																	
--	Aluminum	49	46	6%	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	49	30	39%	**0.0378**		**0.0335**		**0.031**		**0.03225**		**0.0186**		**0.0315**		0.00247	
0.010	Arsenic	49	9	82%	0.000106	ND	0.00377		0.00913		**0.01715**		0.00323		**0.0218**		0.0053	
2.0	Barium	49	0	100%	0.0499		0.0262		0.0167		0.03375		0.00925		0.0319		0.0544	
0.0040	Beryllium	49	49	0%	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	49	30	39%	**0.0423**		**0.0186**		**0.112**		**0.128**		**0.123**		**0.131**		0.000171	ND
--	Calcium	49	0	100%	239		170		495		558		489		469		128	
0.10	Chromium	49	48	2%	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	49	35	29%	0.0000416	ND	0.00489		0.00411		0.004135		0.00421		0.0000416	ND	0.0000416	ND
1.3	Copper	49	32	35%	0.0611		0.0313		0.101		0.0602		0.0811		0.0823		0.000216	ND
--	Iron	49	11	78%	0.046	ND	0.119		0.203		1.03		0.1		0.732		3.83	
0.015	Lead	49	31	37%	**0.0324**		**0.0967**		**0.0499**		**0.0840**		**0.0318**		**0.0585**		0.000214	ND
--	Magnesium	49	0	100%	46.9		36.3		37.7		58.2		36.4		54.1		25.8	
--	Manganese	49	0	100%	0.548		1.32		2.42		2.8		2.65		2.45		5.03	
0.0020	Mercury	49	43	12%	0.00000446	ND	0.000163		0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000227		0.00000446	ND
--	Nickel	49	19	61%	0.0035		0.00266		0.0154		0.0168		0.0157		0.0141		0.00282	
--	Potassium	49	2	96%	0.115	ND	0.115	ND	2.57		2.495		2.33		2.6		11.3	
0.05	Selenium	49	42	14%	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	49	49	0%	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	49	0	100%	69.7		79.7		88.5		150		73.5		147		114	
0.0020	Thallium	49	38	22%	**0.00203**		0.0000217	ND	**0.0148**		**0.0202**		**0.00991**		**0.0144**		0.0000217	ND
--	Vanadium	49	42	14%	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	49	8	84%	10.3		7.16		41.5		44.4		48.5		38		0.0972	
	Total water																	
--	Aluminum	49	25	49%	0.016	ND	0.684		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	49	23	53%	**0.0398**		**0.0446**		**0.0328**		**0.02885**		**0.0179**		**0.0334**		0.00511	
0.010	Arsenic	49	4	92%	0.000106	ND	**0.0141**		**0.012**		**0.0154**		0.00787		**0.0316**		0.00584	
2.0	Barium	49	0	100%	0.0535		0.0338		0.0166		0.0329		0.00897		0.0313		0.056	
0.0040	Beryllium	49	49	0%	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	49	24	51%	**0.046**		**0.0203**		**0.104**		**0.1375**		**0.133**		**0.131**		0.00106	
--	Calcium	49	0	100%	240		179		487		559		506		484		120	
0.10	Chromium	49	43	12%	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	49	35	29%	0.0000416	ND	0.0112		0.00408		0.0000416	ND	0.00411		0.0000416	ND	0.0000416	ND
1.3	Copper	49	19	61%	0.0711		0.0831		0.114		0.09635		0.0875		0.102		0.00656	
--	Iron	49	3	94%	0.046	ND	1.64		0.318		1.08		0.272		0.981		3.58	
0.015	Lead	49	5	90%	**0.0623**		**0.565**		**0.0598**		**0.0929**		**0.0484**		**0.101**		**0.0276**	
--	Magnesium	49	0	100%	48.2		38.6		36.9		57.8		37.4		56.8		25	
--	Manganese	49	0	100%	0.626		1.81		2.44		2.935		2.65		2.38		4.4	
0.0020	Mercury	49	37	24%	0.00000446	ND	0.00102		0.000913		0.0008245		0.000313		0.00133		0.00118	
--	Nickel	49	19	61%	0.00346		0.0037		0.015		0.01715		0.0161		0.0145		0.00355	
--	Potassium	49	2	96%	0.115	ND	0.115	ND	2.61		2.465		2.36		2.73		10.8	
0.05	Selenium	49	41	16%	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	49	45	8%	0.0000217	ND	0.0000217	ND	0.00272		0.002475		0.0000217	ND	0.00404		0.0000217	ND
--	Sodium	49	0	100%	71		88.5		88.5		150.5		72.2		160		108	
0.0020	Thallium	49	38	22%	**0.00218**		0.0000217	ND	**0.0145**		**0.0206**		**0.0101**		**0.0149**		0.0000217	ND
--	Vanadium	49	43	12%	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	49	0	100%	10.8		7.46		47.5		44.45		46.7		35.4		0.304	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	N	count of NDs	% detected	OU3-0-GW-FPT-2B		OU3-0-GW-FPT-2B		OU3-0-GW-FPT-6A		OU3-0-GW-FPT-6A Dups ave.		OU3-0-GW-FPT-6A		OU3-0-GW-FPT-6A		OU3-0-GW-MR-1	
	Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date				5/13/2015		3/16/2015		5/13/2015		8/27/2015		3/16/2015		10/7/2015		3/16/2015	
	Habitat				Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	49	0	100%	797		606		1370		1635		1420		1440		404	
--	Phosphate, Total (as P)	47	32	32%	0.0106	ND	0.0106	ND	0.0106	ND	0.011	ND	0.0106	ND	0.0106	ND	2.09	
--	Total Suspended Solids	47	17	64%	1.415	ND	82.4		1.415	ND	4.60		1.415	ND	1.415	ND	46.8	
10.0	Nitrate, as N	47	31	34%	0.00345	ND	0.00345	ND	0.00345	ND	0.03190		0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	47	0	100%	147		169		193		479		133		465		202	
--	Sulfate	47	0	100%	569		329		980		800		1160		825		168	
--	Alkalinity, as CaCO3	47	0	100%	156		240		340		512		285		406		261	
--	Total Dissolved Solids	47	0	100%	1440		960		2380		2295		1920		2190		728	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	OU3-0-GW-MR-1		OU3-0-GW-MR-2		OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-5		OU3-0-GW-MR-5		OU3-0-GW-MR-5	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	5/13/2015		5/13/2015		3/16/2015		5/13/2015		8/27/2015		10/7/2015		3/16/2015		5/13/2015		8/27/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
	Dissolved water																		
--	Aluminum	0.016	ND	0.197		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.81		0.016	ND	0.016	ND
0.0060	Antimony	0.000474	ND	0.00368		**0.0306**		**0.0374**		**0.051**		**0.0531**		0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	0.00234		0.00685		0.000106	ND	0.000106	ND	0.00205		**0.0113**		0.000106	ND	0.000106	ND	0.000106	ND
2.0	Barium	0.0697		0.0469		0.0313		0.0384		0.0319		0.0421		0.0965		0.105		0.103	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000171	ND	0.000984		**0.0685**		**0.0542**		**0.0385**		**0.105**		0.000171	ND	0.000171	ND	0.000171	ND
--	Calcium	134		92.1		177		156		146		259		132		137		113	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0507		0.0381		0.0244		0.0987		0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.000216	ND	0.0113		0.108		0.0461		0.0432		0.0392		0.00312		0.000216	ND	0.000216	ND
--	Iron	6.34		0.687		6.12		4.7		4.39		14.9		2.86		1.58		1.19	
0.015	Lead	0.00226		**0.0396**		**0.163**		**0.127**		**0.119**		**0.25**		**0.019**		0.000214	ND	0.000214	ND
--	Magnesium	26.5		23		34.5		30.4		26.7		67.3		37.2		39.7		31.9	
--	Manganese	6.18		2.4		4.64		3.73		2.52		9.65		0.369		0.479		0.339	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.000792		0.000687		0.000925		0.00059		0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00353		0.0262		0.0207		0.0141		0.0566		0.00249		0.00079	ND	0.00079	ND
--	Potassium	10.6		8.17		2.44		2.34		2.74		2.39		2.03		1.83		2.13	
0.05	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	109		199		157		141		70.1		55.3		58		64.4		65	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	**0.00257**		**0.00276**		**0.00399**		**0.00442**		0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.00991		0.0593		25.5		22.1		12.6		50.1		0.0417		0.00238	ND	0.00732	
	Total water																		
--	Aluminum	0.13		0.21		0.016	ND	0.197		0.016	ND	0.016	ND	1.18		0.661		0.409	
0.0060	Antimony	0.00562		0.00228		**0.036**		**0.0552**		**0.0523**		**0.0529**		0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	0.00383		0.00566		0.00675		**0.0157**		0.00246		**0.0111**		0.00277		0.00235		0.000106	ND
2.0	Barium	0.0691		0.0379		0.0316		0.043		0.0338		0.0424		0.0976		0.112		0.113	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000171	ND	0.000623		**0.0669**		**0.0566**		**0.0398**		**0.106**		0.000171	ND	0.000171	ND	0.000171	ND
--	Calcium	132		94.8		168		160		147		269		125		134		115	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.00239		0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0481		0.0396		0.025		0.0981		0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.029		0.009		0.125		0.103		0.0525		0.0466		0.0045		0.00309		0.000216	ND
--	Iron	6.09		0.834		6.02		5.4		4.57		14.2		3.26		2.36		1.58	
0.015	Lead	**0.0996**		**0.0391**		**0.365**		**0.661**		**0.129**		**0.26**		**0.0307**		**0.0158**		0.00683	
--	Magnesium	25.7		21.2		33		31.3		26.5		70.5		36.9		39.2		31.6	
--	Manganese	6.53		2.66		4.83		3.71		2.59		9.74		0.423		0.499		0.359	
0.0020	Mercury	**0.00559**		0.00000446	ND	0.00107		**0.00222**		0.00104		0.0007		0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00293		0.0254		0.0221		0.0142		0.0574		0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	10.9		7.42		2.48		2.47		2.77		2.35		2.18		2.01		2.24	
0.05	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0024		0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	109		190		150		146		70.7		59.9		53.8		64.3		66.4	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	**0.00255**		**0.00286**		**0.00404**		**0.00452**		0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.0695		0.0386		25.9		22.5		13.1		50.9		0.069		0.0226		0.0176	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	OU3-0-GW-MR-1	OU3-0-GW-MR-2	OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-3		OU3-0-GW-MR-5		OU3-0-GW-MR-5		OU3-0-GW-MR-5	
	Operable Unit	OU3	OU3	OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	5/13/2015	5/13/2015	3/16/2015		5/13/2015		8/27/2015		10/7/2015		3/16/2015		5/13/2015		8/27/2015	
	Habitat	Floodplain	Floodplain	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	436	324	556		528		476		962		464		497		417	
--	Phosphate, Total (as P)	NS	NS	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	NS	NS	35.6		20.5		8		28		19.2		10.4		7.2	
10.0	Nitrate, as N	NS	NS	0.00345	ND	0.0126		0.00345	ND	0.00345	ND	0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	NS	NS	299		244		151		99.3		135		176		135	
--	Sulfate	NS	NS	356		343		272		860		239		209		160	
--	Alkalinity, as CaCO3	NS	NS	143		154		169		154		166		158		226	
--	Total Dissolved Solids	NS	NS	1160		1290		652		1500		628		772		604	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	OU3-0-GW-MR-5		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-P2-1(A)		OU3-0-GW-P2-1(A)		OU3-0-GW-P2-1(A)		OU3-0-GW-P2-1(A)	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	10/7/2015		3/16/2015		5/13/2015		8/26/2015		10/7/2015		5/11/2015		8/25/2015		10/6/2015		3/10/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
	Dissolved water																		
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	0.000106	ND	**0.0169**		**0.0204**		**0.03**		**0.0322**		**0.168**		**0.21**		**0.193**		**0.151**	
2.0	Barium	0.0934		0.0476		0.0575		0.0523		0.0557		0.164		0.215		0.187		0.182	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND
--	Calcium	109		138		146		121		115		365		390		343		370	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND
--	Iron	1.3		1.11		1.02		0.947		0.744		28.2		26		23.8		26.7	
0.015	Lead	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND
--	Magnesium	28.8		32.6		34.1		28.4		25		94.5		98.9		86.9		90.7	
--	Manganese	0.349		1.04		1.1		1.07		1.12		8.92		9.04		8.07		8.43	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	2.02		2.19		2.15		2.28		2.16		1.92		2.29		2.18		1.84	
0.05	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	61.1		75		86		81.4		68.2		124		134		130		115	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.00238	ND	1.19		1.36		1.11		1.07		0.00238	ND	0.00238	ND	0.00238	ND	0.0146	
	Total water																		
--	Aluminum	0.238		0.302		0.855		0.134		0.129		0.952		0.171		0.016	ND	0.016	ND
0.0060	Antimony	0.000474	ND	0.000474	ND	0.00232		0.00228		0.00203		0.0023		0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	0.000106	ND	**0.0185**		**0.0246**		**0.0296**		**0.033**		**0.168**		**0.214**		**0.195**		**0.158**	
2.0	Barium	0.0938		0.051		0.0659		0.0526		0.0569		0.198		0.208		0.189		0.187	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND
--	Calcium	106		139		147		119		113		356		391		324		357	
0.10	Chromium	0.000436	ND	0.000436	ND	0.00255		0.000436	ND	0.000436	ND	0.00243		0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.00234		0.000216	ND	0.00466		0.000216	ND	0.000216	ND	0.00445		0.000216	ND	0.000216	ND	0.000216	ND
--	Iron	1.56		1.58		2.22		0.986		0.942		28.5		25.5		23.9		27.2	
0.015	Lead	0.00368		0.00678		0.0123		0.00288		0.00404		**0.0459**		0.00835		0.00671		0.00361	
--	Magnesium	28.2		33.3		34.2		26		24.5		92		102		82.1		86.2	
--	Manganese	0.409		1.05		1.12		1.06		1.11		8.91		0.0462		8.23		8.41	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	2.08		2.3		2.19		2.19		2.21		2.07		2.35		2.07		1.81	
0.05	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	62.4		74.1		88		76.2		70.6		120		135		124		112	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.00629		1.32		1.4		1.1		1.11		0.0467		0.0102		0.00927		0.0213	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	OU3-0-GW-MR-5		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-MR-6		OU3-0-GW-P2-1(A)		OU3-0-GW-P2-1(A)		OU3-0-GW-P2-1(A)		OU3-0-GW-P2-1(A)	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	10/7/2015		3/16/2015		5/13/2015		8/26/2015		10/7/2015		5/11/2015		8/25/2015		10/6/2015		3/10/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	381		485		508		404		383		1270		1400		1150		1250	
--	Phosphate, Total (as P)	0.0605		0.0106	ND	0.065		0.0636		0.089		0.542		0.57		0.592		0.618	
--	Total Suspended Solids	4.4		8.8		25.2		4.4		4.8		54.8		29.6		33.2		31.2	
10.0	Nitrate, as N	0.00345	ND	0.00345	ND	0.00345	ND	0.0498		0.00345	ND	0.00345	ND	0.00345	ND	0.00345	ND	0.00345	ND
--	Chloride	100		173		236		138		108		521		618		464		487	
--	Sulfate	163		213		199		215		190		627		646		601		622	
--	Alkalinity, as CaCO3	210		166		147		213		210		294		297		289		278	
--	Total Dissolved Solids	636		720		1180		676		628		2170		2170		1900		2250	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-12		OU3-0-GW-RT-12		OU3-0-GW-T1E0125		OU3-0-GW-T1E0125	
	Operable Unit	Dups ave. OU3		Dups ave. OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	3/16/2015		5/13/2015		8/26/2015		10/7/2015		3/16/2015		5/12/2015		3/16/2015		5/12/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	**0.01395**		**0.0142**		**0.0152**		**0.0156**		**0.0155**		**0.0179**		0.000474	ND	0.000474	ND
0.010	Arsenic	0.004165		0.00531		**0.0121**		0.0096		0.000106	ND	0.000106	ND	0.00435		**0.0102**	
2.0	Barium	0.05115		0.0652		0.0364		0.0292		0.0109		0.0157		0.112		0.127	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	**0.118**		**0.121**		**0.0169**		**0.0113**		**0.219**		**0.214**		0.000171	ND	0.000171	ND
--	Calcium	225		269.5		138		100		343		267		306		336	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.00858		0.00869	
1.3	Copper	0.0194		0.00789		0.000216	ND	0.000216	ND	0.0255		0.03		0.000216	ND	0.000216	ND
--	Iron	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.046	ND	0.367		0.485	
0.015	Lead	**0.295**		**0.243**		**0.108**		**0.0945**		0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND
--	Magnesium	49.85		60.65		30.7		20.9		44		33.7		72.8		85.2	
--	Manganese	0.0759		0.07775		0.0893		0.0852		0.00987		0.0072		5.78		5.73	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00239		0.002715		0.00079	ND	0.00079	ND	0.0101		0.00878		0.00345		0.00358	
--	Potassium	2.61		2.87		2.29		1.97		2.31		3.98		2.69		2.85	
0.05	Selenium	0.00331		0.0024		0.000135	ND	0.000135	ND	0.00928		0.0245		0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	129		203		147		114		78.6		51.3		263		297	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	**0.0034**		**0.00541**		0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00571	
--	Zinc	8.37		9.64		4.24		3.1		43.3		43.3		0.32		0.204	
	Total water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	**0.01505**		**0.01445**		**0.0156**		**0.016**		**0.018**		**0.0198**		0.000474	ND	0.000474	ND
0.010	Arsenic	0.00437		0.00574		**0.0141**		**0.0128**		0.000106	ND	0.003		0.00416		**0.0115**	
2.0	Barium	0.0548		0.06645		0.0365		0.0298		0.0118		0.0173		0.11		0.134	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	**0.125**		**0.122**		**0.0183**		**0.0125**		**0.232**		**0.218**		0.000171	ND	0.0043	
--	Calcium	231.5		267.5		136		101		333		264		327		346	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.00836		0.00921	
1.3	Copper	0.0195		0.00824		0.00347		0.00283		0.0369		0.0408		0.000216	ND	0.000216	ND
--	Iron	0.046	ND	0.046	ND	0.128		0.133		0.175		0.848		0.385		0.522	
0.015	Lead	**0.3155**		**0.244**		**0.156**		**0.174**		0.00997		0.00536		0.000214	ND	0.000214	ND
--	Magnesium	49.85		59.75		29.8		22.4		44.7		32.9		75.2		85	
--	Manganese	0.0782		0.08295		0.14		0.0944		0.197		0.159		5.83		6.09	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.000205		0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.002565		0.002905		0.00079	ND	0.00079	ND	0.0106		0.00912		0.00351		0.00367	
--	Potassium	2.65		2.84		2.21		2.18		2.25		4.03		2.76		2.91	
0.05	Selenium	0.003475		0.002465		0.000135	ND	0.000135	ND	0.00988		0.025		0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	130.5		205		132		120		73.4		50.1		278		310	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	**0.00361**		**0.00545**		0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	9.19		9.925		4.16		3.15		41.7		44.2		0.254		0.236	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-11		OU3-0-GW-RT-12		OU3-0-GW-RT-12		OU3-0-GW-T1E0125		OU3-0-GW-T1E0125	
		Dups ave.		Dups ave.													
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	3/16/2015		5/13/2015		8/26/2015		10/7/2015		3/16/2015		5/12/2015		3/16/2015		5/12/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	784		914		463		344		1020		794		1130		1210	
--	Phosphate, Total (as P)	0.011	ND	0.011	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.42	ND	1.42	ND	1.415	ND	1.415	ND	3.6		1.415	ND	1.415	ND	1.415	ND
10.0	Nitrate, as N	0.10145		0.04490		0.0603		0.00345	ND	0.102		3.24		0.00345	ND	0.00345	ND
--	Chloride	370		589		328		159		112		83.8		951		1040	
--	Sulfate	375		299		235		198		915		719		163		149	
--	Alkalinity, as CaCO3	192		186		174		162		140		144		281		276	
--	Total Dissolved Solids	1300		2280		908		640		1490		1530		2220		2880	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	OU3-0-GW-T1E0125		OU3-0-GW-T1E0125		OU3-0-GW-T2E0125		OU3-0-GW-T2E0125		OU3-0-GW-T2E0125		OU3-0-GW-T2E0125		OU3-0-GW-T2W0375		OU3-0-GW-T2W0375	
				Dups ave.													
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	8/26/2015		10/7/2015		3/13/2015		5/12/2015		8/26/2015		10/6/2015		3/13/2015		5/12/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
	Dissolved water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.00532		0.000474	ND	0.000474	ND
0.010	Arsenic	**0.015**		**0.0151**		0.00268		0.00331		0.00387		0.00502		0.00229		0.00259	
2.0	Barium	0.0958		0.102		0.032		0.0321		0.0392		0.047		0.183		0.169	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000724		0.000748	
--	Calcium	231		240.5		195		183		180		166		327		307	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.00572		0.00577		0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.00225	
--	Iron	0.49		0.452		0.669		0.675		0.883		0.571		0.046	ND	0.046	ND
0.015	Lead	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.00293		0.000214	ND	0.000214	ND
--	Magnesium	55.4		55.45		44.9		42.3		42.9		39.5		80.1		76.7	
--	Manganese	4.13		4.185		0.0499		0.0515		0.0593		0.0576		0.00959		0.00917	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00275		0.00249		0.00202		0.00212		0.0021		0.00079	ND	0.0105		0.0117	
--	Potassium	2.75		2.82		3.77		3.98		4.51		4.03		2.51		2.46	
0.05	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	281		262		181		187		199		161		161		164	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.0061		0.00725	
--	Zinc	0.05		0.0965		0.0134		0.00677		0.00597		0.0125		0.0451		0.0392	
	Total water																
--	Aluminum	0.016	ND	0.016	ND	0.016	ND	0.157		0.016	ND	0.016	ND	0.016	ND	0.241	
0.0060	Antimony	0.000474	ND	0.001267		0.000474	ND	0.000474	ND	0.000474	ND	0.00512		0.000474	ND	0.00551	
0.010	Arsenic	**0.0154**		**0.01515**		0.00269		0.00454		0.00412		0.00564		0.00231		0.00306	
2.0	Barium	0.0943		0.1035		0.0305		0.0342		0.0402		0.0526		0.185		0.181	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000862		0.00114		0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000727		0.00488	
--	Calcium	233		246		188		170		175		166		327		282	
0.10	Chromium	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.00586		0.00598		0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.00231		0.00312		0.0214	
--	Iron	0.466		0.49		0.668		0.979		0.863		0.708		0.131		0.269	
0.015	Lead	0.000214	ND	0.000214	ND	0.00447		0.0115		0.00417		0.0124		0.00219		0.0129	
--	Magnesium	51.6		57.15		44.5		39		39.8		40.7		79.8		69.2	
--	Manganese	4.05		4.355		0.0483		0.0508		0.0624		0.063		0.00997		0.0119	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00261		0.002665		0.00225		0.00233		0.00229		0.00221		0.0108		0.0203	
--	Potassium	2.78		2.885		3.7		4.26		4.37		4.04		2.48		2.89	
0.05	Selenium	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.00202	
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	269		279.5		174		181		192		161		160		149	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND	0.00565		0.0318	
--	Zinc	0.0496		0.1154		0.0151		0.0154		0.0076		0.027		0.0498		0.175	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	OU3-0-GW-T1E0125		OU3-0-GW-T1E0125 Dups ave.		OU3-0-GW-T2E0125		OU3-0-GW-T2E0125		OU3-0-GW-T2E0125		OU3-0-GW-T2E0125		OU3-0-GW-T2W0375		OU3-0-GW-T2W0375	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	8/26/2015		10/7/2015		3/13/2015		5/12/2015		8/26/2015		10/6/2015		3/13/2015		5/12/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	794		850		652		585		600		582		1140		989	
--	Phosphate, Total (as P)	0.0106	ND	0.054		0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND	0.0106	ND
--	Total Suspended Solids	1.415	ND	1.42	ND	1.415	ND	8		3.2		1.415	ND	1.415	ND	1.415	ND
10.0	Nitrate, as N	0.298		0.00345	ND	0.00345	ND	0.00345	ND	0.127		0.00345	ND	0.016		0.00345	ND
--	Chloride	778		735		347		374		455		319		853		682	
--	Sulfate	142		132		417		256		186		201		191		236	
--	Alkalinity, as CaCO3	264		267		249		220		284		279		192		166	
--	Total Dissolved Solids	1640		1725		1270		1330		1270		1140		2040		1870	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	OU3-0-GW-T6E1350		OU3-0-GW-T6E1350		OU3-0-GW-T6E1350		OU3-0-GW-T6E1350		OU3-0-GW-T6W0625		OU3-0-GW-T6W0625		OU3-0-GW-T6W0625		OU3-0-GW-T6W0625	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	3/10/2015		5/11/2015		8/25/2015		10/6/2015		3/10/2015		5/11/2015		8/25/2015		10/6/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
	Dissolved water																
--	Aluminum	0.21		0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND	0.016	ND
0.0060	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	0.00407		0.00984		0.0071		0.00926		**0.0169**		**0.0181**		**0.0242**		**0.0251**	
2.0	Barium	0.0536		0.111		0.066		0.0654		0.0681		0.0571		0.0761		0.0762	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND
--	Calcium	169		165		171		167		166		126		158		159	
0.10	Chromium	0.000436	ND	0.000436	ND	0.00282		0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.00415		0.0062		0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND
--	Iron	0.596		0.157		0.046	ND	0.046	ND	3.74		2.99		3.5		3.92	
0.015	Lead	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND	0.000214	ND
--	Magnesium	42.5		43.2		44.7		43.5		39.5		32.5		40.1		36.1	
--	Manganese	0.0962		0.129		0.0292		0.0146		1.97		1.58		1.81		1.88	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00406		0.00673		0.00359		0.00385		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	3.85		3.6		4.07		3.71		2.57		2.44		3.22		3.1	
0.05	Selenium	0.002		0.00476		0.00252		0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	42.6		42.3		45.8		45.2		131		123		149		163	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.0138		0.0172		0.0295		0.04		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.0144		0.00238	ND	0.00238	ND	0.00238	ND	0.0783		0.0717		0.0673		0.0701	
	Total water																
--	Aluminum	0.927		2.13		3.71		1.67		0.189		0.446		0.334		0.276	
0.0060	Antimony	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND	0.000474	ND
0.010	Arsenic	0.00584		**0.0119**		**0.0156**		**0.0116**		**0.0208**		**0.0183**		**0.0236**		**0.0255**	
2.0	Barium	0.0651		0.0993		0.122		0.0912		0.0716		0.0594		0.069		0.0769	
0.0040	Beryllium	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND	0.0000119	ND
0.0050	Cadmium	0.000581		0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000171	ND	0.000723		0.000171	ND
--	Calcium	167		164		173		156		155		127		154		147	
0.10	Chromium	0.000436	ND	0.00418		0.00762		0.00351		0.000436	ND	0.000436	ND	0.000436	ND	0.000436	ND
--	Cobalt	0.00526		0.00434		0.00448		0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND	0.0000416	ND
1.3	Copper	0.000216	ND	0.00324		0.00438		0.00223		0.000216	ND	0.000216	ND	0.000216	ND	0.000216	ND
--	Iron	1.56		2.39		3.36		1.5		4.17		3.35		3.57		4.18	
0.015	Lead	0.000214	ND	0.00745		0.00786		0.00447		0.00414		0.011		0.00616		0.00671	
--	Magnesium	43.9		44.1		46.3		40.6		40.3		32.6		39.4		36.7	
--	Manganese	0.133		0.0619		0.0469		0.0203		1.92		1.62		1.86		1.84	
0.0020	Mercury	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND	0.00000446	ND
--	Nickel	0.00553		0.0054		0.00608		0.00472		0.00079	ND	0.00079	ND	0.00079	ND	0.00079	ND
--	Potassium	4.23		3.9		4.81		3.84		2.49		2.47		3.15		3.23	
0.05	Selenium	0.00254		0.00269		0.00242		0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND	0.000135	ND
--	Silver	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Sodium	42		42.1		45.8		43.1		125		123		147		152	
0.0020	Thallium	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND	0.0000217	ND
--	Vanadium	0.0171		0.0369		0.0542		0.0485		0.00053	ND	0.00053	ND	0.00053	ND	0.00053	ND
--	Zinc	0.0408		0.0179		0.016		0.0114		0.124		0.108		0.0989		0.0924	

Table F-2f. (cont.)

MCL (mg/L)	Sample ID	OU3-0-GW-T6E1350		OU3-0-GW-T6E1350		OU3-0-GW-T6E1350		OU3-0-GW-T6E1350		OU3-0-GW-T6W0625		OU3-0-GW-T6W0625		OU3-0-GW-T6W0625		OU3-0-GW-T6W0625	
	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	3/10/2015		5/11/2015		8/25/2015		10/6/2015		3/10/2015		5/11/2015		8/25/2015		10/6/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Hardness, as CaCO3	598		590		623		557		554		451		547		518	
--	Phosphate, Total (as P)	0.0534		0.0106	ND	0.0106	ND	0.0106	ND	0.245		0.212		0.213		0.237	
--	Total Suspended Solids	56.4		7.2		6		56.8		4.4		20.8		4.8		7.6	
10.0	Nitrate, as N	0.376		0.448		0.402		0.442		0.00345	ND	0.00345	ND	0.158		0.00345	ND
--	Chloride	216		219		255		212		338		305		318		333	
--	Sulfate	223		225		216		217		139		181		152		213	
--	Alkalinity, as CaCO3	175		175		179		176		247		224		235		223	
--	Total Dissolved Solids	900		956		980		864		1080		864		1020		1050	

Notes:
Results reported as mg/L
Samples were collected quarterly from March 2015 to October 2015
Samples analyzed for dissolved metals were field filtered by sample collectors

Key:
-- = no MCL available
GW = Groundwater
ID = Identification
mg/L = milligrams per liter
ND = Non-Detect
NS = Not Sampled; See Section 2.6 for additional details
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3

Table F-3a. Screening results for sediment samples compared with EPA residential screening values

		Sample ID									
		Operable Unit									
		Sample date									
Residential Soil (mg/kg)		Habitat	N	count of NDs	# detected	Minimum	Maximum	Average	UCLM	Stdev	GeoMean
77000	n	Aluminum	14	0	100%	1450	36000	10621	1953	9.5E+03	7661
31.0	n	Antimony	14	0	100%	24.0	287	149	16.9	8.2E+01	122
0.68	c*R	Arsenic	14	0	100%	27.2	464	206	30.0	1.5E+02	156
15000	n	Barium	14	0	100%	60.1	514	185	26.1	1.3E+02	153
160	n	Beryllium	14	14	0%	0.0037	0.012	0.0055	0.00051	2.5E-03	0.0051
71.0	n	Cadmium	14	0	100%	13.4	131	63.4	6.4	3.1E+01	55.2
--	--	Calcium	14	0	100%	7350	58050	31991	3443	1.7E+04	26679
120000	nm	Chromium	14	4	71%	1.6	66.5	25.3	3.9	1.9E+01	14.8
23.0	n	Cobalt	14	0	100%	2.3	29.9	11.6	1.8	8.7E+00	8.9
3100	n	Copper	14	0	100%	37.00	428	232	22.9	1.1E+02	200
55000	n	Iron	14	0	100%	10100	105000	27805	4873	2.4E+04	22870
400	L	Lead	14	0	100%	47.3	7715	4046	502	2.4E+03	2738
--	--	Magnesium	14	0	100%	2430	16050	9755	748	3.6E+03	8924
1800	n	Manganese	14	0	100%	279	6710	2253	399	1.9E+03	1614
23.0	n	Mercury	14	1	93%	0.0019	11.9	4.0	0.70	3.4E+00	1.7
1500	n	Nickel	14	13	7%	1.4	44.1	5.1	2.3	1.1E+01	2.4
--	--	Potassium	14	0	100%	651	7280	2606	418	2.0E+03	2036
390	n	Selenium	14	13	7%	0.34	62.8	5.0	3.4	1.7E+01	0.68
390	n	Silver	14	1	93%	0.014	35.7	19.8	2.1	1.0E+01	11.6
--	--	Sodium	14	1	93%	5.1	881	408	50.4	2.5E+02	289
0.78	n	Thallium	14	12	14%	0.0031	5.45	0.63	0.34	1.6E+00	0.012
390	n	Vanadium	14	0	100%	5.5	57.9	21.6	3.7	1.8E+01	15.7
23000	n	Zinc	14	0	100%	1650	32800	12436	1674	8.1E+03	9939
--	--	Phosphate, Total (as P)	14	0	100%	452	2130	1310	77.8	3.8E+02	1246
--	--	Percent Moisture (%)	14	0	100%	18.9	75.0	38.3	3.6	1.8E+01	35.0

Table F-3a. (cont.)

	OU2 Samples									
Sample ID	OU2-0-SD-BIRF		OU2-0-SD-IRF		OU2-0-SD-SCBNPRR		OU2-0-SD-SCI		OU2-0-SD-SCWWT	
							Dups ave		**Dups ave**	
Operable Unit	OU2		OU2		OU2		OU2		OU2	
Sample date	7/27/2015		7/27/2015		7/28/2015		7/27/2015		7/28/2015	
Habitat	Stream		Stream		Stream		Stream		Stream	
Aluminum	5770		3010		10200		7120		4250	
Antimony	**251**		**128**		**108**		**249**		**187.5**	
Arsenic	**254**		**103**		**142**		**194**		**442**	
Barium	64.4		118		246		60.05		110.25	
Beryllium	0.003975	ND	0.00565	ND	0.004395	ND	0.0044125	ND	0.0037425	ND
Cadmium	67.9		34.2		59.4		**95.4**		**85**	
Calcium	41000		29300		27800		50050		58050	
Chromium	34.8		2.31	ND	27.7		39.05		25.3	
Cobalt	2.32		6.21		27.8		4.765		2.535	
Copper	317		133		125		358.5		427.5	
Iron	12200		10100		23200		17250		15420	
Lead	**4670**		**1840**		**2330**		**5920**		**7715**	
Magnesium	10500		5820		12000		12170		16050	
Manganese	1370		1430		**6160**		**2135**		1735	
Mercury	7.82		2.02		3.69		3.405		1.845	
Nickel	1.46	ND	2.08	ND	1.615	ND	1.6225	ND	1.375	ND
Potassium	1590		984		1160		2645		1465	
Selenium	0.364	ND	0.52	ND	0.4025	ND	0.40425	ND	0.34275	ND
Silver	22.7		9.68		19.4		33.7		29.4	
Sodium	362		340		403		281.75		196.5	
Thallium	0.00337	ND	0.004805	ND	0.00373	ND	5.451945		3.3115625	
Vanadium	10.7		7.08		29.5		11.5		5.52	
Zinc	19000		6430		10300		21000		18250	
Phosphate, Total (as P)	1390		452		1270		1665		1380	
Percent Moisture (%)	22.1		45		32.7		35.1		18.85	

Table F-3a. (cont.)

	OU3 Samples								
Sample ID	OU3-0-SD-MRUBP	OU3-0-SD-NPCWR	OU3-0-SD-SC1C	OU3-0-SD-SC248AC	OU3-0-SD-SC248NRB	OU3-0-SD-SCRF72	OU3-0-SD-SCRFR	OU3-0-SD-SCURTFB	OU3-0-SD-SPCWR
								Dups ave	
Operable Unit	OU3	OU3	OU3	OU3	OU3	OU3	OU3	OU3	OU3
Sample date	11/12/2014	7/28/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015	11/12/2014	11/12/2014	7/28/2015
Habitat	Stream	Stream	Stream	Stream	Stream	Stream	Stream	Stream	Stream
Aluminum	23500	5040	36000	10200	13200	5110	1450	18000	5840
Antimony	**37.8**	**287**	24	**60.9**	**151**	**124**	**171**	**93.35**	**220**
Arsenic	**63.3**	**464**	**27.2**	**91**	**76.3**	**275**	**413**	**120**	**213**
Barium	181	384	514	79	176	112	144	203.5	195
Beryllium	0.01185 ND	0.0059 ND	0.003695 ND	0.003935 ND	0.0052 ND	0.0051 ND	0.003895 ND	0.0103 ND	0.00445 ND
Cadmium	**84.7**	**131**	13.4	57.7	26.3	55	**78.2**	34.35	64.7
Calcium	21400	35300	8170	40700	7350	10400	21200	52650	44500
Chromium	45.5	2.42 ND	66.5	35.4	21.8	2.09 ND	1.59 ND	22.6475	26.9
Cobalt	9.72	16.1	12.9	11.5	5.02	17.8	29.9	9.475	7
Copper	180	348	37	144	233	143	272	213	312
Iron	19200	25500	28200	39500	14100	34700	**105000**	21300	23600
Lead	**1070**	**7410**	47.3	**2580**	**3450**	**4440**	**6540**	**2415**	**6220**
Magnesium	9670	13600	7770	12600	5630	2430	9280	7550	11500
Manganese	385	**6710**	**2490**	1060	279	**3210**	1340	982.5	**2260**
Mercury	1.85	6.83	0.122	1.92	11.9	7.48	0.00189 ND	2.5125	5.07
Nickel	4.35 ND	2.175 ND	44.1	1.445 ND	1.91 ND	1.88 ND	1.43 ND	3.785 ND	1.635 ND
Potassium	5850	1440	7280	1900	3050	1130	651	5095	2250
Selenium	1.085 ND	0.545 ND	0.3385 ND	0.3605 ND	0.476 ND	0.4685 ND	62.8	0.945 ND	0.4075 ND
Silver	12.3	35.7	0.0139 ND	12.4	15.1	11.1	28.2	20.5	27
Sodium	876	269	881	415	504	244	5.05 ND	618	313
Thallium	0.01005 ND	0.00505 ND	0.003135 ND	0.00334 ND	0.004415 ND	0.004345 ND	0.003305 ND	0.00875 ND	0.003775 ND
Vanadium	52	6.41	57.9	20.1	23.7	7.76	18.7	44.85	6.37
Zinc	7460	**32800**	1650	10500	4470	12400	12000	5440	12400
Phosphate, Total (as P)	1300	1500	1480	1260	1170	841	1270	1230	2130
Percent Moisture (%)	75	47.1	25	20.8	41	41.4	23.4	72.5	36.3

Notes:
Samples were collected November 2014 by RMC and July 2015 by UPCM
All samples analyzed as bulk samples by laboratory
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sediment samples collected from surficial materials (upper 1 inch)
UCLM calculated using Excel confidence function (CONFIDENCE(alpha,standard_dev,size))

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram - dry
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3
RMC = Resource and Environmental Management Consultants, Inc.
SD = Sediment
UPCM = United Park City Mines

Table F-3b. Screening results for sediment samples compared with EPA industrial screening values

		Sample ID									
		Operable Unit									
		Sample date									
Resident Soil (mg/kg)		Habitat	N	count of NDs	# detected	Minimum	Maximum	Average	UCLM	Stdev	GeoMean
1100000	nm	Aluminum	14	0	100%	1450	36000	10621	1953	9.5E+03	7661
470	n	Antimony	14	0	100%	24.0	287	149	16.9	8.2E+01	122
3.0	cR	Arsenic	14	0	100%	27.2	464	206	30.0	1.5E+02	156
220000	nm	Barium	14	0	100%	60.1	514	185	26.1	1.3E+02	153
2300	n	Beryllium	14	14	0%	0.0037	0.012	0.0055	0.00051	2.5E-03	0.0051
980	n	Cadmium	14	0	100%	13.4	131	63.4	6.4	3.1E+01	55.2
--	--	Calcium	14	0	100%	7350	58050	31991	3443	1.7E+04	26679
1800000	nm	Chromium	14	4	71%	1.6	66.5	25.3	3.9	1.9E+01	14.8
350	n	Cobalt	14	0	100%	2.3	29.9	11.6	1.8	8.7E+00	8.9
47000	n	Copper	14	0	100%	37.00	428	232	22.9	1.1E+02	200
820000	nm	Iron	14	0	100%	10100	105000	27805	4873	2.4E+04	22870
800	L	Lead	14	0	100%	47.3	7715	4046	502	2.4E+03	2738
--	--	Magnesium	14	0	100%	2430	16050	9755	748	3.6E+03	8924
26000	n	Manganese	14	0	100%	279	6710	2253	399	1.9E+03	1614
350	n	Mercury	14	1	93%	0.0019	11.9	4.0	0.70	3.4E+00	1.7
22000	n	Nickel	14	13	7%	1.4	44.1	5.1	2.3	1.1E+01	2.4
--	--	Potassium	14	0	100%	651	7280	2606	418	2.0E+03	2036
5800	n	Selenium	14	13	7%	0.34	62.8	5.0	3.4	1.7E+01	0.68
5800	n	Silver	14	1	93%	0.014	35.7	19.8	2.1	1.0E+01	11.6
--	--	Sodium	14	1	93%	5.1	881	408	50.4	2.5E+02	289
12.0	n	Thallium	14	12	14%	0.0031	5.45	0.63	0.34	1.6E+00	0.012
5800	n	Vanadium	14	0	100%	5.5	57.9	21.6	3.7	1.8E+01	15.7
350000	nm	Zinc	14	0	100%	1650	32800	12436	1674	8.1E+03	9939
--	--	Phosphate, Total (as P)	14	0	100%	452	2130	1310	77.8	3.8E+02	1246
--	--	Percent Moisture (%)	14	0	100%	18.9	75.0	38.3	3.6	1.8E+01	35.0

Table F-3b. (cont.)

	OU2 Samples									
Sample ID	OU2-0-SD-BIRF		OU2-0-SD-IRF		OU2-0-SD-SCBNPRR		OU2-0-SD-SCI		OU2-0-SD-SCWWT	
							Dups ave		**Dups ave**	
Operable Unit	OU2		OU2		OU2		OU2		OU2	
Sample date	7/27/2015		7/27/2015		7/28/2015		7/27/2015		7/28/2015	
Habitat	Stream		Stream		Stream		Stream		Stream	
Aluminum	5770		3010		10200		7120		4250	
Antimony	251		128		108		249		187.5	
Arsenic	**254**		**103**		**142**		**194**		**442**	
Barium	64.4		118		246		60.05		110.25	
Beryllium	0.003975	ND	0.00565	ND	0.004395	ND	0.0044125	ND	0.0037425	ND
Cadmium	67.9		34.2		59.4		95.4		85	
Calcium	41000		29300		27800		50050		58050	
Chromium	34.8		2.31	ND	27.7		39.05		25.3	
Cobalt	2.32		6.21		27.8		4.765		2.535	
Copper	317		133		125		358.5		427.5	
Iron	12200		10100		23200		17250		15420	
Lead	**4670**		**1840**		**2330**		**5920**		**7715**	
Magnesium	10500		5820		12000		12170		16050	
Manganese	1370		1430		6160		2135		1735	
Mercury	7.82		2.02		3.69		3.405		1.845	
Nickel	1.46	ND	2.08	ND	1.615	ND	1.6225	ND	1.375	ND
Potassium	1590		984		1160		2645		1465	
Selenium	0.364	ND	0.52	ND	0.4025	ND	0.40425	ND	0.34275	ND
Silver	22.7		9.68		19.4		33.7		29.4	
Sodium	362		340		403		281.75		196.5	
Thallium	0.00337	ND	0.004805	ND	0.00373	ND	5.451945		3.3115625	
Vanadium	10.7		7.08		29.5		11.5		5.52	
Zinc	19000		6430		10300		21000		18250	
Phosphate, Total (as P)	1390		452		1270		1665		1380	
Percent Moisture (%)	22.1		45		32.7		35.1		18.85	

Table F-3b. (cont.)

	OU3 Samples																	
Sample ID	OU3-0-SD-MRUBP		OU3-0-SD-NPCWR		OU3-0-SD-SC1C		OU3-0-SD-SC248AC		OU3-0-SD-SC248NRB		OU3-0-SD-SCRF72		OU3-0-SD-SCRFR		OU3-0-SD-SCURTFB		OU3-0-SD-SPCWR	
															Dups ave			
Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Sample date	11/12/2014		7/28/2015		7/28/2015		7/28/2015		7/28/2015		7/28/2015		11/12/2014		11/12/2014		7/28/2015	
Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
Aluminum	23500		5040		36000		10200		13200		5110		1450		18000		5840	
Antimony	37.8		287		24		60.9		151		124		171		93.35		220	
Arsenic	**63.3**		**464**		**27.2**		**91**		**76.3**		**275**		**413**		**120**		**213**	
Barium	181		384		514		79		176		112		144		203.5		195	
Beryllium	0.01185	ND	0.0059	ND	0.003695	ND	0.003935	ND	0.0052	ND	0.0051	ND	0.003895	ND	0.0103	ND	0.00445	ND
Cadmium	84.7		131		13.4		57.7		26.3		55		78.2		34.35		64.7	
Calcium	21400		35300		8170		40700		7350		10400		21200		52650		44500	
Chromium	45.5		2.42	ND	66.5		35.4		21.8		2.09	ND	1.59	ND	22.6475		26.9	
Cobalt	9.72		16.1		12.9		11.5		5.02		17.8		29.9		9.475		7	
Copper	180		348		37		144		233		143		272		213		312	
Iron	19200		25500		28200		39500		14100		34700		105000		21300		23600	
Lead	**1070**		**7410**		47.3		**2580**		**3450**		**4440**		**6540**		**2415**		**6220**	
Magnesium	9670		13600		7770		12600		5630		2430		9280		7550		11500	
Manganese	385		6710		2490		1060		279		3210		1340		982.5		2260	
Mercury	1.85		6.83		0.122		1.92		11.9		7.48		0.00189	ND	2.5125		5.07	
Nickel	4.35	ND	2.175	ND	44.1		1.445	ND	1.91	ND	1.88	ND	1.43	ND	3.785	ND	1.635	ND
Potassium	5850		1440		7280		1900		3050		1130		651		5095		2250	
Selenium	1.085	ND	0.545	ND	0.3385	ND	0.3605	ND	0.476	ND	0.4685	ND	62.8		0.945	ND	0.4075	ND
Silver	12.3		35.7		0.0139	ND	12.4		15.1		11.1		28.2		20.5		27	
Sodium	876		269		881		415		504		244		5.05	ND	618		313	
Thallium	0.01005	ND	0.00505	ND	0.003135	ND	0.00334	ND	0.004415	ND	0.004345	ND	0.003305	ND	0.00875	ND	0.003775	ND
Vanadium	52		6.41		57.9		20.1		23.7		7.76		18.7		44.85		6.37	
Zinc	7460		32800		1650		10500		4470		12400		12000		5440		12400	
Phosphate, Total (as P)	1300		1500		1480		1260		1170		841		1270		1230		2130	
Percent Moisture (%)	75		47.1		25		20.8		41		41.4		23.4		72.5		36.3	

Notes:
Samples were collected November 2014 by RMC and July 2015 by UPCM
All samples analyzed as bulk samples by laboratory
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sediment samples collected from surficial materials (upper 1 inch)
UCLM calculated using Excel confidence function (CONFIDENCE(alpha,standard_dev,size))

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram - dry
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3
RMC = Resource and Environmental Management Consultants, Inc.
SD = Sediment
UPCM = United Park City Mines

Table F-3c. Screening results for sediment samples compared with EPA Protection of Groundwater SSLs

Protection of Groundwater SSLs (mg/kg)		Sample ID Operable Unit Sample date Habitat	N	count of NDs	# detected	Minimum	Maximum	Average	UCLM	Stdev	GeoMean
30000	n	Aluminum	14	0	100%	1450	36000	10621	1953	9.5E+03	7661
0.35	n	Antimony	14	0	100%	24.0	287	149	16.9	8.2E+01	122
0.0015	c	Arsenic	14	0	100%	27.2	464	206	30.0	1.5E+02	156
160	n	Barium	14	0	100%	60.1	514	185	26.1	1.3E+02	153
19.0	n	Beryllium	14	14	0%	0.0037	0.012	0.0055	0.00051	2.5E-03	0.0051
		Cadmium	14	0	100%	13.4	131	63.4	6.4	3.1E+01	55.2
--	--	Calcium	14	0	100%	7350	58050	31991	3443	1.7E+04	26679
40000000	n	Chromium	14	4	71%	1.6	66.5	25.3	3.9	1.9E+01	14.8
0.27	n	Cobalt	14	0	100%	2.3	29.9	11.6	1.8	8.7E+00	8.9
28	n	Copper	14	0	100%	37.00	428	232	22.9	1.1E+02	200
350	n	Iron	14	0	100%	10100	105000	27805	4873	2.4E+04	22870
--	--	Lead	14	0	100%	47.3	7715	4046	502	2.4E+03	2738
--	--	Magnesium	14	0	100%	2430	16050	9755	748	3.6E+03	8924
28.0	n	Manganese	14	0	100%	279	6710	2253	399	1.9E+03	1614
--	--	Mercury	14	1	93%	0.0019	11.9	4.0	0.70	3.4E+00	1.7
26.0	n	Nickel	14	13	7%	1.4	44.1	5.1	2.3	1.1E+01	2.4
--	--	Potassium	14	0	100%	651	7280	2606	418	2.0E+03	2036
0.52	n	Selenium	14	13	7%	0.34	62.8	5.0	3.4	1.7E+01	0.68
0.80	n	Silver	14	1	93%	0.014	35.7	19.8	2.1	1.0E+01	11.6
--	--	Sodium	14	1	93%	5.1	881	408	50.4	2.5E+02	289
0.014	n	Thallium	14	12	14%	0.0031	5.45	0.63	0.34	1.6E+00	0.012
86.0	n	Vanadium	14	0	100%	5.5	57.9	21.6	3.7	1.8E+01	15.7
370	n	Zinc	14	0	100%	1650	32800	12436	1674	8.1E+03	9939
--	--	Phosphate, Total (as P)	14	0	100%	452	2130	1310	77.8	3.8E+02	1246
--	--	Percent Moisture (%)	14	0	100%	18.9	75.0	38.3	3.6	1.8E+01	35.0

Table F-3c. (cont.)

	OU2 Samples									
Sample ID	OU2-0-SD-BIRF		OU2-0-SD-IRF		OU2-0-SD-SCBNPRR		OU2-0-SD-SCI		OU2-0-SD-SCWWT	
							Dups ave		**Dups ave**	
Operable Unit	OU2		OU2		OU2		OU2		OU2	
Sample date	7/27/2015		7/27/2015		7/28/2015		7/27/2015		7/28/2015	
Habitat	Stream		Stream		Stream		Stream		Stream	
Aluminum	5770		3010		10200		7120		4250	
Antimony	**251**		**128**		**108**		**249**		**187.5**	
Arsenic	**254**		**103**		**142**		**194**		**442**	
Barium	64.4		118		246		60.05		110.25	
Beryllium	0.003975	ND	0.00565	ND	0.004395	ND	0.0044125	ND	0.0037425	ND
Cadmium	67.9		34.2		59.4		95.4		85	
Calcium	41000		29300		27800		50050		58050	
Chromium	34.8		2.31	ND	27.7		39.05		25.3	
Cobalt	2.32		6.21		27.8		4.765		2.535	
Copper	**317**		**133**		**125**		**358.5**		**427.5**	
Iron	**12200**		**10100**		**23200**		**17250**		**15420**	
Lead	4670		1840		2330		5920		7715	
Magnesium	10500		5820		12000		12170		16050	
Manganese	**1370**		**1430**		**6160**		**2135**		**1735**	
Mercury	7.82		2.02		3.69		3.405		1.845	
Nickel	1.46	ND	2.08	ND	1.615	ND	1.6225	ND	1.375	ND
Potassium	1590		984		1160		2645		1465	
Selenium	0.364	ND	0.52	ND	0.4025	ND	0.40425	ND	0.34275	ND
Silver	**22.7**		**9.68**		**19.4**		**33.7**		**29.4**	
Sodium	362		340		403		281.75		196.5	
Thallium	0.00337	ND	0.004805	ND	0.00373	ND	5.451945		3.3115625	
Vanadium	10.7		7.08		29.5		11.5		5.52	
Zinc	**19000**		**6430**		**10300**		**21000**		**18250**	
Phosphate, Total (as P)	1390		452		1270		1665		1380	
Percent Moisture (%)	22.1		45		32.7		35.1		18.85	

Table F-3c. (cont.)

	OU3 Samples																	
Sample ID	OU3-0-SD-MRUBP		OU3-0-SD-NPCWR		OU3-0-SD-SC1C		OU3-0-SD-SC248AC		OU3-0-SD-SC248NRB		OU3-0-SD-SCRF72		OU3-0-SD-SCRFR		OU3-0-SD-SCURTFB		OU3-0-SD-SPCWR	
															Dups ave			
Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Sample date	11/12/2014		7/28/2015		7/28/2015		7/28/2015		7/28/2015		7/28/2015		11/12/2014		11/12/2014		7/28/2015	
Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
Aluminum	23500		5040		**36000**		10200		13200		5110		1450		18000		5840	
Antimony	**37.8**		**287**		**24**		**60.9**		**151**		**124**		**171**		**93.35**		**220**	
Arsenic	**63.3**		**464**		**27.2**		**91**		**76.3**		**275**		**413**		**120**		**213**	
Barium	181		384		514		79		176		112		144		203.5		195	
Beryllium	0.01185	ND	0.0059	ND	0.003695	ND	0.003935	ND	0.0052	ND	0.0051	ND	0.003895	ND	0.0103	ND	0.00445	ND
Cadmium	84.7		131		13.4		57.7		26.3		55		78.2		34.35		64.7	
Calcium	21400		35300		8170		40700		7350		10400		21200		52650		44500	
Chromium	45.5		2.42	ND	66.5		35.4		21.8		2.09	ND	1.59	ND	22.6475		26.9	
Cobalt	9.72		16.1		12.9		11.5		5.02		17.8		29.9		9.475		7	
Copper	**180**		**348**		**37**		**144**		**233**		**143**		**272**		**213**		**312**	
Iron	**19200**		**25500**		**28200**		**39500**		**14100**		**34700**		**105000**		**21300**		**23600**	
Lead	1070		7410		47.3		2580		3450		4440		6540		2415		6220	
Magnesium	9670		13600		7770		12600		5630		2430		9280		7550		11500	
Manganese	**385**		**6710**		**2490**		**1060**		**279**		**3210**		**1340**		**982.5**		**2260**	
Mercury	1.85		6.83		0.122		1.92		11.9		7.48		0.00189	ND	2.5125		5.07	
Nickel	4.35	ND	2.175	ND	**44.1**		1.445	ND	1.91	ND	1.88	ND	1.43	ND	3.785	ND	1.635	ND
Potassium	5850		1440		7280		1900		3050		1130		651		5095		2250	
Selenium	1.085	ND	0.545	ND	0.3385	ND	0.3605	ND	0.476	ND	0.4685	ND	62.8		0.945	ND	0.4075	ND
Silver	**12.3**		**35.7**		0.0139	ND	**12.4**		**15.1**		**11.1**		**28.2**		**20.5**		**27**	
Sodium	876		269		881		415		504		244		5.05	ND	618		313	
Thallium	0.01005	ND	0.00505	ND	0.003135	ND	0.00334	ND	0.004415	ND	0.004345	ND	0.003305	ND	0.00875	ND	0.003775	ND
Vanadium	52		6.41		57.9		20.1		23.7		7.76		18.7		44.85		6.37	
Zinc	**7460**		**32800**		**1650**		**10500**		**4470**		**12400**		**12000**		**5440**		**12400**	
Phosphate, Total (as P)	1300		1500		1480		1260		1170		841		1270		1230		2130	
Percent Moisture (%)	75		47.1		25		20.8		41		41.4		23.4		72.5		36.3	

Notes:
Samples were collected November 2014 by RMC and July 2015 by UPCM
All samples analyzed as bulk samples by laboratory
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sediment samples collected from surficial materials (upper 1 inch)
UCLM calculated using Excel confidence function (CONFIDENCE(alpha,standard_dev,size))

Key:
-- = no EPA risk-based SSL available
ID = Identification
mg/kg = milligrams per kilogram - dry
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3
RMC = Resource and Environmental Management Consultants, Inc.
SD = Sediment
UPCM = United Park City Mines

Table F-3d. Screening results for sediment samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBCs for sediment

RF BHHRA (Table 3-6) calculated RBC for sediment (mg/kg)	Sample ID Operable Unit Sample date Habitat	N	count of NDs	# detected	Minimum	Maximum	Average	UCLM	Stdev	GeoMean
3832463	Aluminum	14	0	100%	1450	36000	10621	1953	9.5E+03	7661
1533	Antimony	14	0	100%	24.0	287	149	16.9	8.2E+01	122
75	Arsenic	14	0	100%	27.2	464	206	30.0	1.5E+02	156
268275	Barium	14	0	100%	60.1	514	185	26.1	1.3E+02	153
7665	Beryllium	14	14	0%	0.0037	0.012	0.0055	0.00051	2.5E-03	0.0051
3832	Cadmium	14	0	100%	13.4	131	63.4	6.4	3.1E+01	55.2
--	Calcium	14	0	100%	7350	58050	31991	3443	1.7E+04	26679
--	Chromium	14	4	71%	1.6	66.5	25.3	3.9	1.9E+01	14.8
--	Cobalt	14	0	100%	2.3	29.9	11.6	1.8	8.7E+00	8.9
--	Copper	14	0	100%	37.00	428	232	22.9	1.1E+02	200
--	Iron	14	0	100%	10100	105000	27805	4873	2.4E+04	22870
4,446	Lead	14	0	100%	47.3	7715	4046	502	2.4E+03	2738
--	Magnesium	14	0	100%	2430	16050	9755	748	3.6E+03	8924
536550	Manganese	14	0	100%	279	6710	2253	399	1.9E+03	1614
1150	Mercury	14	1	93%	0.0019	11.9	4.0	0.70	3.4E+00	1.7
76650	Nickel	14	13	7%	1.4	44.1	5.1	2.3	1.1E+01	2.4
--	Potassium	14	0	100%	651	7280	2606	418	2.0E+03	2036
--	Selenium	14	13	7%	0.34	62.8	5.0	3.4	1.7E+01	0.68
19163	Silver	14	1	93%	0.014	35.7	19.8	2.1	1.0E+01	11.6
--	Sodium	14	1	93%	5.1	881	408	50.4	2.5E+02	289
307	Thallium	14	12	14%	0.0031	5.45	0.63	0.34	1.6E+00	0.012
34493	Vanadium	14	0	100%	5.5	57.9	21.6	3.7	1.8E+01	15.7
--	Zinc	14	0	100%	1650	32800	12436	1674	8.1E+03	9939
--	Phosphate, Total (as P)	14	0	100%	452	2130	1310	77.8	3.8E+02	1246
--	Percent Moisture (%)	14	0	100%	18.9	75.0	38.3	3.6	1.8E+01	35.0

Table F-3d. (cont.)

	OU2 Samples									
Sample ID	OU2-0-SD-BIRF		OU2-0-SD-IRF		OU2-0-SD-SCBNPRR		OU2-0-SD-SCI		OU2-0-SD-SCWWT	
							Dups ave		**Dups ave**	
Operable Unit	OU2		OU2		OU2		OU2		OU2	
Sample date	7/27/2015		7/27/2015		7/28/2015		7/27/2015		7/28/2015	
Habitat	Stream		Stream		Stream		Stream		Stream	
Aluminum	5770		3010		10200		7120		4250	
Antimony	251		128		108		249		187.5	
Arsenic	**254**		**103**		**142**		**194**		**442**	
Barium	64.4		118		246		60.1		110.3	
Beryllium	0.003975	ND	0.00565	ND	0.004395	ND	0.0044	ND	0.0037	ND
Cadmium	67.9		34.2		59.4		95.4		85	
Calcium	41000		29300		27800		50050		58050	
Chromium	34.8		2.31	ND	27.7		39.1		25.3	
Cobalt	2.32		6.21		27.8		4.8		2.5	
Copper	317		133		125		358.5		427.5	
Iron	12200		10100		23200		17250		15420	
Lead	4670		1840		2330		5920		7715	
Magnesium	10500		5820		12000		12170		16050	
Manganese	1370		1430		6160		2135		1735	
Mercury	7.82		2.02		3.69		3.4		1.8	
Nickel	1.46	ND	2.08	ND	1.615	ND	1.6	ND	1.4	ND
Potassium	1590		984		1160		2645		1465	
Selenium	0.364	ND	0.52	ND	0.4025	ND	0.40	ND	0.34	ND
Silver	22.7		9.68		19.4		33.7		29.4	
Sodium	362		340		403		281.8		196.5	
Thallium	0.00337	ND	0.004805	ND	0.00373	ND	5.5		3.3	
Vanadium	10.7		7.08		29.5		11.5		5.5	
Zinc	19000		6430		10300		21000		18250	
Phosphate, Total (as P)	1390		452		1270		1665		1380	
Percent Moisture (%)	22.1		45		32.7		35.1		18.9	

Table F-3d. (cont.)

	OU3 Samples																	
Sample ID	OU3-0-SD-MRUBP		OU3-0-SD-NPCWR		OU3-0-SD-SC1C		OU3-0-SD-SC248AC		OU3-0-SD-SC248NRB		OU3-0-SD-SCRF72		OU3-0-SD-SCRFR		OU3-0-SD-SCURTFB		OU3-0-SD-SPCWR	
															Dups ave			
Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Sample date	11/12/2014		7/28/2015		7/28/2015		7/28/2015		7/28/2015		7/28/2015		11/12/2014		11/12/2014		7/28/2015	
Habitat	Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream		Stream	
Aluminum	23500		5040		36000		10200		13200		5110		1450		18000		5840	
Antimony	37.8		287		24		60.9		151		124		171		93.35		220	
Arsenic	63.3		**464**		27.2		**91**		**76.3**		**275**		**413**		**120**		**213**	
Barium	181		384		514		79		176		112		144		203.5		195	
Beryllium	0.01185	ND	0.0059	ND	0.003695	ND	0.003935	ND	0.0052	ND	0.0051	ND	0.003895	ND	0.0103	ND	0.00445	ND
Cadmium	84.7		131		13.4		57.7		26.3		55		78.2		34.35		64.7	
Calcium	21400		35300		8170		40700		7350		10400		21200		52650		44500	
Chromium	45.5		2.42	ND	66.5		35.4		21.8		2.09	ND	1.59	ND	22.6475		26.9	
Cobalt	9.72		16.1		12.9		11.5		5.02		17.8		29.9		9.475		7	
Copper	180		348		37		144		233		143		272		213		312	
Iron	19200		25500		28200		39500		14100		34700		105000		21300		23600	
Lead	1070		7410		47.3		2580		3450		4440		6540		2415		6220	
Magnesium	9670		13600		7770		12600		5630		2430		9280		7550		11500	
Manganese	385		6710		2490		1060		279		3210		1340		982.5		2260	
Mercury	1.85		6.83		0.122		1.92		11.9		7.48		0.00189	ND	2.5125		5.07	
Nickel	4.35	ND	2.175	ND	44.1		1.445	ND	1.91	ND	1.88	ND	1.43	ND	3.785	ND	1.635	ND
Potassium	5850		1440		7280		1900		3050		1130		651		5095		2250	
Selenium	1.085	ND	0.545	ND	0.3385	ND	0.3605	ND	0.476	ND	0.4685	ND	62.8		0.945	ND	0.4075	ND
Silver	12.3		35.7		0.0139	ND	12.4		15.1		11.1		28.2		20.5		27	
Sodium	876		269		881		415		504		244		5.05	ND	618		313	
Thallium	0.01005	ND	0.00505	ND	0.003135	ND	0.00334	ND	0.004415	ND	0.004345	ND	0.003305	ND	0.00875	ND	0.003775	ND
Vanadium	52		6.41		57.9		20.1		23.7		7.76		18.7		44.85		6.37	
Zinc	7460		32800		1650		10500		4470		12400		12000		5440		12400	
Phosphate, Total (as P)	1300		1500		1480		1260		1170		841		1270		1230		2130	
Percent Moisture (%)	75		47.1		25		20.8		41		41.4		23.4		72.5		36.3	

Notes:
Samples were collected November 2014 by RMC and July 2015 by UPCM
All samples analyzed as bulk samples by laboratory
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sediment samples collected from surficial materials (upper 1 inch)
UCLM calculated using Excel confidence function (CONFIDENCE(alpha,standard_dev,size))

Key:
-- = no Richardson Flats RBC available
ID = Identification
mg/kg = milligrams per kilogram - dry
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
OU3 = Richardson Flat Tailings Site Operable Unit 3
RMC = Resource and Environmental Management Consultants, Inc.
SD = Sediment
UPCM = United Park City Mines

Table F-4. Summary statistics for all soil samples

	N	count of NDs	% detected	Minimum	Maximum	Average	UCLM	Stdev	GeoMean
Aluminum	235	0	100%	2.1	52200	21267	2567	1.2E+04	13368
Antimony	235	11	95%	0.14	5490	245	116.4	5.7E+02	40.1
Arsenic	235	0	100%	0.072	7010	229	121	5.9E+02	60.9
Barium	235	0	100%	2.4	871	252	27.7	1.3E+02	209
Beryllium	235	153	35%	0.0022	2.3	0.017	0.037	1.8E-01	0.0031
Cadmium	235	1	100%	0.0113	293	38.4	10.1	4.9E+01	11.4
Calcium	235	0	100%	5.4	176000	25231	5812	2.8E+04	12885
Chromium	235	4	98%	1.0	143	39.5	4.4	2.1E+01	32.1
Cobalt	235	0	100%	0.135	52.4	9.6	1.2	5.8E+00	7.6
Copper	235	1	100%	1.025	3140	336	106	5.1E+02	126.5
Iron	235	0	100%	4.1	130000	25344	3033	1.5E+04	17546
Lead	235	1	100%	2.7	40700	4318	1447	7.0E+03	1040
Magnesium	235	0	100%	2.5	36300	8694	1251	6.1E+03	6369
Manganese	235	0	100%	6.7	15800	1619	386	1.9E+03	1043
Mercury	235	4	98%	0.00075	2950	29.2	48.2	2.3E+02	1.3
Nickel	235	96	59%	0.81	40.4	9.2	2.2	1.1E+01	3.4
Potassium	235	0	100%	0.88	16800	5437	646	3.1E+03	3985
Selenium	235	118	50%	0.21	30.9	3.3	1.2	6.1E+00	0.67
Silver	235	35	85%	0.0085	236	25.0	8.4	4.1E+01	2.6
Sodium	235	0	100%	0.022	5960	580	140	6.8E+02	375
Thallium	235	105	55%	0.0019	48.1	3.9	1.7	8.4E+00	0.034
Vanadium	235	3	99%	0.0028	122	39.6	5.0	2.4E+01	23.2
Zinc	235	0	100%	1.91	65600	7652	2258	1.1E+04	1932
Phosphate, Total (as P)	235	0	100%	10.3	68400	1837	1085	5.3E+03	1144

Notes:

UCLM calculated using Excel confidence function (CONFIDENCE(alpha,standard_dev,size))

Table F-4a(1). Screening results for OU2 Floodplain soil samples compared with EPA residential soil screening values

		Sample ID				OU2-0-SO-10L-0		OU2-0-SO-12I-0		OU2-0-SO-12L-0		OU2-0-SO-15L-0		OU2-0-SO-15N-0		OU2-0-SO-17L-0		OU2-0-SO-17N-0
		Depth				0		0		0		0		0		0		0
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2		OU2
Residential Soil		Sample date				9/21/2015		9/17/2015		9/21/2015		9/17/2015		9/16/2015		9/17/2015		9/16/2015
(mg/kg)		Habitat	**N**	**count of NDs**	**% detected**	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain
77000	n	Aluminum	33	0	100%	27400		18200		7900		3350		6830		30200		3580
31	n	Antimony	33	1	97%	16.7		**1550**		**874**		**847**		**304**		11.4		**413**
1	c*R	Arsenic	33	0	100%	**10.5**		**1350**		**649**		**757**		**258**		**23.8**		**406**
15000	n	Barium	33	0	100%	195		227		185		63.8		236		319		99.4
160	n	Beryllium	33	33	0%	0.00302	ND	0.00249	ND	0.00264	ND	0.00437	ND	0.002865	ND	0.002705	ND	0.0026
71	n	Cadmium	33	0	100%	15.7		**206**		**79.6**		**175**		37.4		4.08		69
--		Calcium	33	0	100%	6830		39100		25000		74700		42000		7300		43500
120000	nm	Chromium	33	2	94%	34.1		123		30		1.785	ND	34.5		39.3		17.7
23	n	Cobalt	33	0	100%	5.77		3.97		2.69		7.29		6.91		11.8		2.2
3100	n	Copper	33	0	100%	34.9		2450		1670		252		385		46.2		579
55000	n	Iron	33	0	100%	20500		24000		15300		11200		31600		34800		11100
400	L	Lead	33	1	97%	15.2	ND	**34400**		**16900**		**1830**		**7680**		272		**7900**
--		Magnesium	33	0	100%	6220		17700		8680		3610		14300		6140		12000
1800	n	Manganese	33	0	100%	183		**3650**		1730		350		1670		1070		**2100**
23	n	Mercury	33	0	100%	0.202		**31.3**		**26**		1.88		9.38		0.424		8.23
1500	n	Nickel	33	27	18%	1.11	ND	0.915	ND	0.97	ND	1.605	ND	1.05	ND	18.6		0.955
--		Potassium	33	0	100%	7520		6500		2350		942		2280		6150		1270
390	n	Selenium	33	19	42%	0.2765	ND	20.5		10.2		0.4	ND	10.8		0.248	ND	0.238
390	n	Silver	33	5	85%	0.01135	ND	236		120		7.02		41.3		1.6		55.2
--		Sodium	33	0	100%	1020		473		399		1350		285		944		162
1	n	Thallium	33	14	58%	0.00256	ND	**11.9**		0.00224	ND	**24.9**		**3.98**		0.002295	ND	**5.33**
390	n	Vanadium	33	1	97%	40.3		41.8		18.9		5.9		18.8		40.6		11.4
23000	n	Zinc	33	0	100%	1370		**31300**		20300		**65600**		11100		427		17200
--		Phosphate, Total (as P)	33	0	100%	905		3710		1460		419		2050		863		1660

Table F-4a(1). (cont.)

		Sample ID		OU2-0-SO-26V-0		OU2-0-SO-30R-0		OU2-0-SO-30Y-0		OU2-0-SO-34G-0		OU2-0-SO-35V-0		OU2-0-SO-37V-0		OU2-0-SO-39V-0		OU2-0-SO-43T-0		OU2-0-SO-44T-0
		Depth		0		0		0		0		0		0		0		0		0
		Operable Unit		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2
Residential Soil		Sample date		9/16/2015		9/15/2015		9/16/2015		8/5/2015		8/5/2015		8/5/2015		8/4/2015		8/4/2015		9/14/2015
(mg/kg)		Habitat		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain
77000	n	Aluminum		3370		5600		4610		7530		12000		20000		12800		2940		6960
31	n	Antimony		**132**		**489**		**234**		**63**		**45.2**		24.8		**320**		3.78		**353**
1	c*R	Arsenic		**217**		**335**		**335**		**110**		**206**		**48.7**		**306**		**4.23**		**413**
15000	n	Barium		161		119		184		159		196		269		336		77.7		248
160	n	Beryllium	ND	0.00264	ND	0.00246	ND	0.002595	ND	0.00263	ND	0.00344	ND	0.0025	ND	0.00244	ND	0.002495	ND	0
71	n	Cadmium		27.3		54		**93.1**		63.6		17.5		5.52		55.3		3		**127**
--		Calcium		38100		27500		57000		41400		24200		27800		15000		117000		48800
120000	nm	Chromium		20.6		26		25.9		10.9		15		24		22.5		1.02	ND	28
23	n	Cobalt		2.5		2.2		8.04		12.2		14.5		8.61		**27.9**		1.88		9
3100	n	Copper		125		873		337		126		89.7		76.7		411		31.5		806
55000	n	Iron		16100		10400		46500		11900		26100		20100		20900		3340		39300
400	L	Lead		**2810**		**13900**		**6410**		**605**		**1110**		**616**		**9200**		51.6		**10600**
--		Magnesium		14900		7660		18500		3480		4670		6790		4000		4650		13300
1800	n	Manganese		1700		1420		**2460**		1770		**2420**		266		**3850**		**2820**		**2050**
23	n	Mercury		1.65		17.7		4.82		0.642		4.79		1.8		**23.9**		0.298		14
1500	n	Nickel	ND	0.97	ND	0.905	ND	0.955	ND	0.965	ND	1.265	ND	0.92	ND	0.895	ND	0.915	ND	1
--		Potassium		1440		1560		2070		1900		2910		5070		3630		1540		2240
390	n	Selenium	ND	0.2415	ND	0.2255	ND	15.1		0.2405	ND	0.315	ND	0.229	ND	8.57		0.2285	ND	10
390	n	Silver		17		60.6		34.2		5.58		3.92		3.48		24.7		0.0094	ND	50
--		Sodium		127		280		278		202		783		587		278		788		400
1	n	Thallium		0.00224	ND	**3.33**		**3.96**		**7.29**		0.00292	ND	0.002125	ND	0.00207	ND	0.002115	ND	**7**
390	n	Vanadium		10.4		11.6		15.2		14.1		17.4		31.8		25.8		5.56		9
23000	n	Zinc		4430		17200		15400		7970		2680		995		6590		289		**31800**
--		Phosphate, Total (as P)		1480		1390		1330		1040		913		721		1320		844		1740

Table F-4a(1). (cont.)

Residential Soil (mg/kg)		Sample ID		OU2-0-SO-44V-0		OU2-0-SO-44W-0		OU2-0-SO-45T-0		OU2-0-SO-45V-0		OU2-0-SO-46V-0		OU2-0-SO-47T-0		OU2-0-SO-48S-0		OU2-0-SO-48T-0		OU2-0-SO-4A-0
		Depth		0		0		0		0		0		0		0		0		0
		Operable Unit		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2
		Sample date		7/31/2015		7/31/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		9/24/2015
		Habitat		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain
77000	n	Aluminum		20500		10200		11300		6470		5310		9190		7330		6640		31200
31	n	Antimony		**570**		**344**		**513**		**224**		**332**		**269**		**267**		**5490**		12.4
1	c*R	Arsenic		**550**		**442**		**589**		**241**		**743**		**360**		**314**		**7010**		**22.2**
15000	n	Barium		298		224		330		171		160		212		196		575		458
160	n	Beryllium	ND	0.003105	ND	0.00328	ND	0.0022	ND	0.002365	ND	0	ND	0	ND	0.00284	ND	0.00358	ND	0.00294
71	n	Cadmium		**86.5**		**180**		**105**		65.4		62		**118**		**101**		66.1		3.68
--		Calcium		41800		44700		69600		50200		40400		25600		52900		14900		6170
120000	nm	Chromium		65.4		30.3		49.5		33.3		26		29		27.5		20		37.7
23	n	Cobalt		13.5		21.4		13.5		4.99		7		9		9.9		11.3		11.5
3100	n	Copper		1080		650		845		437		278		494		387		396		48.1
55000	n	Iron		33700		25800		37500		21300		27500		22700		28800		**130000**		26700
400	L	Lead		**9720**		**4800**		**11400**		**5490**		**4220**		**5600**		**5920**		**3810**		271
--		Magnesium		14600		10300		15800		16200		13900		7060		13700		3440		5670
1800	n	Manganese		**2750**		**3200**		**2280**		**2310**		**2300**		1010		**1950**		1680		1070
23	n	Mercury		**26.5**		9.27		10.8		3.27		3		13		3.61		1.57		0.643
1500	n	Nickel	ND	22.6		23.5		0.81	ND	0.87	ND	1	ND	2	ND	1.04	ND	1.315	ND	20.1
--		Potassium		6030		3250		4330		2830		2210		2410		2740		2310		7710
390	n	Selenium		14.3		0.3005	ND	15.6		8.2		8		20		9.49		0.3275	ND	0.2695
390	n	Silver		72.3		41.3		81.3		26.8		22		27		28.2		21.1		1.63
--		Sodium		387		3430		204		115		119		391		376		335		487
1	n	Thallium		**21.6**		**45.7**		**14.1**		**5.9**		**4**		**23**		**10.3**		**35.4**		0.002495
390	n	Vanadium		30.7		14.5		14.3		8.5		3		13		9.21		0.0825	ND	57
23000	n	Zinc		**26600**		**29800**		18000		14600		13200		19400		**27900**		22200		515
--		Phosphate, Total (as P)		2550		261		1490		1060		1670		3480		1240		519		1020

Table F-4a(1). (cont.)

Residential Soil (mg/kg)		Sample ID		OU2-0-SO-50P-0		OU2-0-SO-50Q-0		OU2-0-SO-50T-0		OU2-0-SO-7F-0		OU2-0-SO-8G-0		OU2-0-SO-8I-0		OU2-0-SO-OP1-0		OU2-0-SO-OP2-0	
		Depth		0		0		0		0		0		0		0		0	
				Dups ave															
		Operable Unit		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date		7/29/2015		7/29/2015		7/30/2015		9/17/2015		9/17/2015		9/21/2015		7/29/2015		9/17/2015	
		Habitat		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
77000	n	Aluminum		30600		7320		35800		8860		9090		5200		11200		27200	
31	n	Antimony		6.6		**276**		0.1895	ND	**826**		**1270**		**257**		**244**		8.27	
1	c*R	Arsenic		**11.9**		**247**		**11.3**		**1020**		**1060**		**292**		**268**		**16.8**	
15000	n	Barium		312		166		262		158		174		57.4		269		450	
160	n	Beryllium	ND	0.0030675	ND	0.00306	ND	0.0031	ND	0.002665	ND	0.002455	ND	0.002505	ND	0.00329	ND	0.002765	ND
71	n	Cadmium		2.395		44.8		1.3		**160**		**119**		44.8		42.2		2	
--		Calcium		7775		50200		6300		41900		30800		42900		17300		8500	
120000	nm	Chromium		34.4		28.1		40.4		50.2		40.5		28.4		23.5		31.4	
23	n	Cobalt		10.8		5.92		11.4		3.41		6.23		2.42		3.57		11.4	
3100	n	Copper		40.8		352		22.8		1010		2040		358		550		58.1	
55000	n	Iron		26200		17900		27300		19600		23300		11200		19200		25100	
400	L	Lead		160.5		**4730**		75.1		**27400**		**28900**		**6260**		**9960**		176	
--		Magnesium		6410		11900		6910		14200		9460		12200		5970		6390	
1800	n	Manganese		765.5		1730		667		**2740**		**4220**		**2110**		832		641	
23	n	Mercury		0.228		10.7		0.0463		16.3		**79.1**		5.64		7.22		0.372	
1500	n	Nickel		1.1275	ND	1.125	ND	20.9		0.98	ND	0.9	ND	0.92	ND	24.4		1.015	ND
--		Potassium		6555		2430		6480		3590		2540		1820		3250		6060	
390	n	Selenium	ND	0.281	ND	0.2805	ND	0.284	ND	9.53		10.8		0.2295	ND	0.301	ND	0.253	ND
390	n	Silver		0.01155	ND	33.8		0.0117	ND	169		145		32.2		35.8		0.0104	ND
--		Sodium		710.5		242		520		327		491		176		578		794	
1	n	Thallium	ND	0.002605	ND	**4.6**		0.00263	ND	**6.25**		**3.34**		0.002125	ND	0.00279	ND	0.002345	ND
390	n	Vanadium		50.3		12.1		60		21.6		24.2		11		122		39.6	
23000	n	Zinc		274		10400		122		**27900**		**29700**		12100		8250		272	
--		Phosphate, Total (as P)		1450		1360		1450		5180		1660		1430		1580		883	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
SO = Soil

Table F-4a(2). Screening results for OU2 Upland soil samples compared with EPA residential soil screening values

		Sample ID				OU2-0-SO-21D-0		OU2-0-SO-27I-0		OU2-0-SO-29F-0		OU2-0-SO-2A-0		OU2-0-SO-3B-0		OU2-0-SO-4B-0	
		Depth				0		0		0		0		0		0	
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2	
Residential Soil		Sample date				9/22/2015		9/15/2015		9/15/2015		9/22/2015		9/24/2015		9/24/2015	
(mg/kg)		Habitat	**N**	**count of NDs**	**% detected**	Upland		Upland		Upland		Upland		Upland		Upland	
77000	n	Aluminum	6	0	100%	29400		39000		31800		36100		21500		8310	
31	n	Antimony	6	1	83%	12.3		0.158	ND	5.3		**2610**		18.1		**1290**	
1	c*R	Arsenic	6	0	100%	**23.9**		**11.4**		**14.6**		**760**		**21.9**		**799**	
15000	n	Barium	6	0	100%	289		300		316		289		230		181	
160	n	Beryllium	6	6	0%	0.002855	ND	0.002585	ND	0.00284	ND	0.002695	ND	0.00258	ND	0.00301	ND
71	n	Cadmium	6	0	100%	4.39		1.15		2.34		40.7		3.34		**293**	
--		Calcium	6	0	100%	6870		5050		6710		1890		5560		15200	
120000	nm	Chromium	6	0	100%	39.6		36.6		44.6		34.2		35.8		29.2	
23	n	Cobalt	6	0	100%	10.4		11.9		12.9		5.36		10.8		6.17	
3100	n	Copper	6	0	100%	55.5		23.1		40.4		2230		56.2		2310	
55000	n	Iron	6	0	100%	22500		28400		25400		9970		23100		28100	
400	L	Lead	6	0	100%	359		32.7		171		**20400**		**485**		**32900**	
--		Magnesium	6	0	100%	5220		6470		6000		1130		4310		5080	
1800	n	Manganese	6	0	100%	738		1040		1030		1770		945		**2580**	
23	n	Mercury	6	1	83%	0.367		0.000745	ND	0.11		12.9		0.799		**104**	
1500	n	Nickel	6	4	33%	1.05	ND	19.2		1.04	ND	35.9		0.945	ND	1.105	ND
--		Potassium	6	0	100%	7590		9210		7650		1690		5360		2090	
390	n	Selenium	6	5	17%	0.2615	ND	0.237	ND	0.26	ND	0.247	ND	0.236	ND	9.6	
390	n	Silver	6	2	67%	2.35		0.00975	ND	0.0107	ND	196		2.1		112	
--		Sodium	6	0	100%	765		450		652		3370		463		765	
1	n	Thallium	6	6	0%	0.002425	ND	0.002195	ND	0.00241	ND	0.00229	ND	0.00219	ND	0.002555	ND
390	n	Vanadium	6	0	100%	55.2		59.6		60.7		28.2		50.7		16.6	
23000	n	Zinc	6	0	100%	597		87.6		230		18600		633		**65300**	
--		Phosphate, Total (as P)	6	0	100%	1250		590		858		865		1280		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
SO = Soil

Table F-4a(3). Screening results for OU3 Floodplain soil samples compared with EPA residential soil screening values

		Sample ID				OU3-0-SO-ER-10S-0		OU3-0-SO-ER-12R-0		OU3-0-SO-ER-3M-0		OU3-0-SO-ER-5A-0		OU3-0-SO-ER-5G-0		OU3-0-SO-ER-5K-0	
		Depth				0		0		0		0		0		0	
		Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3	
Residential Soil		Sample date				9/11/2015		9/14/2015		8/6/2015		8/6/2015		8/6/2015		9/10/2015	
(mg/kg)		Habitat	**N**	**count of NDs**	**% detected**	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
77000	n	Aluminum	149	0	100%	25100		28100		4290		32800		20100		35600	
31	n	Antimony	149	4	97%	**69.4**		16.7		**99.7**		**107**		**106**		**124**	
1	c*R	Arsenic	149	0	100%	**57.1**		**19.5**		**364**		**130**		**69.9**		**109**	
15000	n	Barium	149	0	100%	293		204		350		208		164		193	
160	n	Beryllium	149	68	54%	0.0028	ND	0.002365	ND	0.00292	ND	0.002435	ND	0.002615	ND	0.002515	ND
71	n	Cadmium	149	0	100%	7.2		2.91		12		11.7		23.8		15	
--		Calcium	149	0	100%	12500		7330		62300		6880		18100		12400	
120000	nm	Chromium	149	2	99%	31.9		29.4		1.195	ND	44.3		27.5		43.1	
23	n	Cobalt	149	0	100%	9.98		8.26		**26.7**		9.5		6.1		7.62	
3100	n	Copper	149	0	100%	136		40.5		67		245		251		226	
55000	n	Iron	149	0	100%	21900		24100		24600		24000		13400		26300	
400	L	Lead	149	0	100%	**1330**		244		263		**2720**		**1870**		**2760**	
--		Magnesium	149	0	100%	6200		5440		3020		6110		4950		9370	
1800	n	Manganese	149	0	100%	640		693		**15800**		843		343		1650	
23	n	Mercury	149	2	99%	1.52		0.253		0.325		1.83		1.28		3.19	
1500	n	Nickel	149	43	71%	1.03	ND	0.87	ND	1.075	ND	17.7		17.9		20.5	
--		Potassium	149	0	100%	5820		6810		1400		7600		4250		8180	
390	n	Selenium	149	47	68%	0.2565	ND	0.2165	ND	0.2675	ND	0.223	ND	0.2395	ND	0.2305	ND
390	n	Silver	149	12	92%	13.1		2.09		3.26		20.8		12		26.8	
--		Sodium	149	0	100%	757		521		596		402		502		555	
1	n	Thallium	149	39	74%	0.002375	ND	0.002005	ND	**7.3**		**4.64**		**6.65**		**7.01**	
390	n	Vanadium	149	2	99%	51.1		48.7		4.35		52.2		33.3		51.5	
23000	n	Zinc	149	0	100%	760		291		10300		2440		1610		6290	
--		Phosphate, Total (as P)	149	0	100%	703		612		1520		750		734		982	

Table F-4a(3). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-ER-7J-0		OU3-0-SO-FT-1B-0		OU3-0-SO-FT-1C-0		OU3-0-SO-FT-2B-0		OU3-0-SO-FT-2C-0		OU3-0-SO-FT-3B-0		OU3-0-SO-FT-3C-0		OU3-0-SO-FT-3D-0		OU3-0-SO-FT-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/10/2015		9/28/2015		9/25/2015		9/28/2015		9/25/2015		10/5/2015		9/25/2015		9/25/2015		9/28/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
77000	n	Aluminum	4110		30200		13300		22100		5620		21700		4690		38700		15300	
31	n	Antimony	13.4		**53**		**373**		**62.3**		**244**		**924**		**253**		**190**		**48.9**	
1	c*R	Arsenic	**23.3**		**47.5**		**371**		**41**		**231**		**372**		**207**		**67.1**		**94.4**	
15000	n	Barium	147		244		136		252		61.5		211		83.5		417		411	
160	n	Beryllium	0.00326	ND	0.003325	ND	0.0023	ND	0.00306	ND	0.002385	ND	0.003105	ND	0.002385	ND	0.00263	ND	0.00635	ND
71	n	Cadmium	1.66		17.5		**161**		13.7		**151**		**77.2**		**135**		47.6		11.5	
--		Calcium	176000		11100		54300		9950		81200		8740		81200		7700		27500	
120000	nm	Chromium	1.33	ND	37.9		34.2		32.3		31.7		26.1		59.3		41.1		24.5	
23	n	Cobalt	6.07		11.8		9.01		8.39		15.8		12		11		14.5		16.8	
3100	n	Copper	27.8		131		493		124		430		1230		350		256		118	
55000	n	Iron	10600		26400		35600		22500		**63100**		20900		46700		26800		26400	
400	L	Lead	128		**907**		**9440**		**1230**		**8030**		**12200**		**5050**		**1420**		**1160**	
--		Magnesium	3480		7540		17600		5260		23400		4660		20800		7110		6480	
1800	n	Manganese	**5940**		1480		**3130**		862		**2390**		**3000**		**2150**		286		1790	
23	n	Mercury	0.139		14.9		6.94		6.49		1.76		**167**		2.34		**40.1**		2.74	
1500	n	Nickel	1.195	ND	1.22	ND	0.845	ND	1.125	ND	0.945	ND	1.14	ND	0.875	ND	21.2		2.335	ND
--		Potassium	1430		6880		3720		6180		2550		3690		2270		8550		3440	
390	n	Selenium	0.2985	ND	0.3045	ND	8.76		0.28	ND	14.3		0.284	ND	10.9		0.241	ND	0.58	ND
390	n	Silver	0.01225	ND	8.3		77.2		7.61		31.8		75.7		28.3		10.8		7.05	
--		Sodium	420		1350		234		448		193		655		137		915		2930	
1	n	Thallium	0.002765	ND	0.00282	ND	**5.42**		0.002595	ND	**4.58**		0.002635	ND	**3.56**		0.002235	ND	0.0054	ND
390	n	Vanadium	5.69		55.1		16.8		39.6		1.62		37.9		3.41		62.3		24.1	
23000	n	Zinc	271		1430		**30100**		1580		**25200**		11600		21900		1970		1540	
--		Phosphate, Total (as P)	428		1710		1770		1040		2050		1530		1770		1030		1300	

Table F-4a(3). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-FT-4B-0		OU3-0-SO-FT-4C-0		OU3-0-SO-FT-5C-0		OU3-0-SO-FT-6B-0		OU3-0-SO-FT-6D-0		OU3-0-SO-MRL-15D-0		OU3-0-SO-MRL-15E-0		OU3-0-SO-MRL-16D-0		OU3-0-SO-MRL-16F-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/25/2015		9/25/2015		9/25/2015		9/24/2015		9/25/2015		9/29/2015		9/29/2015		9/30/2015		9/28/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
77000	n	Aluminum	9140		4640		5640		52200		23900		34600		27100		40200		19400	
31	n	Antimony	**355**		**183**		**373**		**152**		**102**		4.47		**1460**		4.27		**1800**	
1	c*R	Arsenic	**431**		**155**		**463**		**129**		**34.2**		**16.1**		**1250**		**22.4**		**1130**	
15000	n	Barium	633		80.2		115		347		440		288		206		275		215	
160	n	Beryllium	0.00306	ND	0.00258	ND	0.00244	ND	0	ND	0.004375	ND	0.002635	ND	0.00411	ND	0.00258	ND	0.00291	ND
71	n	Cadmium	34		48.8		**120**		**89**		18.3		1.51		**99**		1.96		**77.6**	
--		Calcium	41600		96700		53200		14300		11200		7520		54000		5290		10600	
120000	nm	Chromium	42.7		32.3		32		74		50.8		41.5		143		48.3		25.3	
23	n	Cobalt	7.13		6.34		15		10		8.1		10.9		3.31		17.6		9.41	
3100	n	Copper	408		263		838		589		224		34		1920		36.8		**3140**	
55000	n	Iron	42700		18900		**60100**		33700		18400		25800		23200		29100		27100	
400	L	Lead	**7940**		**4390**		**9750**		**6070**		**2580**		113		**33000**		191		**40700**	
--		Magnesium	14600		24400		16300		12700		7850		7080		19900		6510		3590	
1800	n	Manganese	**1850**		**2440**		**2380**		796		798		1060		**2280**		1310		**2740**	
23	n	Mercury	4.82		2.02		8.57		16		2.47		0.304		**33**		0.269		**2950**	
1500	n	Nickel	0.98	ND	0.89	ND	0.895	ND	29		1.285	ND	19.9		1.51	ND	24.7		1.07	ND
--		Potassium	3230		2300		2390		10100		6430		9380		9710		9490		3230	
390	n	Selenium	22.9		0.2365	ND	21.8		12		0.401	ND	0.2415	ND	20.6		0.236	ND	12.3	
390	n	Silver	46		36.5		55.8		46		14.3		0.0099	ND	175		0.0097	ND	18.5	
--		Sodium	265		164		235		558		659		315		390		266		1120	
1	n	Thallium	**7.62**		0.00219	ND	**7.76**		**6**		0.003715	ND	0.002235	ND	**10.1**		0.00219	ND	0.00247	ND
390	n	Vanadium	12.3		7.72		0.07	ND	84		46.3		63.6		67.9		63.4		39.2	
23000	n	Zinc	4900		12800		22300		10000		2780		192		22900		336		**26800**	
--		Phosphate, Total (as P)	1680		1610		1690		1410		1530		1320		4350		746		2240	

Table F-4a(3). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-MRL-16H-0		OU3-0-SO-MRL-18F-0		OU3-0-SO-MRU-10C-0		OU3-0-SO-MRU-11C-0		OU3-0-SO-MRU-12C-0		OU3-0-SO-MRU-13C-0		OU3-0-SO-MRU-1C-0		OU3-0-SO-MRU-1D-0	
		Depth	0		0		0		0		0		0		0 Dups ave		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/28/2015		9/29/2015		10/1/2015		10/1/2015		10/1/2015		10/1/2015		11/10/2014		11/12/2014	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
77000	n	Aluminum	35800		33700		15000		2.08		7270		41100		17160		21100	
31	n	Antimony	4.33		**188**		**290**		**663**		**374**		**290**		**165.5**		24.3	
1	c*R	Arsenic	**14.4**		**75.5**		**171**		**793**		**568**		**182**		**192**		**24.1**	
15000	n	Barium	269		292		303		654		68.4		375		291		186	
160	n	Beryllium	0.002655	ND	0.00381	ND	0.002705	ND	0.003065	ND	0.00242	ND	0.00266	ND	0.0030475	ND	0.00298	ND
71	n	Cadmium	2.26		**91.4**		50.5		**148**		70.4		44.6		59.1		7.1	
--		Calcium	11900		10500		12600		5.43		42600		14400		18450		15000	
120000	nm	Chromium	38.3		45.6		18.6		98.6		29.8		76.3		47.15		50.6	
23	n	Cobalt	9.26		12.4		6.03		3.93		4.11		9.91		14.9		11	
3100	n	Copper	38.9		451		561		854		541		909		334.5		74.7	
55000	n	Iron	25200		26300		19600		4.09		15300		28700		35650		20400	
400	L	Lead	88.2		**1790**		**7060**		**14000**		**8950**		**8930**		**4005**		**660**	
--		Magnesium	6510		7070		3150		2.51		10400		13700		9690		8400	
1800	n	Manganese	541		763		1360		**2790**		**1950**		1510		**2570**		1140	
23	n	Mercury	0.124		**58.7**		8.57		16.4		5.28		**36.4**		2.7535		1.53	
1500	n	Nickel	19.6		1.4	ND	0.99	ND	1.125	ND	0.89	ND	25.5		13.2725		1.095	ND
--		Potassium	8580		7040		2350		0.884		2120		7240		5825		7640	
390	n	Selenium	0.243	ND	0.349	ND	0.2475	ND	18.9		8.55		10.4		0.27925	ND	0.273	ND
390	n	Silver	0.01	ND	17		26.4		85.6		45.2		77.6		30.55		4.59	
--		Sodium	427		593		559		0.0215		276		671		375		705	
1	n	Thallium	0.00225	ND	0.003235	ND	0.002295	ND	**21.6**		**8.51**		**8.31**		**2.21**		0.00253	ND
390	n	Vanadium	54.3		54		26.5		0.00277		21.8		72.4		44.15		48.9	
23000	n	Zinc	286		3280		12000		15300		19000		9500		5635		1230	
--		Phosphate, Total (as P)	1430		1340		1030		3090		1530		1470		1990		1720	

Table F-4a(3). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-MRU-2B-0		OU3-0-SO-MRU-2C-0		OU3-0-SO-MRU-2D-0		OU3-0-SO-MRU-3C-0		OU3-0-SO-MRU-3D-0		OU3-0-SO-MRU-4C-0		OU3-0-SO-MRU-4D-0		OU3-0-SO-MRU-5C-0		OU3-0-SO-MRU-5D-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		Dups ave OU3		OU3		OU3	
		Sample date	11/10/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/11/2014		11/12/2014	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
77000	n	Aluminum	20900		26800		29000		31600		19600		17000		28450		26200		26300	
31	n	Antimony	**100**		**40.1**		0.1675	ND	24.7		0.19	ND	0.1725	ND	8.1		**61.4**		13.2	
1	c*R	Arsenic	**80**		**51.5**		**7.23**		**37.5**		**7.5**		**9.02**		**15.35**		**151**		**19.2**	
15000	n	Barium	225		220		218		328		167		141		257.5		318		258	
160	n	Beryllium	0.003165	ND	0.00298	ND	0.002745	ND	0.003015	ND	0.00311	ND	0.00282	ND	0.003135	ND	0.003305	ND	0.002925	ND
71	n	Cadmium	13		31.6		2.4		9.5		3.3		1.21		2.665		65.1		4.88	
--		Calcium	12100		14400		8660		6690		14200		5800		5525		33700		5600	
120000	nm	Chromium	62.7		43.8		37.1		36		66.8		37.4		35.45		47.6		38.4	
23	n	Cobalt	7.04		10.5		15.9		12.3		**28.8**		5.65		11		21.9		10.9	
3100	n	Copper	160		144		31.4		111		58.9		32.4		35.15		216		46	
55000	n	Iron	18000		21200		30300		28100		22700		13200		25750		27200		22700	
400	L	Lead	**2460**		**1250**		42.6		**868**		68.2		27.7		185		**2040**		388	
--		Magnesium	4120		7440		6620		6920		8710		3960		6270		10100		7220	
1800	n	Manganese	925		1490		776		879		576		336		913		**15600**		1170	
23	n	Mercury	3.98		2.77		0.00142	ND	1.01		0.0804		0.00132	ND	0.295		3.88		0.615	
1500	n	Nickel	1.165	ND	1.095	ND	1.01	ND	1.105	ND	24.8		1.035	ND	11.4425		40.4		21.2	
--		Potassium	5640		6010		5430		7930		4380		4120		8775		5640		8920	
390	n	Selenium	0.29	ND	0.273	ND	0.2515	ND	0.276	ND	0.2845	ND	0.2585	ND	0.28725	ND	0.303	ND	0.268	ND
390	n	Silver	10.4		8.87		0.01035	ND	3.88		0.0117	ND	0.0106	ND	0.011825	ND	16.6		1.91	
--		Sodium	417		477		2190		359		2080		457		385.5		493		277	
1	n	Thallium	0.002685	ND	0.00253	ND	0.00233	ND	0.00256	ND	0.00264	ND	0.002395	ND	0.0026625	ND	0.002805	ND	0.002485	ND
390	n	Vanadium	39.8		50.3		83.7		62.3		56.4		33.8		64.35		46.1		61.2	
23000	n	Zinc	1900		2990		166		1250		260		59.7		355.5		12500		708	
--		Phosphate, Total (as P)	3760		1800		927		1260		847		1410		1255		2010		1640	

Table F-4a(3). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-MRU-6C-0		OU3-0-SO-MRU-7C-0		OU3-0-SO-MRU-7D-0		OU3-0-SO-MRU-8C-0		OU3-0-SO-NR-11J-0		OU3-0-SO-NR-13L-0		OU3-0-SO-NR-13M-0		OU3-0-SO-NR-14M-0		OU3-0-SO-NR-14P-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	11/11/2014		9/30/2015		10/1/2015		10/1/2015		9/21/2015		9/18/2015		9/18/2015		9/18/2015		9/21/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
77000	n	Aluminum	30300		23200		46700		26100		26700		33300		7510		7060		26400	
31	n	Antimony	**39.7**		**294**		6.75		30		**2290**		12		**600**		**465**		**38.8**	
1	c*R	Arsenic	**41.1**		**246**		**15.7**		**55.2**		**846**		**19**		**568**		**384**		**33.7**	
15000	n	Barium	191		245		369		364		320		393		149		192		175	
160	n	Beryllium	0.00299	ND	0.00233	ND	0.002515	ND	0.00261	ND	0.002875	ND	0.003315	ND	0.00276	ND	0.00252	ND	0.00298	ND
71	n	Cadmium	32.3		37.6		2.18		5.83		49.7		4.51		**118**		51.8		30.7	
--		Calcium	24500		19300		15100		21900		2580		10800		38400		26900		7930	
120000	nm	Chromium	60.2		55.7		47		66.6		14.8		43.3		72.8		40.5		29.1	
23	n	Cobalt	7.95		11.5		14.3		9.02		5.11		7.55		5.63		5.99		7.2	
3100	n	Copper	144		505		26.3		93.3		2200		44.2		950		766		86	
55000	n	Iron	21600		34800		32200		26000		11100		25700		21200		22100		19100	
400	L	Lead	**1120**		**7060**		184		**837**		**22200**		141		**15800**		**7920**		**593**	
--		Magnesium	8770		8870		16800		5050		1380		7940		10100		8100		5790	
1800	n	Manganese	1360		**2200**		1590		1270		874		252		**2750**		1560		448	
23	n	Mercury	1.48		15.9		0.344		2.64		**676**		0.274		17.3		**26.9**		0.999	
1500	n	Nickel	29.8		20.6		26.1		20.6		25.2		23.1		1.015	ND	0.925	ND	1.095	ND
--		Potassium	6520		5080		16800		6990		1800		7210		2310		1850		7460	
390	n	Selenium	0.274	ND	8.14		0.2305	ND	0.239	ND	0.263	ND	0.3035	ND	0.2525	ND	10.3		0.273	ND
390	n	Silver	9.2		47.2		0.00945	ND	5.18		230		0.01245	ND	74.2		42		4.25	
--		Sodium	912		276		484		612		2600		934		301		329		586	
1	n	Thallium	0.00254	ND	**3.56**		0.002135	ND	0.002215	ND	0.00244	ND	0.00281	ND	**5.54**		**3.75**		0.00253	ND
390	n	Vanadium	51.5		67.1		76.1		53		30.7		50		14.7		13.2		37.6	
23000	n	Zinc	5060		8100		339		967		14300		788		22100		12800		4290	
--		Phosphate, Total (as P)	3620		1740		1000		5540		909		859		1910		1740		650	

Table F-4a(3). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-NR-15M-0		OU3-0-SO-NR-15P-0		OU3-0-SO-NR-3F-0		OU3-0-SO-NR-7I-0		OU3-0-SO-NR-9J-0		OU3-0-SO-WR-1B-0		OU3-0-SO-WR-1F-0		OU3-0-SO-WR-2B-0		OU3-0-SO-WR-2F-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/17/2015		9/21/2015		9/22/2015		9/21/2015		9/21/2015		8/4/2015		7/31/2015		8/4/2015		7/31/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
77000	n	Aluminum	9180		5780		32900		33300		6170		4670		7670		6090		13100	
31	n	Antimony	**805**		**343**		**106**		26.6		**271**		**172**		**253**		**328**		**308**	
1	c*R	Arsenic	**701**		**307**		**96**		**26.6**		**297**		**189**		**287**		**340**		**264**	
15000	n	Barium	174		160		282		365		259		155		227		237		186	
160	n	Beryllium	0.00236	ND	0.002705	ND	0	ND	0.00285	ND	0.00296	ND	0.00258	ND	0.00296	ND	0.002325	ND	0.003325	ND
71	n	Cadmium	**100**		40.3		31		9.75		**76.4**		**72.6**		**78.7**		**97.4**		**92.1**	
--		Calcium	33000		27000		10100		10500		43900		107000		44900		50700		104000	
120000	nm	Chromium	34.5		23.2		45		45.3		30.1		16.2		28.3		23.5		33.9	
23	n	Cobalt	6.38		7.99		8		10		**52.4**		5.56		8.36		11.8		8.47	
3100	n	Copper	1210		476		205		70.2		390		227		398		474		586	
55000	n	Iron	20300		32900		25800		25200		**122000**		22300		40100		28800		19200	
400	L	Lead	**16300**		**7000**		**3060**		**597**		**6630**		**3470**		**5550**		**6370**		**5750**	
--		Magnesium	10300		8770		7880		9130		8600		10700		14100		10900		11400	
1800	n	Manganese	**2630**		1450		1070		380		1600		1710		**2490**		**2690**		1230	
23	n	Mercury	**27.6**		8.88		17		3.11		11.1		2.24		3.93		5.75		13.3	
1500	n	Nickel	0.865	ND	0.995	ND	1	ND	21.5		1.09	ND	0.95	ND	1.085	ND	20.9		1.22	ND
--		Potassium	2690		1710		8290		8010		1530		1510		2780		1820		4450	
390	n	Selenium	10.2		13.4		0	ND	0.261	ND	30.9		8.9		16		13.3		0.3045	ND
390	n	Silver	96		29.6		11		2.62		39		16.1		29.1		28.3		34	
--		Sodium	382		213		1190		1380		258		219		181		388		5960	
1	n	Thallium	**5.13**		**3.75**		0	ND	0.00242	ND	0.002515	ND	**48.1**		**15.2**		**20.6**		**31.8**	
390	n	Vanadium	20.4		5.91		47		45.8		0.085	ND	6.41		5.45		9.62		19.6	
23000	n	Zinc	20900		10100		5240		975		12400		15200		14600		**34700**		**26000**	
--		Phosphate, Total (as P)	1560		1310		942		1970		2700		1520		1550		1460		971	

Table F-4a(3). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-WR-5B-0		OU3-0-SO-WR-5F-0		OU3-0-TL-MR2	
		Depth	0		0		0001	
					Dups ave			
		Operable Unit	OU3		OU3		OU3	
		Sample date	8/4/2015		7/31/2015		3/2/2015	
		Habitat	Floodplain		Floodplain		Floodplain	
77000	n	Aluminum	9240		4520		14000	
31	n	Antimony	**207**		**192**		**519**	
1	c*R	Arsenic	**191**		**418**		**442**	
15000	n	Barium	180		54.85		143	
160	n	Beryllium	0.00288	ND	0.00254	ND	0.002525	ND
71	n	Cadmium	**123**		**88.85**		58.9	
--		Calcium	142000		49450		40700	
120000	nm	Chromium	21.8		28.8		33.9	
23	n	Cobalt	9.87		3.65		6.57	
3100	n	Copper	345		354.5		823	
55000	n	Iron	15700		16500		18000	
400	L	Lead	**5040**		**3625**		**11100**	
--		Magnesium	9180		17750		6040	
1800	n	Manganese	1340		**2345**		**2070**	
23	n	Mercury	5.88		2.8		22.7	
1500	n	Nickel	1.055	ND	0.9325	ND	0.925	ND
--		Potassium	2580		1525		3140	
390	n	Selenium	0.2635	ND	0.2325	ND	0.2315	ND
390	n	Silver	25.3		22		54.7	
--		Sodium	1180		252.5		264	
1	n	Thallium	**14.5**		**8.98**		0.00268	ND
390	n	Vanadium	16.8		6.44		34.6	
23000	n	Zinc	**26500**		17950		13700	
--		Phosphate, Total (as P)	1220		1305		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
SO = Soil
TL = Tailings
WR = OU3 P.C. West Reach

Table F-4a(4). Screening results for OU3 Upland soil samples compared with EPA residential soil screening values

Residential Soil (mg/kg)		Sample ID / Depth / Operable Unit / Sample date / Habitat	N	count of NDs	% detected	OU3-0-SO-ER-11D-0		OU3-0-SO-ER-11S-0		OU3-0-SO-ER-4B-0		OU3-0-SO-ER-4Q-0		OU3-0-SO-ER-6A-0		OU3-0-SO-ER-7P-0		OU3-0-SO-ER-8A-0	
		Depth				0		0		0		0		0		0		0	
		Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date				9/14/2015		9/11/2015		9/14/2015		8/5/2015		9/14/2015		9/10/2015		9/14/2015	
		Habitat				Upland		Upland		Upland		Upland		Upland		Upland		Upland	
77000	n	Aluminum	47	0	100%	35000		33700		31700		26600		30400		30100		26800	
31	n	Antimony	47	5	89%	**39.7**		7.7		**62.8**		20.4		4.2		**116**		8.71	
1	c*R	Arsenic	47	0	100%	**42.3**		**16.3**		**80.5**		**41.2**		**10.9**		**103**		**11.1**	
15000	n	Barium	47	0	100%	225		189		226		344		198		228		167	
160	n	Beryllium	47	46	2%	0.00246	ND	0.002575	ND	0.00259	ND	0.002435	ND	0.00224	ND	0.002555	ND	0.002675	ND
71	n	Cadmium	47	1	98%	8.79		1.77		10.7		5.15		2.26		13.6		4.2	
--		Calcium	47	0	100%	9740		7040		7910		6680		6550		7540		26300	
120000	nm	Chromium	47	0	100%	54.5		34.7		39.1		37.1		29.8		40.5		30.7	
23	n	Cobalt	47	0	100%	11.1		8.03		8.91		13		9.31		7.98		7.24	
3100	n	Copper	47	1	98%	109		30.7		135		78.6		28.1		193		34.1	
55000	n	Iron	47	0	100%	32800		24800		24300		22800		26900		23200		22300	
400	L	Lead	47	0	100%	**1030**		91.6		**1520**		**642**		67.5		**2500**		176	
--		Magnesium	47	0	100%	7520		7190		6220		5540		5550		6640		6730	
1800	n	Manganese	47	0	100%	1140		488		894		1180		811		760		429	
23	n	Mercury	47	1	98%	1.51		0.122		0.911		0.405		0.118		2.04		0.34	
1500	n	Nickel	47	22	53%	18.4		0.945	ND	0.95	ND	18.5		0.82	ND	0.94	ND	0.98	ND
--		Potassium	47	0	100%	7910		7160		6890		6460		7410		7900		5660	
390	n	Selenium	47	47	0%	0.2255	ND	0.236	ND	0.237	ND	0.223	ND	0.205	ND	0.234	ND	0.245	ND
390	n	Silver	47	16	66%	8.19		0.0097	ND	13.7		4.13		0.00845	ND	19.9		1.78	
--		Sodium	47	0	100%	565		330		419		432		508		586		368	
1	n	Thallium	47	46	2%	**6.48**		0.002185	ND	0.0022	ND	0.002065	ND	0.0019	ND	0.00217	ND	0.00227	ND
390	n	Vanadium	47	0	100%	63.7		58.7		59.6		55.4		52.6		46		52.9	
23000	n	Zinc	47	0	100%	1870		166		1540		661		286		2270		659	
--		Phosphate, Total (as P)	47	0	100%	892		517		579		565		596		973		711	

Table F-4a(4). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-FT-4E-0		OU3-0-SO-FT-5E-0		OU3-0-SO-MRL-14G-0		OU3-0-SO-MRL-14H-0		OU3-0-SO-MRL-14I-0		OU3-0-SO-MRL-14J-0		OU3-0-SO-MRL-15G-0		OU3-0-SO-MRL-15H-0		OU3-0-SO-MRL-15I-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/25/2015		9/25/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
77000	n	Aluminum	32500		32000		32500		31300		36000		28000		30000		35000		33200	
31	n	Antimony	13.1		13.5		21.7		9.51		**40.7**		5.48		3.9		7.87		**51.5**	
1	c*R	Arsenic	**20**		**19.2**		**24.2**		**24.5**		**43.4**		**16.4**		**12.7**		**21.9**		**62**	
15000	n	Barium	327		219		200		220		195		278		204		238		237	
160	n	Beryllium	0.00306	ND	0.00274	ND	0.00284	ND	0.00273	ND	0.00335	ND	0.00261	ND	0.002805	ND	0.00256	ND	0.00316	ND
71	n	Cadmium	3.26		9.86		5.44		3.3		8.24		1.88		1.64		3.51		9.64	
--		Calcium	8590		6040		9880		8790		43800		5820		7350		8170		9420	
120000	nm	Chromium	41.6		33.9		39.6		39.1		72.5		36		69.9		39.7		45	
23	n	Cobalt	7.8		8.52		7.44		9.4		10.1		11.8		7.73		9.1		12.4	
3100	n	Copper	59.9		55.1		66.5		44.2		116		36.6		31.8		41.9		126	
55000	n	Iron	22700		24100		24300		24000		24800		24400		22300		25400		23800	
400	L	Lead	375		288		**459**		213		**1290**		166		83.1		146		**1210**	
--		Magnesium	7170		5690		6940		6840		9380		4950		6050		6560		6830	
1800	n	Manganese	315		558		410		484		759		991		252		706		**1960**	
23	n	Mercury	2.03		1.54		0.651		0.352		2.49		0.154		0.154		0.291		1.81	
1500	n	Nickel	1.125	ND	1.005	ND	1.045	ND	18.9		33.6		18.2		29.9		19		22.9	
--		Potassium	8010		8070		8240		7250		7600		6950		7240		8320		7260	
390	n	Selenium	0.28	ND	0.251	ND	0.26	ND	0.25	ND	0.307	ND	0.239	ND	0.257	ND	0.2345	ND	0.2895	ND
390	n	Silver	2.14		2.19		4.44		1.73		11.3		0.0098	ND	0.01055	ND	1.33		9.07	
--		Sodium	445		347		376		352		434		390		312		406		591	
1	n	Thallium	0.002595	ND	0.002325	ND	0.00241	ND	0.002315	ND	0.002845	ND	0.002215	ND	0.00238	ND	0.002175	ND	0.00268	ND
390	n	Vanadium	61.7		57.6		57.8		55.1		65.7		59.1		53.6		60.8		65.3	
23000	n	Zinc	307		589		1120		522		2170		233		203		426		1660	
--		Phosphate, Total (as P)	1240		1190		1200		1090		843		880		1130		770		874	

Table F-4a(4). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-MRL-15J-0		OU3-0-SO-MRL-15K-0		OU3-0-SO-MRL-16G-0		OU3-0-SO-MRL-16I-0		OU3-0-SO-MRL-16J-0		OU3-0-SO-MRL-16K-0		OU3-0-SO-MRL-17G-0		OU3-0-SO-MRL-17H-0		OU3-0-SO-MRL-18G-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/29/2015		9/29/2015		9/28/2015		9/28/2015		9/28/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
77000	n	Aluminum	40800		29000		33700		36000		35500		38900		33000		35400		34500	
31	n	Antimony	**244**		0.165	ND	12.9		**37.7**		16.8		**77.3**		4.09		4.12		4.1	
1	c*R	Arsenic	**223**		**11**		**18.8**		**41.8**		**25.1**		**75.1**		**17.1**		**18**		**19.3**	
15000	n	Barium	197		286		216		197		241		335		201		267		332	
160	n	Beryllium	0.003405	ND	0.002705	ND	0.0027	ND	0.002825	ND	0.0027	ND	0.002985	ND	0.002775	ND	0.0027	ND	0.00265	ND
71	n	Cadmium	27.5		1.42		2.33		6.03		4.32		12.2		2.23		1.63		1.82	
--		Calcium	13900		5900		8400		7790		7500		18100		10700		6820		8060	
120000	nm	Chromium	57.7		46.2		34.2		39.7		41		42.9		33.6		33.9		42.9	
23	n	Cobalt	8.14		11.9		9.83		8.31		8.48		12.3		9.42		12.6		11.3	
3100	n	Copper	522		34.4		48.9		94.9		54		165		34		34.4		45.9	
55000	n	Iron	30100		24900		23700		24900		27400		27400		24700		28700		28300	
400	L	Lead	**6640**		94.3		209		**1010**		256		**1710**		83.8		83.9		109	
--		Magnesium	10800		5210		6290		6940		6250		8370		6200		5760		7010	
1800	n	Manganese	684		1020		657		424		430		1550		556		921		1090	
23	n	Mercury	11.3		0.0952		0.235		1.03		0.373		3.2		0.141		0.122		0.231	
1500	n	Nickel	1.25	ND	23.4		18.4		19.1		19.3		21.6		1.02	ND	21.7		23	
--		Potassium	9330		8090		8060		8270		7440		8540		7140		6890		8940	
390	n	Selenium	0.312	ND	0.2475	ND	0.2475	ND	0.259	ND	0.247	ND	0.2735	ND	0.254	ND	0.247	ND	0.2425	ND
390	n	Silver	54.8		0.0102	ND	1.6		7.26		2.24		15		0.01045	ND	0.01015	ND	0.00995	ND
--		Sodium	571		527		353		339		488		460		337		271		483	
1	n	Thallium	0.00289	ND	0.002295	ND	0.00229	ND	0.0024	ND	0.00229	ND	0.002535	ND	0.002355	ND	0.00229	ND	0.00225	ND
390	n	Vanadium	76.7		58.5		47.3		52.4		61.7		77.4		67.5		71.9		65.6	
23000	n	Zinc	7800		148		407		1330		622		2610		341		186		245	
--		Phosphate, Total (as P)	1520		975		1740		816		567		1080		1020		1090		1450	

Table F-4a(4). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-MRL-19G-0		OU3-0-SO-MRU-10B-0		OU3-0-SO-MRU-12B-0		OU3-0-SO-MRU-12E-0		OU3-0-SO-MRU-13B-0		OU3-0-SO-MRU-1B-0		OU3-0-SO-MRU-3A-0		OU3-0-SO-MRU-3B-0		OU3-0-SO-MRU-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/29/2015		9/30/2015		9/30/2015		10/1/2015		9/30/2015		11/10/2014		11/10/2014		11/10/2014		11/10/2014	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
77000	n	Aluminum	40200		27100		26600		28600		37600		18300		28100		24200		30000	
31	n	Antimony	0.16	ND	12.9		22.1		6.68		24		**37.3**		29		**112**		8.16	
1	c*R	Arsenic	**19.9**		**22.6**		**39.3**		**22**		**37.5**		**42**		**33.9**		**98.7**		**16.8**	
15000	n	Barium	306		331		318		289		460		200		261		302		253	
160	n	Beryllium	0.002615	ND	0.002715	ND	0.00294	ND	0.003025	ND	0.00283	ND	0.003125	ND	0.003235	ND	0.003105	ND	0.003115	ND
71	n	Cadmium	1.8		4.01		11		2.95		4.53		10.9		6.67		17.4		2.94	
--		Calcium	6760		6630		15100		12000		5630		10700		15200		13100		21400	
120000	nm	Chromium	40.1		32.6		45.7		131		30.8		72.1		91		73.7		74.5	
23	n	Cobalt	14.2		13.3		8.71		9.56		11		6.9		8.54		10.6		10.8	
3100	n	Copper	34.8		60		294		39.5		62		89.3		97.3		210		76.1	
55000	n	Iron	29100		27500		36400		22300		28600		15800		21100		20600		26300	
400	L	Lead	83.2		247		**925**		191		**702**		**1170**		**914**		**3040**		213	
--		Magnesium	6690		4520		6120		8150		4480		3480		5630		4620		6020	
1800	n	Manganese	1310		838		662		1230		1070		788		1090		**1850**		1590	
23	n	Mercury	0.0913		0.712		0.709		0.211		1.33		0.712		1.15		0.526		0.306	
1500	n	Nickel	22.2		19.8		1.08	ND	26.8		1.04	ND	1.15	ND	1.19	ND	22.8		23.9	
--		Potassium	9550		6600		6550		8800		8580		5060		8660		6640		8930	
390	n	Selenium	0.2395	ND	0.2485	ND	0.2695	ND	0.277	ND	0.2595	ND	0.2865	ND	0.2965	ND	0.2845	ND	0.2855	ND
390	n	Silver	0.00985	ND	2.52		5.11		0.0114	ND	2.96		6.53		6.93		13.9		0.0117	ND
--		Sodium	388		294		2310		385		224		352		452		416		424	
1	n	Thallium	0.00222	ND	0.002305	ND	0.002495	ND	0.002565	ND	0.0024	ND	0.002655	ND	0.002745	ND	0.002635	ND	0.002645	ND
390	n	Vanadium	69.6		68.3		46.5		50		62.8		37.9		51.4		49.3		55.1	
23000	n	Zinc	192		861		1940		328		993		1380		994		2260		424	
--		Phosphate, Total (as P)	1030		1240		625		3340		1100		4020		5460		4170		68400	

Table F-4a(4). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-MRU-4B-0		OU3-0-SO-MRU-5B-0		OU3-0-SO-MRU-6A-0		OU3-0-SO-MRU-6B-0		OU3-0-SO-MRU-6D-0		OU3-0-SO-MRU-7B-0		OU3-0-SO-MRU-8B-0		OU3-0-SO-MRU-8D-0		OU3-0-SO-MRU-9B-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	11/10/2014		11/11/2014		11/11/2014		11/11/2014		11/12/2014		9/30/2015		9/30/2015		10/1/2015		9/30/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
77000	n	Aluminum	17100		12700		20900		14900		22100		17700		25400		35400		29100	
31	n	Antimony	**61.7**		23.4		14.3		0.2435	ND	16.7		28.5		**213**		8.23		21.5	
1	c*R	Arsenic	**42.8**		**26.6**		**22**		**5.55**		**24.3**		**31.7**		**244**		**18.3**		**34.3**	
15000	n	Barium	228		181		256		164		207		154		269		228		221	
160	n	Beryllium	0.00314	ND	2.28		0.003235	ND	0.003985	ND	0.00284	ND	0.00243	ND	0.003255	ND	0.003265	ND	0.00262	ND
71	n	Cadmium	14.1		9.99		3.47		0.0113	ND	7.88		5.59		41.6		2.68		5.05	
--		Calcium	17300		13900		27600		16300		11200		64300		20100		13500		5800	
120000	nm	Chromium	40.1		17.6		67.7		28.8		29.4		24.3		69.4		43.7		41	
23	n	Cobalt	6.11		3.56		7.88		5.05		9.16		5.87		14.8		14.4		15.7	
3100	n	Copper	152		74.4		37		1.025	ND	48		64.1		473		35.9		51.8	
55000	n	Iron	14100		11600		18800		12100		19400		16600		33200		30700		32500	
400	L	Lead	**1600**		**744**		371		21.4		**511**		**906**		**6610**		217		**495**	
--		Magnesium	4010		2750		6710		7610		8320		5550		11700		11100		6200	
1800	n	Manganese	984		269		956		354		1480		**2810**		**4600**		1060		965	
23	n	Mercury	2.54		0.783		0.606		0.00175	ND	0.815		0.993		17.7		0.284		1.02	
1500	n	Nickel	1.155	ND	1.235	ND	1.185	ND	1.465	ND	1.045	ND	0.895	ND	29.2		24.7		23.4	
--		Potassium	5740		2190		5940		3360		7360		4750		5830		5010		5070	
390	n	Selenium	0.288	ND	0.308	ND	0.296	ND	0.365	ND	0.2605	ND	0.2225	ND	0.298	ND	0.299	ND	0.24	ND
390	n	Silver	6.9		2.92		0.01215	ND	0.015	ND	2.78		4.42		50.2		0.0123	ND	3.15	
--		Sodium	330		697		425		212		242		295		368		747		238	
1	n	Thallium	0.002665	ND	0.00285	ND	0.002745	ND	0.00338	ND	0.00241	ND	0.002065	ND	0.00276	ND	0.00277	ND	0.002225	ND
390	n	Vanadium	33.6		20.7		43.5		30.9		49		41		78.6		68.2		79.6	
23000	n	Zinc	1150		1610		468		67.4		1130		908		9290		402		971	
--		Phosphate, Total (as P)	1900		1200		2680		436		1010		2230		1710		1240		1290	

Table F-4a(4). (cont.)

Residential Soil (mg/kg)		Sample ID	OU3-0-SO-NR-12Q-0		OU3-0-SO-NR-2C-0		OU3-0-SO-NR-2F-0		OU3-0-SO-NR-4J-0	
		Depth	0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3	
		Sample date	10/5/2015		9/22/2015		9/22/2015		9/22/2015	
		Habitat	Upland		Upland		Upland		Upland	
77000	n	Aluminum	17300		20900		24400		30500	
31	n	Antimony	0.164	ND	7.28		7.25		0.1445	ND
1	c*R	Arsenic	**8.36**		**10.9**		**13.9**		**47.2**	
15000	n	Barium	105		348		241		234	
160	n	Beryllium	0.002685	ND	0.002525	ND	0.0025	ND	0.00237	ND
71	n	Cadmium	0.833		3.07		2.67		1.18	
--		Calcium	2700		8660		8800		7330	
120000	nm	Chromium	20.2		32.2		32.3		42.4	
23	n	Cobalt	6.05		10.9		8.13		9.73	
3100	n	Copper	17.1		43		34.7		19.5	
55000	n	Iron	13100		25200		19700		24500	
400	L	Lead	42.4		251		233		77.4	
--		Magnesium	3110		5270		5850		7550	
1800	n	Manganese	382		706		472		318	
23	n	Mercury	0.162		0.263		0.322		0.0772	
1500	n	Nickel	0.985	ND	17.3		0.92	ND	17.9	
--		Potassium	4800		5050		5740		7030	
390	n	Selenium	0.246	ND	0.2315	ND	0.229	ND	0.217	ND
390	n	Silver	0.0101	ND	1.57		1.37		0.0089	ND
--		Sodium	293		1670		459		526	
1	n	Thallium	0.00228	ND	0.002145	ND	0.00212	ND	0.00201	ND
390	n	Vanadium	33.6		60.6		45.1		83.8	
23000	n	Zinc	60.1		333		348		104	
--		Phosphate, Total (as P)	291		1420		983		1060	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
MRU = OU3 Middle Reach Upper
ND = Non-Detect
NR = OU3 State Route 248 North Reach
RMC = Resource and Environmental Management Consultants, Inc.
SO = Soil
WR = OU3 P.C. West Reach

Table F-4b(1). Screening results for OU2 Floodplain soil samples compared with EPA industrial soil screening values

		Sample ID				OU2-0-SO-10L-0		OU2-0-SO-12I-0		OU2-0-SO-12L-0		OU2-0-SO-15L-0		OU2-0-SO-15N-0		OU2-0-SO-17L-0		OU2-0-SO-17N-0	
		Depth				0		0		0		0		0		0		0	
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2		OU2	
Industrial Soil		Sample date				9/21/2015		9/17/2015		9/21/2015		9/17/2015		9/16/2015		9/17/2015		9/16/2015	
(mg/kg)		Habitat	**N**	**count of NDs**	**% detected**	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	33	0	100%	27400		18200		7900		3350		6830		30200		3580	
470	n	Antimony	33	1	97%	16.7		**1550**		**874**		**847**		304		11.4		413	
3.0	cR	Arsenic	33	0	100%	**10.5**		**1350**		**649**		**757**		**258**		**23.8**		**406**	
220000	nm	Barium	33	0	100%	195		227		185		63.8		236		319		99.4	
2300	n	Beryllium	33	33	0%	0.00302	ND	0.00249	ND	0.00264	ND	0.00437	ND	0.002865	ND	0.002705	ND	0.0026	ND
980	n	Cadmium	33	0	100%	15.7		206		79.6		175		37.4		4.08		69	
--		Calcium	33	0	100%	6830		39100		25000		74700		42000		7300		43500	
1800000	nm	Chromium	33	2	94%	34.1		123		30		1.785	ND	34.5		39.3		17.7	
350	n	Cobalt	33	0	100%	5.77		3.97		2.69		7.29		6.91		11.8		2.2	
47000	n	Copper	33	0	100%	34.9		2450		1670		252		385		46.2		579	
820000	nm	Iron	33	0	100%	20500		24000		15300		11200		31600		34800		11100	
800	L	Lead	33	1	97%	15.2	ND	**34400**		**16900**		**1830**		**7680**		272		**7900**	
--		Magnesium	33	0	100%	6220		17700		8680		3610		14300		6140		12000	
26000	n	Manganese	33	0	100%	183		3650		1730		350		1670		1070		2100	
350	n	Mercury	33	0	100%	0.202		31.3		26		1.88		9.38		0.424		8.23	
22000	n	Nickel	33	27	18%	1.11	ND	0.915	ND	0.97	ND	1.605	ND	1.05	ND	18.6		0.955	ND
--		Potassium	33	0	100%	7520		6500		2350		942		2280		6150		1270	
5800	n	Selenium	33	19	42%	0.2765	ND	20.5		10.2		0.4	ND	10.8		0.248	ND	0.238	ND
5800	n	Silver	33	5	85%	0.01135	ND	236		120		7.02		41.3		1.6		55.2	
--		Sodium	33	0	100%	1020		473		399		1350		285		944		162	
12.0	n	Thallium	33	14	58%	0.00256	ND	11.9		0.00224	ND	**24.9**		3.98		0.002295	ND	5.33	
5800	n	Vanadium	33	1	97%	40.3		41.8		18.9		5.9		18.8		40.6		11.4	
--		Zinc	33	0	100%	1370		31300		20300		65600		11100		427		17200	
--		Phosphate, Total (as P)	33	0	100%	905		3710		1460		419		2050		863		1660	

Table F-4b(1). (cont.)

		Sample ID	OU2-0-SO-26V-0		OU2-0-SO-30R-0		OU2-0-SO-30Y-0		OU2-0-SO-34G-0		OU2-0-SO-35V-0		OU2-0-SO-37V-0		OU2-0-SO-39V-0		OU2-0-SO-43T-0		OU2-0-SO-44T-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
Industrial Soil		Sample date	9/16/2015		9/15/2015		9/16/2015		8/5/2015		8/5/2015		8/5/2015		8/4/2015		8/4/2015		9/14/2015	
(mg/kg)		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	3370		5600		4610		7530		12000		20000		12800		2940		6960	
470	n	Antimony	132		**489**		234		63		45.2		24.8		320		3.78		353	
3.0	cR	Arsenic	**217**		**335**		**335**		**110**		**206**		**48.7**		**306**		**4.23**		**413**	
220000	nm	Barium	161		119		184		159		196		269		336		77.7		248	
2300	n	Beryllium	0.00264	ND	0.00246	ND	0.002595	ND	0.00263	ND	0.00344	ND	0.0025	ND	0.00244	ND	0.002495	ND	0	ND
980	n	Cadmium	27.3		54		93.1		63.6		17.5		5.52		55.3		3		127	
--		Calcium	38100		27500		57000		41400		24200		27800		15000		117000		48800	
1800000	nm	Chromium	20.6		26		25.9		10.9		15		24		22.5		1.02	ND	28	
350	n	Cobalt	2.5		2.2		8.04		12.2		14.5		8.61		27.9		1.88		9	
47000	n	Copper	125		873		337		126		89.7		76.7		411		31.5		806	
820000	nm	Iron	16100		10400		46500		11900		26100		20100		20900		3340		39300	
800	L	Lead	**2810**		**13900**		**6410**		605		**1110**		616		**9200**		51.6		**10600**	
--		Magnesium	14900		7660		18500		3480		4670		6790		4000		4650		13300	
26000	n	Manganese	1700		1420		2460		1770		2420		266		3850		2820		2050	
350	n	Mercury	1.65		17.7		4.82		0.642		4.79		1.8		23.9		0.298		14	
22000	n	Nickel	0.97	ND	0.905	ND	0.955	ND	0.965	ND	1.265	ND	0.92	ND	0.895	ND	0.915	ND	1	ND
--		Potassium	1440		1560		2070		1900		2910		5070		3630		1540		2240	
5800	n	Selenium	0.2415	ND	0.2255	ND	15.1		0.2405	ND	0.315	ND	0.229	ND	8.57		0.2285	ND	10	
5800	n	Silver	17		60.6		34.2		5.58		3.92		3.48		24.7		0.0094	ND	50	
--		Sodium	127		280		278		202		783		587		278		788		400	
12.0	n	Thallium	0.00224	ND	3.33		3.96		7.29		0.00292	ND	0.002125	ND	0.00207	ND	0.002115	ND	7	
5800	n	Vanadium	10.4		11.6		15.2		14.1		17.4		31.8		25.8		5.56		9	
--		Zinc	4430		17200		15400		7970		2680		995		6590		289		31800	
--		Phosphate, Total (as P)	1480		1390		1330		1040		913		721		1320		844		1740	

Table F-4b(1). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU2-0-SO-44V-0		OU2-0-SO-44W-0		OU2-0-SO-45T-0		OU2-0-SO-45V-0		OU2-0-SO-46V-0		OU2-0-SO-47T-0		OU2-0-SO-48S-0		OU2-0-SO-48T-0		OU2-0-SO-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	7/31/2015		7/31/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		9/24/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	20500		10200		11300		6470		5310		9190		7330		6640		31200	
470	n	Antimony	**570**		344		**513**		224		332		269		267		**5490**		12.4	
3.0	cR	Arsenic	**550**		**442**		**589**		**241**		**743**		**360**		**314**		**7010**		**22.2**	
220000	nm	Barium	298		224		330		171		160		212		196		575		458	
2300	n	Beryllium	0.003105	ND	0.00328	ND	0.0022	ND	0.002365	ND	0	ND	0	ND	0.00284	ND	0.00358	ND	0.00294	ND
980	n	Cadmium	86.5		180		105		65.4		62		118		101		66.1		3.68	
--		Calcium	41800		44700		69600		50200		40400		25600		52900		14900		6170	
1800000	nm	Chromium	65.4		30.3		49.5		33.3		26		29		27.5		20		37.7	
350	n	Cobalt	13.5		21.4		13.5		4.99		7		9		9.9		11.3		11.5	
47000	n	Copper	1080		650		845		437		278		494		387		396		48.1	
820000	nm	Iron	33700		25800		37500		21300		27500		22700		28800		130000		26700	
800	L	Lead	**9720**		**4800**		**11400**		**5490**		**4220**		**5600**		**5920**		**3810**		271	
--		Magnesium	14600		10300		15800		16200		13900		7060		13700		3440		5670	
26000	n	Manganese	2750		3200		2280		2310		2300		1010		1950		1680		1070	
350	n	Mercury	26.5		9.27		10.8		3.27		3		13		3.61		1.57		0.643	
22000	n	Nickel	22.6		23.5		0.81	ND	0.87	ND	1	ND	2	ND	1.04	ND	1.315	ND	20.1	
--		Potassium	6030		3250		4330		2830		2210		2410		2740		2310		7710	
5800	n	Selenium	14.3		0.3005	ND	15.6		8.2		8		20		9.49		0.3275	ND	0.2695	ND
5800	n	Silver	72.3		41.3		81.3		26.8		22		27		28.2		21.1		1.63	
--		Sodium	387		3430		204		115		119		391		376		335		487	
12.0	n	Thallium	**21.6**		**45.7**		**14.1**		5.9		4		**23**		10.3		**35.4**		0.002495	ND
5800	n	Vanadium	30.7		14.5		14.3		8.5		3		13		9.21		0.0825	ND	57	
--		Zinc	26600		29800		18000		14600		13200		19400		27900		22200		515	
--		Phosphate, Total (as P)	2550		261		1490		1060		1670		3480		1240		519		1020	

Table F-4b(1). (cont.)

		Sample ID	OU2-0-SO-50P-0		OU2-0-SO-50Q-0		OU2-0-SO-50T-0		OU2-0-SO-7F-0		OU2-0-SO-8G-0		OU2-0-SO-8I-0		OU2-0-SO-OP1-0		OU2-0-SO-OP2-0	
		Depth	0		0		0		0		0		0		0		0	
			Dups ave															
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
Industrial Soil		Sample date	7/29/2015		7/29/2015		7/30/2015		9/17/2015		9/17/2015		9/21/2015		7/29/2015		9/17/2015	
(mg/kg)		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	30600		7320		35800		8860		9090		5200		11200		27200	
470	n	Antimony	6.6		276		0.1895	ND	**826**		**1270**		257		244		8.27	
3.0	cR	Arsenic	**11.9**		**247**		**11.3**		**1020**		**1060**		**292**		**268**		**16.8**	
220000	nm	Barium	312		166		262		158		174		57.4		269		450	
2300	n	Beryllium	0.0030675	ND	0.00306	ND	0.0031	ND	0.002665	ND	0.002455	ND	0.002505	ND	0.00329	ND	0.002765	ND
980	n	Cadmium	2.395		44.8		1.3		160		119		44.8		42.2		2	
--		Calcium	7775		50200		6300		41900		30800		42900		17300		8500	
1800000	nm	Chromium	34.4		28.1		40.4		50.2		40.5		28.4		23.5		31.4	
350	n	Cobalt	10.8		5.92		11.4		3.41		6.23		2.42		3.57		11.4	
47000	n	Copper	40.8		352		22.8		1010		2040		358		550		58.1	
820000	nm	Iron	26200		17900		27300		19600		23300		11200		19200		25100	
800	L	Lead	160.5		**4730**		75.1		**27400**		**28900**		**6260**		**9960**		176	
--		Magnesium	6410		11900		6910		14200		9460		12200		5970		6390	
26000	n	Manganese	765.5		1730		667		2740		4220		2110		832		641	
350	n	Mercury	0.228		10.7		0.0463		16.3		79.1		5.64		7.22		0.372	
22000	n	Nickel	1.1275	ND	1.125	ND	20.9		0.98	ND	0.9	ND	0.92	ND	24.4		1.015	ND
--		Potassium	6555		2430		6480		3590		2540		1820		3250		6060	
5800	n	Selenium	0.281	ND	0.2805	ND	0.284	ND	9.53		10.8		0.2295	ND	0.301	ND	0.253	ND
5800	n	Silver	0.01155	ND	33.8		0.0117	ND	169		145		32.2		35.8		0.0104	ND
--		Sodium	710.5		242		520		327		491		176		578		794	
12.0	n	Thallium	0.002605	ND	4.6		0.00263	ND	6.25		3.34		0.002125	ND	0.00279	ND	0.002345	ND
5800	n	Vanadium	50.3		12.1		60		21.6		24.2		11		122		39.6	
--		Zinc	274		10400		122		27900		29700		12100		8250		272	
--		Phosphate, Total (as P)	1450		1360		1450		5180		1660		1430		1580		883	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
SO = Soil

Table F-4b(2). Screening results for OU2 Upland soil samples compared with EPA industrial soil screening values

Industrial Soil (mg/kg)		Sample ID	N	count of NDs	% detected	OU2-0-SO-21D-0		OU2-0-SO-27I-0		OU2-0-SO-29F-0		OU2-0-SO-2A-0		OU2-0-SO-3B-0		OU2-0-SO-4B-0	
		Depth				0		0		0		0		0		0	
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date				9/22/2015		9/15/2015		9/15/2015		9/22/2015		9/24/2015		9/24/2015	
		Habitat				Upland		Upland		Upland		Upland		Upland		Upland	
1100000	nm	Aluminum	6	0	100%	29400		39000		31800		36100		21500		8310	
470	n	Antimony	6	1	83%	12.3		0.158	ND	5.3		**2610**		18.1		**1290**	
3.0	cR	Arsenic	6	0	100%	**23.9**		**11.4**		**14.6**		**760**		**21.9**		**799**	
220000	nm	Barium	6	0	100%	289		300		316		289		230		181	
2300	n	Beryllium	6	6	0%	0.002855	ND	0.002585	ND	0.00284	ND	0.002695	ND	0.00258	ND	0.00301	ND
980	n	Cadmium	6	0	100%	4.39		1.15		2.34		40.7		3.34		293	
--		Calcium	6	0	100%	6870		5050		6710		1890		5560		15200	
1800000	nm	Chromium	6	0	100%	39.6		36.6		44.6		34.2		35.8		29.2	
350	n	Cobalt	6	0	100%	10.4		11.9		12.9		5.36		10.8		6.17	
47000	n	Copper	6	0	100%	55.5		23.1		40.4		2230		56.2		2310	
820000	nm	Iron	6	0	100%	22500		28400		25400		9970		23100		28100	
800	L	Lead	6	0	100%	359		32.7		171		**20400**		485		**32900**	
--		Magnesium	6	0	100%	5220		6470		6000		1130		4310		5080	
26000	n	Manganese	6	0	100%	738		1040		1030		1770		945		2580	
350	n	Mercury	6	1	83%	0.367		0.000745	ND	0.11		12.9		0.799		104	
22000	n	Nickel	6	4	33%	1.05	ND	19.2		1.04	ND	35.9		0.945	ND	1.105	ND
--		Potassium	6	0	100%	7590		9210		7650		1690		5360		2090	
5800	n	Selenium	6	5	17%	0.2615	ND	0.237	ND	0.26	ND	0.247	ND	0.236	ND	9.6	
5800	n	Silver	6	2	67%	2.35		0.00975	ND	0.0107	ND	196		2.1		112	
--		Sodium	6	0	100%	765		450		652		3370		463		765	
12.0	n	Thallium	6	6	0%	0.002425	ND	0.002195	ND	0.00241	ND	0.00229	ND	0.00219	ND	0.002555	ND
5800	n	Vanadium	6	0	100%	55.2		59.6		60.7		28.2		50.7		16.6	
--		Zinc	6	0	100%	597		87.6		230		18600		633		65300	
--		Phosphate, Total (as P)	6	0	100%	1250		590		858		865		1280		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
SO = Soil

Table F-4b(3). Screening results for OU3 Floodplain soil samples compared with EPA industrial soil screening values

		Sample ID				OU3-0-SO-ER-10S-0		OU3-0-SO-ER-12R-0		OU3-0-SO-ER-3M-0		OU3-0-SO-ER-5A-0		OU3-0-SO-ER-5G-0		OU3-0-SO-ER-5K-0	
		Depth				0		0		0		0		0		0	
		Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3	
Industrial Soil		Sample date				9/11/2015		9/14/2015		8/6/2015		8/6/2015		8/6/2015		9/10/2015	
(mg/kg)		Habitat	**N**	**count of NDs**	**% detected**	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	149	0	100%	25100		28100		4290		32800		20100		35600	
470	n	Antimony	149	4	97%	69.4		16.7		99.7		107		106		124	
3.0	cR	Arsenic	149	0	100%	**57.1**		**19.5**		**364**		**130**		**69.9**		**109**	
220000	nm	Barium	149	0	100%	293		204		350		208		164		193	
2300	n	Beryllium	149	68	54%	0.0028	ND	0.002365	ND	0.00292	ND	0.002435	ND	0.002615	ND	0.002515	ND
980	n	Cadmium	149	0	100%	7.2		2.91		12		11.7		23.8		15	
--		Calcium	149	0	100%	12500		7330		62300		6880		18100		12400	
1800000	nm	Chromium	149	2	99%	31.9		29.4		1.195	ND	44.3		27.5		43.1	
350	n	Cobalt	149	0	100%	9.98		8.26		26.7		9.5		6.1		7.62	
47000	n	Copper	149	0	100%	136		40.5		67		245		251		226	
820000	nm	Iron	149	0	100%	21900		24100		24600		24000		13400		26300	
800	L	Lead	149	0	100%	**1330**		244		263		**2720**		**1870**		**2760**	
--		Magnesium	149	0	100%	6200		5440		3020		6110		4950		9370	
26000	n	Manganese	149	0	100%	640		693		15800		843		343		1650	
350	n	Mercury	149	2	99%	1.52		0.253		0.325		1.83		1.28		3.19	
22000	n	Nickel	149	43	71%	1.03	ND	0.87	ND	1.075	ND	17.7		17.9		20.5	
--		Potassium	149	0	100%	5820		6810		1400		7600		4250		8180	
5800	n	Selenium	149	47	68%	0.2565	ND	0.2165	ND	0.2675	ND	0.223	ND	0.2395	ND	0.2305	ND
5800	n	Silver	149	12	92%	13.1		2.09		3.26		20.8		12		26.8	
--		Sodium	149	0	100%	757		521		596		402		502		555	
12.0	n	Thallium	149	39	74%	0.002375	ND	0.002005	ND	7.3		4.64		6.65		7.01	
5800	n	Vanadium	149	2	99%	51.1		48.7		4.35		52.2		33.3		51.5	
--		Zinc	149	0	100%	760		291		10300		2440		1610		6290	
--		Phosphate, Total (as P)	149	0	100%	703		612		1520		750		734		982	

Table F-4b(3). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-ER-7J-0		OU3-0-SO-FT-1B-0		OU3-0-SO-FT-1C-0		OU3-0-SO-FT-2B-0		OU3-0-SO-FT-2C-0		OU3-0-SO-FT-3B-0		OU3-0-SO-FT-3C-0		OU3-0-SO-FT-3D-0		OU3-0-SO-FT-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/10/2015		9/28/2015		9/25/2015		9/28/2015		9/25/2015		10/5/2015		9/25/2015		9/25/2015		9/28/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	4110		30200		13300		22100		5620		21700		4690		38700		15300	
470	n	Antimony	13.4		53		373		62.3		244		**924**		253		190		48.9	
3.0	cR	Arsenic	**23.3**		**47.5**		**371**		**41**		**231**		**372**		**207**		**67.1**		**94.4**	
220000	nm	Barium	147		244		136		252		61.5		211		83.5		417		411	
2300	n	Beryllium	0.00326	ND	0.003325	ND	0.0023	ND	0.00306	ND	0.002385	ND	0.003105	ND	0.002385	ND	0.00263	ND	0.00635	ND
980	n	Cadmium	1.66		17.5		161		13.7		151		77.2		135		47.6		11.5	
--		Calcium	176000		11100		54300		9950		81200		8740		81200		7700		27500	
1800000	nm	Chromium	1.33	ND	37.9		34.2		32.3		31.7		26.1		59.3		41.1		24.5	
350	n	Cobalt	6.07		11.8		9.01		8.39		15.8		12		11		14.5		16.8	
47000	n	Copper	27.8		131		493		124		430		1230		350		256		118	
820000	nm	Iron	10600		26400		35600		22500		63100		20900		46700		26800		26400	
800	L	Lead	128		**907**		**9440**		**1230**		**8030**		**12200**		**5050**		**1420**		**1160**	
--		Magnesium	3480		7540		17600		5260		23400		4660		20800		7110		6480	
26000	n	Manganese	5940		1480		3130		862		2390		3000		2150		286		1790	
350	n	Mercury	0.139		14.9		6.94		6.49		1.76		167		2.34		40.1		2.74	
22000	n	Nickel	1.195	ND	1.22	ND	0.845	ND	1.125	ND	0.945	ND	1.14	ND	0.875	ND	21.2		2.335	ND
--		Potassium	1430		6880		3720		6180		2550		3690		2270		8550		3440	
5800	n	Selenium	0.2985	ND	0.3045	ND	8.76		0.28	ND	14.3		0.284	ND	10.9		0.241	ND	0.58	ND
5800	n	Silver	0.01225	ND	8.3		77.2		7.61		31.8		75.7		28.3		10.8		7.05	
--		Sodium	420		1350		234		448		193		655		137		915		2930	
12.0	n	Thallium	0.002765	ND	0.00282	ND	5.42		0.002595	ND	4.58		0.002635	ND	3.56		0.002235	ND	0.0054	ND
5800	n	Vanadium	5.69		55.1		16.8		39.6		1.62		37.9		3.41		62.3		24.1	
--		Zinc	271		1430		30100		1580		25200		11600		21900		1970		1540	
--		Phosphate, Total (as P)	428		1710		1770		1040		2050		1530		1770		1030		1300	

Table F-4b(3). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-FT-4B-0		OU3-0-SO-FT-4C-0		OU3-0-SO-FT-5C-0		OU3-0-SO-FT-6B-0		OU3-0-SO-FT-6D-0		OU3-0-SO-MRL-15D-0		OU3-0-SO-MRL-15E-0		OU3-0-SO-MRL-16D-0		OU3-0-SO-MRL-16F-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/25/2015		9/25/2015		9/25/2015		9/24/2015		9/25/2015		9/29/2015		9/29/2015		9/30/2015		9/28/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	9140		4640		5640		52200		23900		34600		27100		40200		19400	
470	n	Antimony	355		183		373		152		102		4.47		**1460**		4.27		**1800**	
3.0	cR	Arsenic	**431**		**155**		**463**		**129**		**34.2**		**16.1**		**1250**		**22.4**		**1130**	
220000	nm	Barium	633		80.2		115		347		440		288		206		275		215	
2300	n	Beryllium	0.00306	ND	0.00258	ND	0.00244	ND	0	ND	0.004375	ND	0.002635	ND	0.00411	ND	0.00258	ND	0.00291	ND
980	n	Cadmium	34		48.8		120		89		18.3		1.51		99		1.96		77.6	
--		Calcium	41600		96700		53200		14300		11200		7520		54000		5290		10600	
1800000	nm	Chromium	42.7		32.3		32		74		50.8		41.5		143		48.3		25.3	
350	n	Cobalt	7.13		6.34		15		10		8.1		10.9		3.31		17.6		9.41	
47000	n	Copper	408		263		838		589		224		34		1920		36.8		3140	
820000	nm	Iron	42700		18900		60100		33700		18400		25800		23200		29100		27100	
800	L	Lead	**7940**		**4390**		**9750**		**6070**		**2580**		113		**33000**		191		**40700**	
--		Magnesium	14600		24400		16300		12700		7850		7080		19900		6510		3590	
26000	n	Manganese	1850		2440		2380		796		798		1060		2280		1310		2740	
350	n	Mercury	4.82		2.02		8.57		16		2.47		0.304		33		0.269		**2950**	
22000	n	Nickel	0.98	ND	0.89	ND	0.895	ND	29		1.285	ND	19.9		1.51	ND	24.7		1.07	ND
--		Potassium	3230		2300		2390		10100		6430		9380		9710		9490		3230	
5800	n	Selenium	22.9		0.2365	ND	21.8		12		0.401	ND	0.2415	ND	20.6		0.236	ND	12.3	
5800	n	Silver	46		36.5		55.8		46		14.3		0.0099	ND	175		0.0097	ND	18.5	
--		Sodium	265		164		235		558		659		315		390		266		1120	
12.0	n	Thallium	7.62		0.00219	ND	7.76		6		0.003715	ND	0.002235	ND	10.1		0.00219	ND	0.00247	ND
5800	n	Vanadium	12.3		7.72		0.07	ND	84		46.3		63.6		67.9		63.4		39.2	
--		Zinc	4900		12800		22300		10000		2780		192		22900		336		26800	
--		Phosphate, Total (as P)	1680		1610		1690		1410		1530		1320		4350		746		2240	

Table F-4b(3). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-MRL-16H-0		OU3-0-SO-MRL-18F-0		OU3-0-SO-MRU-10C-0		OU3-0-SO-MRU-11C-0		OU3-0-SO-MRU-12C-0		OU3-0-SO-MRU-13C-0		OU3-0-SO-MRU-1C-0		OU3-0-SO-MRU-1D-0	
		Depth	0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		Dups ave OU3		OU3	
		Sample date	9/28/2015		9/29/2015		10/1/2015		10/1/2015		10/1/2015		10/1/2015		11/10/2014		11/12/2014	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	35800		33700		15000		2.08		7270		41100		17160		21100	
470	n	Antimony	4.33		188		290		**663**		374		290		165.5		24.3	
3.0	cR	Arsenic	**14.4**		**75.5**		**171**		**793**		**568**		**182**		**192**		**24.1**	
220000	nm	Barium	269		292		303		654		68.4		375		291		186	
2300	n	Beryllium	0.002655	ND	0.00381	ND	0.002705	ND	0.003065	ND	0.00242	ND	0.00266	ND	0.0030475	ND	0.00298	ND
980	n	Cadmium	2.26		91.4		50.5		148		70.4		44.6		59.1		7.1	
--		Calcium	11900		10500		12600		5.43		42600		14400		18450		15000	
1800000	nm	Chromium	38.3		45.6		18.6		98.6		29.8		76.3		47.15		50.6	
350	n	Cobalt	9.26		12.4		6.03		3.93		4.11		9.91		14.9		11	
47000	n	Copper	38.9		451		561		854		541		909		334.5		74.7	
820000	nm	Iron	25200		26300		19600		4.09		15300		28700		35650		20400	
800	L	Lead	88.2		**1790**		**7060**		**14000**		**8950**		**8930**		**4005**		660	
--		Magnesium	6510		7070		3150		2.51		10400		13700		9690		8400	
26000	n	Manganese	541		763		1360		2790		1950		1510		2570		1140	
350	n	Mercury	0.124		58.7		8.57		16.4		5.28		36.4		2.7535		1.53	
22000	n	Nickel	19.6		1.4	ND	0.99	ND	1.125	ND	0.89	ND	25.5		13.2725		1.095	ND
--		Potassium	8580		7040		2350		0.884		2120		7240		5825		7640	
5800	n	Selenium	0.243	ND	0.349	ND	0.2475	ND	18.9		8.55		10.4		0.27925	ND	0.273	ND
5800	n	Silver	0.01	ND	17		26.4		85.6		45.2		77.6		30.55		4.59	
--		Sodium	427		593		559		0.0215		276		671		375		705	
12.0	n	Thallium	0.00225	ND	0.003235	ND	0.002295	ND	**21.6**		8.51		8.31		2.211325		0.00253	ND
5800	n	Vanadium	54.3		54		26.5		0.00277		21.8		72.4		44.15		48.9	
--		Zinc	286		3280		12000		15300		19000		9500		5635		1230	
--		Phosphate, Total (as P)	1430		1340		1030		3090		1530		1470		1990		1720	

Table F-4b(3). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-MRU-2B-0		OU3-0-SO-MRU-2C-0		OU3-0-SO-MRU-2D-0		OU3-0-SO-MRU-3C-0		OU3-0-SO-MRU-3D-0		OU3-0-SO-MRU-4C-0		OU3-0-SO-MRU-4D-0		OU3-0-SO-MRU-5C-0		OU3-0-SO-MRU-5D-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		Dups ave OU3		OU3		OU3	
		Sample date	11/10/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/11/2014		11/12/2014	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	20900		26800		29000		31600		19600		17000		28450		26200		26300	
470	n	Antimony	100		40.1		0.1675	ND	24.7		0.19	ND	0.1725	ND	8.1		61.4		13.2	
3.0	cR	Arsenic	**80**		**51.5**		**7.23**		**37.5**		**7.5**		**9.02**		**15.35**		**151**		**19.2**	
220000	nm	Barium	225		220		218		328		167		141		257.5		318		258	
2300	n	Beryllium	0.003165	ND	0.00298	ND	0.002745	ND	0.003015	ND	0.00311	ND	0.00282	ND	0.003135	ND	0.003305	ND	0.002925	ND
980	n	Cadmium	13		31.6		2.4		9.5		3.3		1.21		2.665		65.1		4.88	
--		Calcium	12100		14400		8660		6690		14200		5800		5525		33700		5600	
1800000	nm	Chromium	62.7		43.8		37.1		36		66.8		37.4		35.45		47.6		38.4	
350	n	Cobalt	7.04		10.5		15.9		12.3		28.8		5.65		11		21.9		10.9	
47000	n	Copper	160		144		31.4		111		58.9		32.4		35.15		216		46	
820000	nm	Iron	18000		21200		30300		28100		22700		13200		25750		27200		22700	
800	L	Lead	**2460**		**1250**		42.6		**868**		68.2		27.7		185		**2040**		388	
--		Magnesium	4120		7440		6620		6920		8710		3960		6270		10100		7220	
26000	n	Manganese	925		1490		776		879		576		336		913		15600		1170	
350	n	Mercury	3.98		2.77		0.00142	ND	1.01		0.0804		0.00132	ND	0.295		3.88		0.615	
22000	n	Nickel	1.165	ND	1.095	ND	1.01	ND	1.105	ND	24.8		1.035	ND	11.4425		40.4		21.2	
--		Potassium	5640		6010		5430		7930		4380		4120		8775		5640		8920	
5800	n	Selenium	0.29	ND	0.273	ND	0.2515	ND	0.276	ND	0.2845	ND	0.2585	ND	0.28725	ND	0.303	ND	0.268	ND
5800	n	Silver	10.4		8.87		0.01035	ND	3.88		0.0117	ND	0.0106	ND	0.011825	ND	16.6		1.91	
--		Sodium	417		477		2190		359		2080		457		385.5		493		277	
12.0	n	Thallium	0.002685	ND	0.00253	ND	0.00233	ND	0.00256	ND	0.00264	ND	0.002395	ND	0.0026625	ND	0.002805	ND	0.002485	ND
5800	n	Vanadium	39.8		50.3		83.7		62.3		56.4		33.8		64.35		46.1		61.2	
--		Zinc	1900		2990		166		1250		260		59.7		355.5		12500		708	
--		Phosphate, Total (as P)	3760		1800		927		1260		847		1410		1255		2010		1640	

Table F-4b(3). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-MRU-6C-0		OU3-0-SO-MRU-7C-0		OU3-0-SO-MRU-7D-0		OU3-0-SO-MRU-8C-0		OU3-0-SO-NR-11J-0		OU3-0-SO-NR-13L-0		OU3-0-SO-NR-13M-0		OU3-0-SO-NR-14M-0		OU3-0-SO-NR-14P-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	11/11/2014		9/30/2015		10/1/2015		10/1/2015		9/21/2015		9/18/2015		9/18/2015		9/18/2015		9/21/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	30300		23200		46700		26100		26700		33300		7510		7060		26400	
470	n	Antimony	39.7		294		6.75		30		**2290**		12		**600**		465		38.8	
3.0	cR	Arsenic	**41.1**		**246**		**15.7**		**55.2**		**846**		**19**		**568**		**384**		**33.7**	
220000	nm	Barium	191		245		369		364		320		393		149		192		175	
2300	n	Beryllium	0.00299	ND	0.00233	ND	0.002515	ND	0.00261	ND	0.002875	ND	0.003315	ND	0.00276	ND	0.00252	ND	0.00298	ND
980	n	Cadmium	32.3		37.6		2.18		5.83		49.7		4.51		118		51.8		30.7	
--		Calcium	24500		19300		15100		21900		2580		10800		38400		26900		7930	
1800000	nm	Chromium	60.2		55.7		47		66.6		14.8		43.3		72.8		40.5		29.1	
350	n	Cobalt	7.95		11.5		14.3		9.02		5.11		7.55		5.63		5.99		7.2	
47000	n	Copper	144		505		26.3		93.3		2200		44.2		950		766		86	
820000	nm	Iron	21600		34800		32200		26000		11100		25700		21200		22100		19100	
800	L	Lead	**1120**		**7060**		184		**837**		**22200**		141		**15800**		**7920**		593	
--		Magnesium	8770		8870		16800		5050		1380		7940		10100		8100		5790	
26000	n	Manganese	1360		2200		1590		1270		874		252		2750		1560		448	
350	n	Mercury	1.48		15.9		0.344		2.64		**676**		0.274		17.3		26.9		0.999	
22000	n	Nickel	29.8		20.6		26.1		20.6		25.2		23.1		1.015	ND	0.925	ND	1.095	ND
--		Potassium	6520		5080		16800		6990		1800		7210		2310		1850		7460	
5800	n	Selenium	0.274	ND	8.14		0.2305	ND	0.239	ND	0.263	ND	0.3035	ND	0.2525	ND	10.3		0.273	ND
5800	n	Silver	9.2		47.2		0.00945	ND	5.18		230		0.01245	ND	74.2		42		4.25	
--		Sodium	912		276		484		612		2600		934		301		329		586	
12.0	n	Thallium	0.00254	ND	3.56		0.002135	ND	0.002215	ND	0.00244	ND	0.00281	ND	5.54		3.75		0.00253	ND
5800	n	Vanadium	51.5		67.1		76.1		53		30.7		50		14.7		13.2		37.6	
--		Zinc	5060		8100		339		967		14300		788		22100		12800		4290	
--		Phosphate, Total (as P)	3620		1740		1000		5540		909		859		1910		1740		650	

Table F-4b(3). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-NR-15M-0		OU3-0-SO-NR-15P-0		OU3-0-SO-NR-3F-0		OU3-0-SO-NR-7I-0		OU3-0-SO-NR-9J-0		OU3-0-SO-WR-1B-0		OU3-0-SO-WR-1F-0		OU3-0-SO-WR-2B-0		OU3-0-SO-WR-2F-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/17/2015		9/21/2015		9/22/2015		9/21/2015		9/21/2015		8/4/2015		7/31/2015		8/4/2015		7/31/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	9180		5780		32900		33300		6170		4670		7670		6090		13100	
470	n	Antimony	**805**		343		106		26.6		271		172		253		328		308	
3.0	cR	Arsenic	**701**		**307**		**96**		**26.6**		**297**		**189**		**287**		**340**		**264**	
220000	nm	Barium	174		160		282		365		259		155		227		237		186	
2300	n	Beryllium	0.00236	ND	0.002705	ND	0	ND	0.00285	ND	0.00296	ND	0.00258	ND	0.00296	ND	0.002325	ND	0.003325	ND
980	n	Cadmium	100		40.3		31		9.75		76.4		72.6		78.7		97.4		92.1	
--		Calcium	33000		27000		10100		10500		43900		107000		44900		50700		104000	
1800000	nm	Chromium	34.5		23.2		45		45.3		30.1		16.2		28.3		23.5		33.9	
350	n	Cobalt	6.38		7.99		8		10		52.4		5.56		8.36		11.8		8.47	
47000	n	Copper	1210		476		205		70.2		390		227		398		474		586	
820000	nm	Iron	20300		32900		25800		25200		122000		22300		40100		28800		19200	
800	L	Lead	**16300**		**7000**		**3060**		597		**6630**		**3470**		**5550**		**6370**		**5750**	
--		Magnesium	10300		8770		7880		9130		8600		10700		14100		10900		11400	
26000	n	Manganese	2630		1450		1070		380		1600		1710		2490		2690		1230	
350	n	Mercury	27.6		8.88		17		3.11		11.1		2.24		3.93		5.75		13.3	
22000	n	Nickel	0.865	ND	0.995	ND	1	ND	21.5		1.09	ND	0.95	ND	1.085	ND	20.9		1.22	ND
--		Potassium	2690		1710		8290		8010		1530		1510		2780		1820		4450	
5800	n	Selenium	10.2		13.4		0	ND	0.261	ND	30.9		8.9		16		13.3		0.3045	ND
5800	n	Silver	96		29.6		11		2.62		39		16.1		29.1		28.3		34	
--		Sodium	382		213		1190		1380		258		219		181		388		5960	
12.0	n	Thallium	5.13		3.75		0	ND	0.00242	ND	0.002515	ND	**48.1**		**15.2**		**20.6**		**31.8**	
5800	n	Vanadium	20.4		5.91		47		45.8		0.085	ND	6.41		5.45		9.62		19.6	
--		Zinc	20900		10100		5240		975		12400		15200		14600		34700		26000	
--		Phosphate, Total (as P)	1560		1310		942		1970		2700		1520		1550		1460		971	

Table F-4b(3). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-WR-5B-0		OU3-0-SO-WR-5F-0		OU3-0-TL-MR2	
		Depth	0		0		0001	
					Dups ave			
		Operable Unit	OU3		OU3		OU3	
		Sample date	8/4/2015		7/31/2015		3/2/2015	
		Habitat	Floodplain		Floodplain		Floodplain	
1100000	nm	Aluminum	9240		4520		14000	
470	n	Antimony	207		192		**519**	
3.0	cR	Arsenic	**191**		**418**		**442**	
220000	nm	Barium	180		54.85		143	
2300	n	Beryllium	0.00288	ND	0.00254	ND	0.002525	ND
980	n	Cadmium	123		88.85		58.9	
--		Calcium	142000		49450		40700	
1800000	nm	Chromium	21.8		28.8		33.9	
350	n	Cobalt	9.87		3.65		6.57	
47000	n	Copper	345		354.5		823	
820000	nm	Iron	15700		16500		18000	
800	L	Lead	**5040**		**3625**		**11100**	
--		Magnesium	9180		17750		6040	
26000	n	Manganese	1340		2345		2070	
350	n	Mercury	5.88		2.8		22.7	
22000	n	Nickel	1.055	ND	0.9325	ND	0.925	ND
--		Potassium	2580		1525		3140	
5800	n	Selenium	0.2635	ND	0.2325	ND	0.2315	ND
5800	n	Silver	25.3		22		54.7	
--		Sodium	1180		252.5		264	
12.0	n	Thallium	**14.5**		8.98		0.00268	ND
5800	n	Vanadium	16.8		6.44		34.6	
--		Zinc	26500		17950		13700	
--		Phosphate, Total (as P)	1220		1305		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
SO = Soil
TL = Tailings
WR = OU3 P.C. West Reach

Table F-4b(4). Screening results for OU3 Upland soil samples compared with EPA industrial soil screening values

		Sample ID				OU3-0-SO-ER-11D-0		OU3-0-SO-ER-11S-0		OU3-0-SO-ER-4B-0		OU3-0-SO-ER-4Q-0		OU3-0-SO-ER-6A-0		OU3-0-SO-ER-7P-0		OU3-0-SO-ER-8A-0	
		Depth				0		0		0		0		0		0		0	
		Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3		OU3	
Industrial Soil		Sample date				9/14/2015		9/11/2015		9/14/2015		8/5/2015		9/14/2015		9/10/2015		9/14/2015	
(mg/kg)		Habitat	**N**	**count of NDs**	**% detected**	Upland		Upland		Upland		Upland		Upland		Upland		Upland	
1100000	nm	Aluminum	47	0	100%	35000		33700		31700		26600		30400		30100		26800	
470	n	Antimony	47	5	89%	39.7		7.7		62.8		20.4		4.2		116		8.71	
3.0	cR	Arsenic	47	0	100%	**42.3**		**16.3**		**80.5**		**41.2**		**10.9**		**103**		**11.1**	
220000	nm	Barium	47	0	100%	225		189		226		344		198		228		167	
2300	n	Beryllium	47	46	2%	0.00246	ND	0.002575	ND	0.00259	ND	0.002435	ND	0.00224	ND	0.002555	ND	0.002675	ND
980	n	Cadmium	47	1	98%	8.79		1.77		10.7		5.15		2.26		13.6		4.2	
--		Calcium	47	0	100%	9740		7040		7910		6680		6550		7540		26300	
1800000	nm	Chromium	47	0	100%	54.5		34.7		39.1		37.1		29.8		40.5		30.7	
350	n	Cobalt	47	0	100%	11.1		8.03		8.91		13		9.31		7.98		7.24	
47000	n	Copper	47	1	98%	109		30.7		135		78.6		28.1		193		34.1	
820000	nm	Iron	47	0	100%	32800		24800		24300		22800		26900		23200		22300	
800	L	Lead	47	0	100%	**1030**		91.6		**1520**		642		67.5		**2500**		176	
--		Magnesium	47	0	100%	7520		7190		6220		5540		5550		6640		6730	
26000	n	Manganese	47	0	100%	1140		488		894		1180		811		760		429	
350	n	Mercury	47	1	98%	1.51		0.122		0.911		0.405		0.118		2.04		0.34	
22000	n	Nickel	47	22	53%	18.4		0.945	ND	0.95	ND	18.5		0.82	ND	0.94	ND	0.98	ND
--		Potassium	47	0	100%	7910		7160		6890		6460		7410		7900		5660	
5800	n	Selenium	47	47	0%	0.2255	ND	0.236	ND	0.237	ND	0.223	ND	0.205	ND	0.234	ND	0.245	ND
5800	n	Silver	47	16	66%	8.19		0.0097	ND	13.7		4.13		0.00845	ND	19.9		1.78	
--		Sodium	47	0	100%	565		330		419		432		508		586		368	
12.0	n	Thallium	47	46	2%	6.48		0.002185	ND	0.0022	ND	0.002065	ND	0.0019	ND	0.00217	ND	0.00227	ND
5800	n	Vanadium	47	0	100%	63.7		58.7		59.6		55.4		52.6		46		52.9	
--		Zinc	47	0	100%	1870		166		1540		661		286		2270		659	
--		Phosphate, Total (as P)	47	0	100%	892		517		579		565		596		973		711	

Table F-4b(4). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-FT-4E-0		OU3-0-SO-FT-5E-0		OU3-0-SO-MRL-14G-0		OU3-0-SO-MRL-14H-0		OU3-0-SO-MRL-14I-0		OU3-0-SO-MRL-14J-0		OU3-0-SO-MRL-15G-0		OU3-0-SO-MRL-15H-0		OU3-0-SO-MRL-15I-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/25/2015		9/25/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
1100000	nm	Aluminum	32500		32000		32500		31300		36000		28000		30000		35000		33200	
470	n	Antimony	13.1		13.5		21.7		9.51		40.7		5.48		3.9		7.87		51.5	
3.0	cR	Arsenic	**20**		**19.2**		**24.2**		**24.5**		**43.4**		**16.4**		**12.7**		**21.9**		**62**	
220000	nm	Barium	327		219		200		220		195		278		204		238		237	
2300	n	Beryllium	0.00306	ND	0.00274	ND	0.00284	ND	0.00273	ND	0.00335	ND	0.00261	ND	0.002805	ND	0.00256	ND	0.00316	ND
980	n	Cadmium	3.26		9.86		5.44		3.3		8.24		1.88		1.64		3.51		9.64	
--		Calcium	8590		6040		9880		8790		43800		5820		7350		8170		9420	
1800000	nm	Chromium	41.6		33.9		39.6		39.1		72.5		36		69.9		39.7		45	
350	n	Cobalt	7.8		8.52		7.44		9.4		10.1		11.8		7.73		9.1		12.4	
47000	n	Copper	59.9		55.1		66.5		44.2		116		36.6		31.8		41.9		126	
820000	nm	Iron	22700		24100		24300		24000		24800		24400		22300		25400		23800	
800	L	Lead	375		288		459		213		**1290**		166		83.1		146		**1210**	
--		Magnesium	7170		5690		6940		6840		9380		4950		6050		6560		6830	
26000	n	Manganese	315		558		410		484		759		991		252		706		1960	
350	n	Mercury	2.03		1.54		0.651		0.352		2.49		0.154		0.154		0.291		1.81	
22000	n	Nickel	1.125	ND	1.005	ND	1.045	ND	18.9		33.6		18.2		29.9		19		22.9	
--		Potassium	8010		8070		8240		7250		7600		6950		7240		8320		7260	
5800	n	Selenium	0.28	ND	0.251	ND	0.26	ND	0.25	ND	0.307	ND	0.239	ND	0.257	ND	0.2345	ND	0.2895	ND
5800	n	Silver	2.14		2.19		4.44		1.73		11.3		0.0098	ND	0.01055	ND	1.33		9.07	
--		Sodium	445		347		376		352		434		390		312		406		591	
12.0	n	Thallium	0.002595	ND	0.002325	ND	0.00241	ND	0.002315	ND	0.002845	ND	0.002215	ND	0.00238	ND	0.002175	ND	0.00268	ND
5800	n	Vanadium	61.7		57.6		57.8		55.1		65.7		59.1		53.6		60.8		65.3	
--		Zinc	307		589		1120		522		2170		233		203		426		1660	
--		Phosphate, Total (as P)	1240		1190		1200		1090		843		880		1130		770		874	

Table F-4b(4). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-MRL-15J-0		OU3-0-SO-MRL-15K-0		OU3-0-SO-MRL-16G-0		OU3-0-SO-MRL-16I-0		OU3-0-SO-MRL-16J-0		OU3-0-SO-MRL-16K-0		OU3-0-SO-MRL-17G-0		OU3-0-SO-MRL-17H-0		OU3-0-SO-MRL-18G-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/29/2015		9/29/2015		9/28/2015		9/28/2015		9/28/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
1100000	nm	Aluminum	40800		29000		33700		36000		35500		38900		33000		35400		34500	
470	n	Antimony	244		0.165	ND	12.9		37.7		16.8		77.3		4.09		4.12		4.1	
3.0	cR	Arsenic	**223**		**11**		**18.8**		**41.8**		**25.1**		**75.1**		**17.1**		**18**		**19.3**	
220000	nm	Barium	197		286		216		197		241		335		201		267		332	
2300	n	Beryllium	0.003405	ND	0.002705	ND	0.0027	ND	0.002825	ND	0.0027	ND	0.002985	ND	0.002775	ND	0.0027	ND	0.00265	ND
980	n	Cadmium	27.5		1.42		2.33		6.03		4.32		12.2		2.23		1.63		1.82	
--		Calcium	13900		5900		8400		7790		7500		18100		10700		6820		8060	
1800000	nm	Chromium	57.7		46.2		34.2		39.7		41		42.9		33.6		33.9		42.9	
350	n	Cobalt	8.14		11.9		9.83		8.31		8.48		12.3		9.42		12.6		11.3	
47000	n	Copper	522		34.4		48.9		94.9		54		165		34		34.4		45.9	
820000	nm	Iron	30100		24900		23700		24900		27400		27400		24700		28700		28300	
800	L	Lead	**6640**		94.3		209		**1010**		256		**1710**		83.8		83.9		109	
--		Magnesium	10800		5210		6290		6940		6250		8370		6200		5760		7010	
26000	n	Manganese	684		1020		657		424		430		1550		556		921		1090	
350	n	Mercury	11.3		0.0952		0.235		1.03		0.373		3.2		0.141		0.122		0.231	
22000	n	Nickel	1.25	ND	23.4		18.4		19.1		19.3		21.6		1.02	ND	21.7		23	
--		Potassium	9330		8090		8060		8270		7440		8540		7140		6890		8940	
5800	n	Selenium	0.312	ND	0.2475	ND	0.2475	ND	0.259	ND	0.247	ND	0.2735	ND	0.254	ND	0.247	ND	0.2425	ND
5800	n	Silver	54.8		0.0102	ND	1.6		7.26		2.24		15		0.01045	ND	0.01015	ND	0.00995	ND
--		Sodium	571		527		353		339		488		460		337		271		483	
12.0	n	Thallium	0.00289	ND	0.002295	ND	0.00229	ND	0.0024	ND	0.00229	ND	0.002535	ND	0.002355	ND	0.00229	ND	0.00225	ND
5800	n	Vanadium	76.7		58.5		47.3		52.4		61.7		77.4		67.5		71.9		65.6	
--		Zinc	7800		148		407		1330		622		2610		341		186		245	
--		Phosphate, Total (as P)	1520		975		1740		816		567		1080		1020		1090		1450	

Table F-4b(4). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-MRL-19G-0		OU3-0-SO-MRU-10B-0		OU3-0-SO-MRU-12B-0		OU3-0-SO-MRU-12E-0		OU3-0-SO-MRU-13B-0		OU3-0-SO-MRU-1B-0		OU3-0-SO-MRU-3A-0		OU3-0-SO-MRU-3B-0		OU3-0-SO-MRU-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/29/2015		9/30/2015		9/30/2015		10/1/2015		9/30/2015		11/10/2014		11/10/2014		11/10/2014		11/10/2014	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
1100000	nm	Aluminum	40200		27100		26600		28600		37600		18300		28100		24200		30000	
470	n	Antimony	0.16	ND	12.9		22.1		6.68		24		37.3		29		112		8.16	
3.0	cR	Arsenic	**19.9**		**22.6**		**39.3**		**22**		**37.5**		**42**		**33.9**		**98.7**		**16.8**	
220000	nm	Barium	306		331		318		289		460		200		261		302		253	
2300	n	Beryllium	0.002615	ND	0.002715	ND	0.00294	ND	0.003025	ND	0.00283	ND	0.003125	ND	0.003235	ND	0.003105	ND	0.003115	ND
980	n	Cadmium	1.8		4.01		11		2.95		4.53		10.9		6.67		17.4		2.94	
--		Calcium	6760		6630		15100		12000		5630		10700		15200		13100		21400	
1800000	nm	Chromium	40.1		32.6		45.7		131		30.8		72.1		91		73.7		74.5	
350	n	Cobalt	14.2		13.3		8.71		9.56		11		6.9		8.54		10.6		10.8	
47000	n	Copper	34.8		60		294		39.5		62		89.3		97.3		210		76.1	
820000	nm	Iron	29100		27500		36400		22300		28600		15800		21100		20600		26300	
800	L	Lead	83.2		247		**925**		191		702		**1170**		**914**		**3040**		213	
--		Magnesium	6690		4520		6120		8150		4480		3480		5630		4620		6020	
26000	n	Manganese	1310		838		662		1230		1070		788		1090		1850		1590	
350	n	Mercury	0.0913		0.712		0.709		0.211		1.33		0.712		1.15		0.526		0.306	
22000	n	Nickel	22.2		19.8		1.08	ND	26.8		1.04	ND	1.15	ND	1.19	ND	22.8		23.9	
--		Potassium	9550		6600		6550		8800		8580		5060		8660		6640		8930	
5800	n	Selenium	0.2395	ND	0.2485	ND	0.2695	ND	0.277	ND	0.2595	ND	0.2865	ND	0.2965	ND	0.2845	ND	0.2855	ND
5800	n	Silver	0.00985	ND	2.52		5.11		0.0114	ND	2.96		6.53		6.93		13.9		0.0117	ND
--		Sodium	388		294		2310		385		224		352		452		416		424	
12.0	n	Thallium	0.00222	ND	0.002305	ND	0.002495	ND	0.002565	ND	0.0024	ND	0.002655	ND	0.002745	ND	0.002635	ND	0.002645	ND
5800	n	Vanadium	69.6		68.3		46.5		50		62.8		37.9		51.4		49.3		55.1	
--		Zinc	192		861		1940		328		993		1380		994		2260		424	
--		Phosphate, Total (as P)	1030		1240		625		3340		1100		4020		5460		4170		68400	

Table F-4b(4). (cont.)

Industrial Soil (mg/kg)		Sample ID	OU3-0-SO-MRU-4B-0		OU3-0-SO-MRU-5B-0		OU3-0-SO-MRU-6A-0		OU3-0-SO-MRU-6B-0		OU3-0-SO-MRU-6D-0		OU3-0-SO-MRU-7B-0		OU3-0-SO-MRU-8B-0		OU3-0-SO-MRU-8D-0		OU3-0-SO-MRU-9B-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	11/10/2014		11/11/2014		11/11/2014		11/11/2014		11/12/2014		9/30/2015		9/30/2015		10/1/2015		9/30/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
1100000	nm	Aluminum	17100		12700		20900		14900		22100		17700		25400		35400		29100	
470	n	Antimony	61.7		23.4		14.3		0.2435	ND	16.7		28.5		213		8.23		21.5	
3.0	cR	Arsenic	**42.8**		**26.6**		**22**		**5.55**		**24.3**		**31.7**		**244**		**18.3**		**34.3**	
220000	nm	Barium	228		181		256		164		207		154		269		228		221	
2300	n	Beryllium	0.00314	ND	2.28		0.003235	ND	0.003985	ND	0.00284	ND	0.00243	ND	0.003255	ND	0.003265	ND	0.00262	ND
980	n	Cadmium	14.1		9.99		3.47		0.0113	ND	7.88		5.59		41.6		2.68		5.05	
--		Calcium	17300		13900		27600		16300		11200		64300		20100		13500		5800	
1800000	nm	Chromium	40.1		17.6		67.7		28.8		29.4		24.3		69.4		43.7		41	
350	n	Cobalt	6.11		3.56		7.88		5.05		9.16		5.87		14.8		14.4		15.7	
47000	n	Copper	152		74.4		37		1.025	ND	48		64.1		473		35.9		51.8	
820000	nm	Iron	14100		11600		18800		12100		19400		16600		33200		30700		32500	
800	L	Lead	**1600**		744		371		21.4		511		**906**		**6610**		217		495	
--		Magnesium	4010		2750		6710		7610		8320		5550		11700		11100		6200	
26000	n	Manganese	984		269		956		354		1480		2810		4600		1060		965	
350	n	Mercury	2.54		0.783		0.606		0.00175	ND	0.815		0.993		17.7		0.284		1.02	
22000	n	Nickel	1.155	ND	1.235	ND	1.185	ND	1.465	ND	1.045	ND	0.895	ND	29.2		24.7		23.4	
--		Potassium	5740		2190		5940		3360		7360		4750		5830		5010		5070	
5800	n	Selenium	0.288	ND	0.308	ND	0.296	ND	0.365	ND	0.2605	ND	0.2225	ND	0.298	ND	0.299	ND	0.24	ND
5800	n	Silver	6.9		2.92		0.01215	ND	0.015	ND	2.78		4.42		50.2		0.0123	ND	3.15	
--		Sodium	330		697		425		212		242		295		368		747		238	
12.0	n	Thallium	0.002665	ND	0.00285	ND	0.002745	ND	0.00338	ND	0.00241	ND	0.002065	ND	0.00276	ND	0.00277	ND	0.002225	ND
5800	n	Vanadium	33.6		20.7		43.5		30.9		49		41		78.6		68.2		79.6	
--		Zinc	1150		1610		468		67.4		1130		908		9290		402		971	
--		Phosphate, Total (as P)	1900		1200		2680		436		1010		2230		1710		1240		1290	

Table F-4b(4). (cont.)

		Sample ID	OU3-0-SO-NR-12Q-0		OU3-0-SO-NR-2C-0		OU3-0-SO-NR-2F-0		OU3-0-SO-NR-4J-0	
		Depth	0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3	
Industrial Soil		Sample date	10/5/2015		9/22/2015		9/22/2015		9/22/2015	
(mg/kg)		Habitat	Upland		Upland		Upland		Upland	
1100000	nm	Aluminum	17300		20900		24400		30500	
470	n	Antimony	0.164	ND	7.28		7.25		0.1445	ND
3.0	cR	Arsenic	**8.36**		**10.9**		**13.9**		**47.2**	
220000	nm	Barium	105		348		241		234	
2300	n	Beryllium	0.002685	ND	0.002525	ND	0.0025	ND	0.00237	ND
980	n	Cadmium	0.833		3.07		2.67		1.18	
--		Calcium	2700		8660		8800		7330	
1800000	nm	Chromium	20.2		32.2		32.3		42.4	
350	n	Cobalt	6.05		10.9		8.13		9.73	
47000	n	Copper	17.1		43		34.7		19.5	
820000	nm	Iron	13100		25200		19700		24500	
800	L	Lead	42.4		251		233		77.4	
--		Magnesium	3110		5270		5850		7550	
26000	n	Manganese	382		706		472		318	
350	n	Mercury	0.162		0.263		0.322		0.0772	
22000	n	Nickel	0.985	ND	17.3		0.92	ND	17.9	
--		Potassium	4800		5050		5740		7030	
5800	n	Selenium	0.246	ND	0.2315	ND	0.229	ND	0.217	ND
5800	n	Silver	0.0101	ND	1.57		1.37		0.0089	ND
--		Sodium	293		1670		459		526	
12.0	n	Thallium	0.00228	ND	0.002145	ND	0.00212	ND	0.00201	ND
5800	n	Vanadium	33.6		60.6		45.1		83.8	
--		Zinc	60.1		333		348		104	
--		Phosphate, Total (as P)	291		1420		983		1060	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
MRU = OU3 Middle Reach Upper
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
SO = Soil
WR = OU3 P.C. West Reach

Table F-4c(1). Screening results for OU2 Floodplain soil samples compared with Protection of Groundwater SSLs

Protection of Groundwater SSLs (mg/kg)		Sample ID	N	count of NDs	% detected	OU2-0-SO-10L-0		OU2-0-SO-12I-0		OU2-0-SO-12L-0		OU2-0-SO-15L-0		OU2-0-SO-15N-0		OU2-0-SO-17L-0		OU2-0-SO-17N-0	
		Depth				0		0		0		0		0		0		0	
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date				9/21/2015		9/17/2015		9/21/2015		9/17/2015		9/16/2015		9/17/2015		9/16/2015	
		Habitat				Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	33	0	100%	27400		18200		7900		3350		6830		**30200**		3580	
0.35	n	Antimony	33	1	97%	**16.7**		**1550**		**874**		**847**		**304**		**11.4**		**413**	
0.0015	c	Arsenic	33	0	100%	**10.5**		**1350**		**649**		**757**		**258**		**23.8**		**406**	
160	n	Barium	33	0	100%	**195**		**227**		**185**		63.8		**236**		**319**		99.4	
19.0	n	Beryllium	33	33	0%	0.00302	ND	0.00249	ND	0.00264	ND	0.00437	ND	0.002865	ND	0.002705	ND	0.0026	ND
--		Cadmium	33	0	100%	15.7		206		79.6		175		37.4		4.08		69	
--		Calcium	33	0	100%	6830		39100		25000		74700		42000		7300		43500	
4.0E+07	n	Chromium	33	2	94%	34.1		123		30		1.785	ND	34.5		39.3		17.7	
0.27	n	Cobalt	33	0	100%	**5.77**		**3.97**		**2.69**		**7.29**		**6.91**		**11.8**		**2.2**	
28.0	n	Copper	33	0	100%	**34.9**		**2450**		**1670**		**252**		**385**		**46.2**		**579**	
350	n	Iron	33	0	100%	**20500**		**24000**		**15300**		**11200**		**31600**		**34800**		**11100**	
--		Lead	33	1	97%	15.2	ND	34400		16900		1830		7680		272		7900	
--		Magnesium	33	0	100%	6220		17700		8680		3610		14300		6140		12000	
28	n	Manganese	33	0	100%	**183**		**3650**		**1730**		**350**		**1670**		**1070**		**2100**	
--	n	Mercury	33	0	100%	0.202		31.3		26		1.88		9.38		0.424		8.23	
26	n	Nickel	33	27	18%	1.11	ND	0.915	ND	0.97	ND	1.605	ND	1.05	ND	18.6		0.955	ND
--		Potassium	33	0	100%	7520		6500		2350		942		2280		6150		1270	
0.52	n	Selenium	33	19	42%	0.2765	ND	**20.5**		**10.2**		0.4	ND	**10.8**		0.248	ND	0.238	ND
0.80	n	Silver	33	5	85%	0.01135	ND	**236**		**120**		**7.02**		**41.3**		**1.6**		**55.2**	
--		Sodium	33	0	100%	1020		473		399		1350		285		944		162	
0.014	n	Thallium	33	14	58%	0.00256	ND	**11.9**		0.00224	ND	**24.9**		**3.98**		0.002295	ND	**5.33**	
86.0	n	Vanadium	33	1	97%	40.3		41.8		18.9		5.9		18.8		40.6		11.4	
370	n	Zinc	33	0	100%	**1370**		**31300**		**20300**		**65600**		**11100**		**427**		**17200**	
--		Phosphate, Total (as P)	33	0	100%	905		3710		1460		419		2050		863		1660	

Table F-4c(1). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU2-0-SO-26V-0		OU2-0-SO-30R-0		OU2-0-SO-30Y-0		OU2-0-SO-34G-0		OU2-0-SO-35V-0		OU2-0-SO-37V-0		OU2-0-SO-39V-0		OU2-0-SO-43T-0		OU2-0-SO-44T-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	9/16/2015		9/15/2015		9/16/2015		8/5/2015		8/5/2015		8/5/2015		8/4/2015		8/4/2015		9/14/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	3370		5600		4610		7530		12000		20000		12800		2940		6960	
0.35	n	Antimony	**132**		**489**		**234**		**63**		**45.2**		**24.8**		**320**		**3.78**		**353**	
0.0015	c	Arsenic	**217**		**335**		**335**		**110**		**206**		**48.7**		**306**		**4.23**		**413**	
160	n	Barium	**161**		119		**184**		159		**196**		**269**		**336**		77.7		**248**	
19.0	n	Beryllium	0.00264	ND	0.00246	ND	0.002595	ND	0.00263	ND	0.00344	ND	0.0025	ND	0.00244	ND	0.002495	ND	0	ND
--		Cadmium	27.3		54		93.1		63.6		17.5		5.52		55.3		3		127	
--		Calcium	38100		27500		57000		41400		24200		27800		15000		117000		48800	
4.0E+07	n	Chromium	20.6		26		25.9		10.9		15		24		22.5		1.02	ND	28	
0.27	n	Cobalt	**2.5**		**2.2**		**8.04**		**12.2**		**14.5**		**8.61**		**27.9**		**1.88**		**9**	
28.0	n	Copper	**125**		**873**		**337**		**126**		**89.7**		**76.7**		**411**		**31.5**		**806**	
350	n	Iron	**16100**		**10400**		**46500**		**11900**		**26100**		**20100**		**20900**		**3340**		**39300**	
--		Lead	2810		13900		6410		605		1110		616		9200		51.6		10600	
--		Magnesium	14900		7660		18500		3480		4670		6790		4000		4650		13300	
28	n	Manganese	**1700**		**1420**		**2460**		**1770**		**2420**		**266**		**3850**		**2820**		**2050**	
--	n	Mercury	1.65		17.7		4.82		0.642		4.79		1.8		23.9		0.298		14	
26	n	Nickel	0.97	ND	0.905	ND	0.955	ND	0.965	ND	1.265	ND	0.92	ND	0.895	ND	0.915	ND	1	ND
--		Potassium	1440		1560		2070		1900		2910		5070		3630		1540		2240	
0.52	n	Selenium	0.2415	ND	0.2255	ND	**15.1**		0.2405	ND	0.315	ND	0.229	ND	**8.57**		0.2285	ND	**10**	
0.80	n	Silver	**17**		**60.6**		**34.2**		**5.58**		**3.92**		**3.48**		**24.7**		0.0094	ND	**50**	
--		Sodium	127		280		278		202		783		587		278		788		400	
0.014	n	Thallium	0.00224	ND	**3.33**		**3.96**		**7.29**		0.00292	ND	0.002125	ND	0.00207	ND	0.002115	ND	**7**	
86.0	n	Vanadium	10.4		11.6		15.2		14.1		17.4		31.8		25.8		5.56		9	
370	n	Zinc	**4430**		**17200**		**15400**		**7970**		**2680**		**995**		**6590**		289		**31800**	
--		Phosphate, Total (as P)	1480		1390		1330		1040		913		721		1320		844		1740	

Table F-4c(1). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU2-0-SO-44V-0		OU2-0-SO-44W-0		OU2-0-SO-45T-0		OU2-0-SO-45V-0		OU2-0-SO-46V-0		OU2-0-SO-47T-0		OU2-0-SO-48S-0		OU2-0-SO-48T-0		OU2-0-SO-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	7/31/2015		7/31/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		9/24/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	20500		10200		11300		6470		5310		9190		7330		6640		**31200**	
0.35	n	Antimony	**570**		**344**		**513**		**224**		**332**		**269**		**267**		**5490**		**12.4**	
0.0015	c	Arsenic	**550**		**442**		**589**		**241**		**743**		**360**		**314**		**7010**		**22.2**	
160	n	Barium	**298**		**224**		**330**		**171**		160		**212**		**196**		**575**		**458**	
19.0	n	Beryllium	0.003105	ND	0.00328	ND	0.0022	ND	0.002365	ND	0	ND	0	ND	0.00284	ND	0.00358	ND	0.00294	ND
--		Cadmium	86.5		180		105		65.4		62		118		101		66.1		3.68	
--		Calcium	41800		44700		69600		50200		40400		25600		52900		14900		6170	
4.0E+07	n	Chromium	65.4		30.3		49.5		33.3		26		29		27.5		20		37.7	
0.27	n	Cobalt	**13.5**		**21.4**		**13.5**		**4.99**		**7**		**9**		**9.9**		**11.3**		**11.5**	
28.0	n	Copper	**1080**		**650**		**845**		**437**		**278**		**494**		**387**		**396**		**48.1**	
350	n	Iron	**33700**		**25800**		**37500**		**21300**		**27500**		**22700**		**28800**		**130000**		**26700**	
--		Lead	9720		4800		11400		5490		4220		5600		5920		3810		271	
--		Magnesium	14600		10300		15800		16200		13900		7060		13700		3440		5670	
28	n	Manganese	**2750**		**3200**		**2280**		**2310**		**2300**		**1010**		**1950**		**1680**		**1070**	
--	n	Mercury	26.5		9.27		10.8		3.27		3		13		3.61		1.57		0.643	
26	n	Nickel	22.6		23.5		0.81	ND	0.87	ND	1	ND	2	ND	1.04	ND	1.315	ND	20.1	
--		Potassium	6030		3250		4330		2830		2210		2410		2740		2310		7710	
0.52	n	Selenium	**14.3**		0.3005	ND	**15.6**		**8.2**		**8**		**20**		**9.49**		0.3275	ND	0.2695	ND
0.80	n	Silver	**72.3**		**41.3**		**81.3**		**26.8**		**22**		**27**		**28.2**		**21.1**		**1.63**	
--		Sodium	387		3430		204		115		119		391		376		335		487	
0.014	n	Thallium	**21.6**		**45.7**		**14.1**		**5.9**		**4**		**23**		**10.3**		**35.4**		0.002495	ND
86.0	n	Vanadium	30.7		14.5		14.3		8.5		3		13		9.21		0.0825	ND	57	
370	n	Zinc	**26600**		**29800**		**18000**		**14600**		**13200**		**19400**		**27900**		**22200**		**515**	
--		Phosphate, Total (as P)	2550		261		1490		1060		1670		3480		1240		519		1020	

Table F-4c(1). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU2-0-SO-50P-0		OU2-0-SO-50Q-0		OU2-0-SO-50T-0		OU2-0-SO-7F-0		OU2-0-SO-8G-0		OU2-0-SO-8I-0		OU2-0-SO-OP1-0		OU2-0-SO-OP2-0	
		Depth	0		0		0		0		0		0		0		0	
			Dups ave															
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	7/29/2015		7/29/2015		7/30/2015		9/17/2015		9/17/2015		9/21/2015		7/29/2015		9/17/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	**30600**		7320		**35800**		8860		9090		5200		11200		27200	
0.35	n	Antimony	**6.6**		**276**		0.1895	ND	**826**		**1270**		**257**		**244**		**8.27**	
0.0015	c	Arsenic	**11.9**		**247**		**11.3**		**1020**		**1060**		**292**		**268**		**16.8**	
160	n	Barium	**312**		**166**		**262**		158		**174**		57.4		**269**		**450**	
19.0	n	Beryllium	0.0030675	ND	0.00306	ND	0.0031	ND	0.002665	ND	0.002455	ND	0.002505	ND	0.00329	ND	0.002765	ND
--		Cadmium	2.395		44.8		1.3		160		119		44.8		42.2		2	
--		Calcium	7775		50200		6300		41900		30800		42900		17300		8500	
4.0E+07	n	Chromium	34.4		28.1		40.4		50.2		40.5		28.4		23.5		31.4	
0.27	n	Cobalt	**10.8**		**5.92**		**11.4**		**3.41**		**6.23**		**2.42**		**3.57**		**11.4**	
28.0	n	Copper	**40.8**		**352**		22.8		**1010**		**2040**		**358**		**550**		**58.1**	
350	n	Iron	**26200**		**17900**		**27300**		**19600**		**23300**		**11200**		**19200**		**25100**	
--		Lead	160.5		4730		75.1		27400		28900		6260		9960		176	
--		Magnesium	6410		11900		6910		14200		9460		12200		5970		6390	
28	n	Manganese	**765.5**		**1730**		**667**		**2740**		**4220**		**2110**		**832**		**641**	
--	n	Mercury	0.228		10.7		0.0463		16.3		79.1		5.64		7.22		0.372	
26	n	Nickel	1.1275	ND	1.125	ND	20.9		0.98	ND	0.9	ND	0.92	ND	24.4		1.015	ND
--		Potassium	6555		2430		6480		3590		2540		1820		3250		6060	
0.52	n	Selenium	0.281	ND	0.2805	ND	0.284	ND	**9.53**		**10.8**		0.2295	ND	0.301	ND	0.253	ND
0.80	n	Silver	0.01155	ND	**33.8**		0.0117	ND	**169**		**145**		**32.2**		**35.8**		0.0104	ND
--		Sodium	710.5		242		520		327		491		176		578		794	
0.014	n	Thallium	0.002605	ND	**4.6**		0.00263	ND	**6.25**		**3.34**		0.002125	ND	0.00279	ND	0.002345	ND
86.0	n	Vanadium	50.3		12.1		60		21.6		24.2		11		**122**		39.6	
370	n	Zinc	274		**10400**		122		**27900**		**29700**		**12100**		**8250**		272	
--		Phosphate, Total (as P)	1450		1360		1450		5180		1660		1430		1580		883	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
SO = Soil
SSL - soil screening level

Table F-4c(2). Screening results for OU2 Upland soil samples compared with Protection of Groundwater SSLs

Protection of Groundwater SSLs (mg/kg)		Sample ID	N	count of NDs	% detected	OU2-0-SO-21D-0		OU2-0-SO-27I-0		OU2-0-SO-29F-0		OU2-0-SO-2A-0		OU2-0-SO-3B-0		OU2-0-SO-4B-0	
		Depth				0		0		0		0		0		0	
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date				9/22/2015		9/15/2015		9/15/2015		9/22/2015		9/24/2015		9/24/2015	
		Habitat				Upland		Upland		Upland		Upland		Upland		Upland	
30000	n	Aluminum	6	0	100%	29400		**39000**		**31800**		**36100**		21500		8310	
0.35	n	Antimony	6	1	83%	**12.3**		0.158	ND	**5.3**		**2610**		**18.1**		**1290**	
0.0015	c	Arsenic	6	0	100%	**23.9**		**11.4**		**14.6**		**760**		**21.9**		**799**	
160	n	Barium	6	0	100%	**289**		**300**		**316**		**289**		**230**		**181**	
19.0	n	Beryllium	6	6	0%	0.002855	ND	0.002585	ND	0.00284	ND	0.002695	ND	0.00258	ND	0.00301	ND
--		Cadmium	6	0	100%	4.39		1.15		2.34		40.7		3.34		293	
--		Calcium	6	0	100%	6870		5050		6710		1890		5560		15200	
4.0E+07	n	Chromium	6	0	100%	39.6		36.6		44.6		34.2		35.8		29.2	
0.27	n	Cobalt	6	0	100%	**10.4**		**11.9**		**12.9**		**5.36**		**10.8**		**6.17**	
28.0	n	Copper	6	0	100%	**55.5**		23.1		**40.4**		**2230**		**56.2**		**2310**	
350	n	Iron	6	0	100%	**22500**		**28400**		**25400**		**9970**		**23100**		**28100**	
--		Lead	6	0	100%	359		32.7		171		20400		485		32900	
--		Magnesium	6	0	100%	5220		6470		6000		1130		4310		5080	
28	n	Manganese	6	0	100%	**738**		**1040**		**1030**		**1770**		**945**		**2580**	
--	n	Mercury	6	1	83%	0.367		0.000745	ND	0.11		12.9		0.799		104	
26	n	Nickel	6	4	33%	1.05	ND	19.2		1.04	ND	**35.9**		0.945	ND	1.105	ND
--		Potassium	6	0	100%	7590		9210		7650		1690		5360		2090	
0.52	n	Selenium	6	5	17%	0.2615	ND	0.237	ND	0.26	ND	0.247	ND	0.236	ND	**9.6**	
0.80	n	Silver	6	2	67%	**2.35**		0.00975	ND	0.0107	ND	**196**		**2.1**		**112**	
--		Sodium	6	0	100%	765		450		652		3370		463		765	
0.014	n	Thallium	6	6	0%	0.002425	ND	0.002195	ND	0.00241	ND	0.00229	ND	0.00219	ND	0.002555	ND
86.0	n	Vanadium	6	0	100%	55.2		59.6		60.7		28.2		50.7		16.6	
370	n	Zinc	6	0	100%	**597**		87.6		230		**18600**		**633**		**65300**	
--		Phosphate, Total (as P)	6	0	100%	1250		590		858		865		1280		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
SO = Soil
SSL - soil screening level

Table F-4c(3). Screening results for OU3 Floodplain soil samples compared with EPA Protection of Groundwater SSLs

Protection of Groundwater SSLs (mg/kg)		Sample ID	N	count of NDs	% detected	OU3-0-SO-ER-10S-0		OU3-0-SO-ER-12R-0		OU3-0-SO-ER-3M-0		OU3-0-SO-ER-5A-0		OU3-0-SO-ER-5G-0		OU3-0-SO-ER-5K-0	
		Depth				0		0		0		0		0		0	
		Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date				9/11/2015		9/14/2015		8/6/2015		8/6/2015		8/6/2015		9/10/2015	
		Habitat				Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	149	0	100%	25100		28100		4290		**32800**		20100		**35600**	
0.35	n	Antimony	149	4	97%	**69.4**		**16.7**		**99.7**		**107**		**106**		**124**	
0.0015	c	Arsenic	149	0	100%	**57.1**		**19.5**		**364**		**130**		**69.9**		**109**	
160	n	Barium	149	0	100%	**293**		**204**		**350**		**208**		**164**		**193**	
19.0	n	Beryllium	149	68	54%	0.0028	ND	0.002365	ND	0.00292	ND	0.002435	ND	0.002615	ND	0.002515	ND
--		Cadmium	149	0	100%	7.2		2.91		12		11.7		23.8		15	
--		Calcium	149	0	100%	12500		7330		62300		6880		18100		12400	
4.0E+07	n	Chromium	149	2	99%	31.9		29.4		1.195	ND	44.3		27.5		43.1	
0.27	n	Cobalt	149	0	100%	**9.98**		**8.26**		**26.7**		**9.5**		**6.1**		**7.62**	
28.0	n	Copper	149	0	100%	**136**		**40.5**		**67**		**245**		**251**		**226**	
350	n	Iron	149	0	100%	**21900**		**24100**		**24600**		**24000**		**13400**		**26300**	
--		Lead	149	0	100%	1330		244		263		2720		1870		2760	
--		Magnesium	149	0	100%	6200		5440		3020		6110		4950		9370	
28	n	Manganese	149	0	100%	**640**		**693**		**15800**		**843**		**343**		**1650**	
--	n	Mercury	149	2	99%	1.52		0.253		0.325		1.83		1.28		3.19	
26	n	Nickel	149	43	71%	1.03	ND	0.87	ND	1.075	ND	17.7		17.9		20.5	
--		Potassium	149	0	100%	5820		6810		1400		7600		4250		8180	
0.52	n	Selenium	149	47	68%	0.2565	ND	0.2165	ND	0.2675	ND	0.223	ND	0.2395	ND	0.2305	ND
0.80	n	Silver	149	12	92%	**13.1**		**2.09**		**3.26**		**20.8**		**12**		**26.8**	
--		Sodium	149	0	100%	757		521		596		402		502		555	
0.014	n	Thallium	149	39	74%	0.002375	ND	0.002005	ND	**7.3**		**4.64**		**6.65**		**7.01**	
86.0	n	Vanadium	149	2	99%	51.1		48.7		4.35		52.2		33.3		51.5	
370	n	Zinc	149	0	100%	**760**		291		**10300**		**2440**		**1610**		**6290**	
--		Phosphate, Total (as P)	149	0	100%	703		612		1520		750		734		982	

Table F-4c(3). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-ER-7J-0		OU3-0-SO-FT-1B-0		OU3-0-SO-FT-1C-0		OU3-0-SO-FT-2B-0		OU3-0-SO-FT-2C-0		OU3-0-SO-FT-3B-0		OU3-0-SO-FT-3C-0		OU3-0-SO-FT-3D-0		OU3-0-SO-FT-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/10/2015		9/28/2015		9/25/2015		9/28/2015		9/25/2015		10/5/2015		9/25/2015		9/25/2015		9/28/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	4110		**30200**		13300		22100		5620		21700		4690		**38700**		15300	
0.35	n	Antimony	**13.4**		**53**		**373**		**62.3**		**244**		**924**		**253**		**190**		**48.9**	
0.0015	c	Arsenic	**23.3**		**47.5**		**371**		**41**		**231**		**372**		**207**		**67.1**		**94.4**	
160	n	Barium	147		**244**		136		**252**		61.5		**211**		83.5		**417**		**411**	
19.0	n	Beryllium	0.00326	ND	0.003325	ND	0.0023	ND	0.00306	ND	0.002385	ND	0.003105	ND	0.002385	ND	0.00263	ND	0.00635	ND
--		Cadmium	1.66		17.5		161		13.7		151		77.2		135		47.6		11.5	
--		Calcium	176000		11100		54300		9950		81200		8740		81200		7700		27500	
4.0E+07	n	Chromium	1.33	ND	37.9		34.2		32.3		31.7		26.1		59.3		41.1		24.5	
0.27	n	Cobalt	**6.07**		**11.8**		**9.01**		**8.39**		**15.8**		**12**		**11**		**14.5**		**16.8**	
28.0	n	Copper	27.8		**131**		**493**		**124**		**430**		**1230**		**350**		**256**		**118**	
350	n	Iron	**10600**		**26400**		**35600**		**22500**		**63100**		**20900**		**46700**		**26800**		**26400**	
--		Lead	128		907		9440		1230		8030		12200		5050		1420		1160	
--		Magnesium	3480		7540		17600		5260		23400		4660		20800		7110		6480	
28	n	Manganese	**5940**		**1480**		**3130**		**862**		**2390**		**3000**		**2150**		**286**		**1790**	
--	n	Mercury	0.139		14.9		6.94		6.49		1.76		167		2.34		40.1		2.74	
26	n	Nickel	1.195	ND	1.22	ND	0.845	ND	1.125	ND	0.945	ND	1.14	ND	0.875	ND	21.2		2.335	ND
--		Potassium	1430		6880		3720		6180		2550		3690		2270		8550		3440	
0.52	n	Selenium	0.2985	ND	0.3045	ND	**8.76**		0.28	ND	**14.3**		0.284	ND	**10.9**		0.241	ND	**0.58**	ND
0.80	n	Silver	0.01225	ND	**8.3**		**77.2**		**7.61**		**31.8**		**75.7**		**28.3**		**10.8**		**7.05**	
--		Sodium	420		1350		234		448		193		655		137		915		2930	
0.014	n	Thallium	0.002765	ND	0.00282	ND	**5.42**		0.002595	ND	**4.58**		0.002635	ND	**3.56**		0.002235	ND	0.0054	ND
86.0	n	Vanadium	5.69		55.1		16.8		39.6		1.62		37.9		3.41		62.3		24.1	
370	n	Zinc	271		**1430**		**30100**		**1580**		**25200**		**11600**		**21900**		**1970**		**1540**	
--		Phosphate, Total (as P)	428		1710		1770		1040		2050		1530		1770		1030		1300	

Table F-4c(3). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-FT-4B-0		OU3-0-SO-FT-4C-0		OU3-0-SO-FT-5C-0		OU3-0-SO-FT-6B-0		OU3-0-SO-FT-6D-0		OU3-0-SO-MRL-15D-0		OU3-0-SO-MRL-15E-0		OU3-0-SO-MRL-16D-0		OU3-0-SO-MRL-16F-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/25/2015		9/25/2015		9/25/2015		9/24/2015		9/25/2015		9/29/2015		9/29/2015		9/30/2015		9/28/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	9140		4640		5640		**52200**		23900		**34600**		27100		**40200**		19400	
0.35	n	Antimony	**355**		**183**		**373**		**152**		**102**		**4.47**		**1460**		**4.27**		**1800**	
0.0015	c	Arsenic	**431**		**155**		**463**		**129**		**34.2**		**16.1**		**1250**		**22.4**		**1130**	
160	n	Barium	**633**		80.2		115		**347**		**440**		**288**		**206**		**275**		**215**	
19.0	n	Beryllium	0.00306	ND	0.00258	ND	0.00244	ND	0	ND	0.004375	ND	0.002635	ND	0.00411	ND	0.00258	ND	0.00291	ND
--		Cadmium	34		48.8		120		89		18.3		1.51		99		1.96		77.6	
--		Calcium	41600		96700		53200		14300		11200		7520		54000		5290		10600	
4.0E+07	n	Chromium	42.7		32.3		32		74		50.8		41.5		143		48.3		25.3	
0.27	n	Cobalt	**7.13**		**6.34**		**15**		**10**		**8.1**		**10.9**		**3.31**		**17.6**		**9.41**	
28.0	n	Copper	**408**		**263**		**838**		**589**		**224**		**34**		**1920**		**36.8**		**3140**	
350	n	Iron	**42700**		**18900**		**60100**		**33700**		**18400**		**25800**		**23200**		**29100**		**27100**	
--		Lead	7940		4390		9750		6070		2580		113		33000		191		40700	
--		Magnesium	14600		24400		16300		12700		7850		7080		19900		6510		3590	
28	n	Manganese	**1850**		**2440**		**2380**		**796**		**798**		**1060**		**2280**		**1310**		**2740**	
--	n	Mercury	4.82		2.02		8.57		16		2.47		0.304		33		0.269		2950	
26	n	Nickel	0.98	ND	0.89	ND	0.895	ND	**29**		1.285	ND	19.9		1.51	ND	24.7		1.07	ND
--		Potassium	3230		2300		2390		10100		6430		9380		9710		9490		3230	
0.52	n	Selenium	**22.9**		0.2365	ND	**21.8**		**12**		0.401	ND	0.2415	ND	**20.6**		0.236	ND	**12.3**	
0.80	n	Silver	**46**		**36.5**		**55.8**		**46**		**14.3**		0.0099	ND	**175**		0.0097	ND	**18.5**	
--		Sodium	265		164		235		558		659		315		390		266		1120	
0.014	n	Thallium	**7.62**		0.00219	ND	**7.76**		**6**		0.003715	ND	0.002235	ND	**10.1**		0.00219	ND	0.00247	ND
86.0	n	Vanadium	12.3		7.72		0.07	ND	84		46.3		63.6		67.9		63.4		39.2	
370	n	Zinc	**4900**		**12800**		**22300**		**10000**		**2780**		192		**22900**		336		**26800**	
--		Phosphate, Total (as P)	1680		1610		1690		1410		1530		1320		4350		746		2240	

Table F-4c(3). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-MRL-16H-0		OU3-0-SO-MRL-18F-0		OU3-0-SO-MRU-10C-0		OU3-0-SO-MRU-11C-0		OU3-0-SO-MRU-12C-0		OU3-0-SO-MRU-13C-0		OU3-0-SO-MRU-1C-0		OU3-0-SO-MRU-1D-0	
		Depth	0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		Dups ave OU3		OU3	
		Sample date	9/28/2015		9/29/2015		10/1/2015		10/1/2015		10/1/2015		10/1/2015		11/10/2014		11/12/2014	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	**35800**		**33700**		15000		2.08		7270		**41100**		17160		21100	
0.35	n	Antimony	**4.33**		**188**		**290**		**663**		**374**		**290**		**165.5**		**24.3**	
0.0015	c	Arsenic	**14.4**		**75.5**		**171**		**793**		**568**		**182**		**192**		**24.1**	
160	n	Barium	**269**		**292**		**303**		**654**		68.4		**375**		**291**		**186**	
19.0	n	Beryllium	0.002655	ND	0.00381	ND	0.002705	ND	0.003065	ND	0.00242	ND	0.00266	ND	0.0030475	ND	0.00298	ND
--		Cadmium	2.26		91.4		50.5		148		70.4		44.6		59.1		7.1	
--		Calcium	11900		10500		12600		5.43		42600		14400		18450		15000	
4.0E+07	n	Chromium	38.3		45.6		18.6		98.6		29.8		76.3		47.15		50.6	
0.27	n	Cobalt	**9.26**		**12.4**		**6.03**		**3.93**		**4.11**		**9.91**		**14.9**		**11**	
28.0	n	Copper	**38.9**		**451**		**561**		**854**		**541**		**909**		**334.5**		**74.7**	
350	n	Iron	**25200**		**26300**		**19600**		4.09		**15300**		**28700**		**35650**		**20400**	
--		Lead	88.2		1790		7060		14000		8950		8930		4005		660	
--		Magnesium	6510		7070		3150		2.51		10400		13700		9690		8400	
28	n	Manganese	**541**		**763**		**1360**		**2790**		**1950**		**1510**		**2570**		**1140**	
--	n	Mercury	0.124		58.7		8.57		16.4		5.28		36.4		2.7535		1.53	
26	n	Nickel	19.6		1.4	ND	0.99	ND	1.125	ND	0.89	ND	25.5		13.2725		1.095	ND
--		Potassium	8580		7040		2350		0.884		2120		7240		5825		7640	
0.52	n	Selenium	0.243	ND	0.349	ND	0.2475	ND	**18.9**		**8.55**		**10.4**		0.27925	ND	0.273	ND
0.80	n	Silver	0.01	ND	**17**		**26.4**		**85.6**		**45.2**		**77.6**		**30.55**		**4.59**	
--		Sodium	427		593		559		0.0215		276		671		375		705	
0.014	n	Thallium	0.00225	ND	0.003235	ND	0.002295	ND	**21.6**		**8.51**		**8.31**		**2.21**		0.00253	ND
86.0	n	Vanadium	54.3		54		26.5		0.00277		21.8		72.4		44.15		48.9	
370	n	Zinc	286		**3280**		**12000**		**15300**		**19000**		**9500**		**5635**		**1230**	
--		Phosphate, Total (as P)	1430		1340		1030		3090		1530		1470		1990		1720	

Table F-4c(3). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-MRU-2B-0		OU3-0-SO-MRU-2C-0		OU3-0-SO-MRU-2D-0		OU3-0-SO-MRU-3C-0		OU3-0-SO-MRU-3D-0		OU3-0-SO-MRU-4C-0		OU3-0-SO-MRU-4D-0		OU3-0-SO-MRU-5C-0		OU3-0-SO-MRU-5D-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		Dups ave OU3		OU3		OU3	
		Sample date	11/10/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/11/2014		11/12/2014	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	20900		26800		29000		**31600**		19600		17000		28450		26200		26300	
0.35	n	Antimony	**100**		**40.1**		0.1675	ND	**24.7**		0.19	ND	0.1725	ND	**8.1**		**61.4**		**13.2**	
0.0015	c	Arsenic	**80**		**51.5**		**7.23**		**37.5**		**7.5**		**9.02**		**15.35**		**151**		**19.2**	
160	n	Barium	**225**		**220**		**218**		**328**		**167**		141		**257.5**		**318**		**258**	
19.0	n	Beryllium	0.003165	ND	0.00298	ND	0.002745	ND	0.003015	ND	0.00311	ND	0.00282	ND	0.003135	ND	0.003305	ND	0.002925	ND
--		Cadmium	13		31.6		2.4		9.5		3.3		1.21		2.665		65.1		4.88	
--		Calcium	12100		14400		8660		6690		14200		5800		5525		33700		5600	
4.0E+07	n	Chromium	62.7		43.8		37.1		36		66.8		37.4		35.45		47.6		38.4	
0.27	n	Cobalt	**7.04**		**10.5**		**15.9**		**12.3**		**28.8**		**5.65**		**11**		**21.9**		**10.9**	
28.0	n	Copper	**160**		**144**		**31.4**		**111**		**58.9**		**32.4**		**35.15**		**216**		**46**	
350	n	Iron	**18000**		**21200**		**30300**		**28100**		**22700**		**13200**		**25750**		**27200**		**22700**	
--		Lead	2460		1250		42.6		868		68.2		27.7		185		2040		388	
--		Magnesium	4120		7440		6620		6920		8710		3960		6270		10100		7220	
28	n	Manganese	**925**		**1490**		**776**		**879**		**576**		**336**		**913**		**15600**		**1170**	
--	n	Mercury	3.98		2.77		0.00142	ND	1.01		0.0804		0.00132	ND	0.295		3.88		0.615	
26	n	Nickel	1.165	ND	1.095	ND	1.01	ND	1.105	ND	24.8		1.035	ND	11.4425		**40.4**		21.2	
--		Potassium	5640		6010		5430		7930		4380		4120		8775		5640		8920	
0.52	n	Selenium	0.29	ND	0.273	ND	0.2515	ND	0.276	ND	0.2845	ND	0.2585	ND	0.28725	ND	0.303	ND	0.268	ND
0.80	n	Silver	**10.4**		**8.87**		0.01035	ND	**3.88**		0.0117	ND	0.0106	ND	0.011825	ND	**16.6**		**1.91**	
--		Sodium	417		477		2190		359		2080		457		385.5		493		277	
0.014	n	Thallium	0.002685	ND	0.00253	ND	0.00233	ND	0.00256	ND	0.00264	ND	0.002395	ND	0.0026625	ND	0.002805	ND	0.002485	ND
86.0	n	Vanadium	39.8		50.3		83.7		62.3		56.4		33.8		64.35		46.1		61.2	
370	n	Zinc	**1900**		**2990**		166		**1250**		260		59.7		355.5		**12500**		**708**	
--		Phosphate, Total (as P)	3760		1800		927		1260		847		1410		1255		2010		1640	

Table F-4c(3). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-MRU-6C-0		OU3-0-SO-MRU-7C-0		OU3-0-SO-MRU-7D-0		OU3-0-SO-MRU-8C-0		OU3-0-SO-NR-11J-0		OU3-0-SO-NR-13L-0		OU3-0-SO-NR-13M-0		OU3-0-SO-NR-14M-0		OU3-0-SO-NR-14P-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	11/11/2014		9/30/2015		10/1/2015		10/1/2015		9/21/2015		9/18/2015		9/18/2015		9/18/2015		9/21/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	**30300**		23200		**46700**		26100		26700		**33300**		7510		7060		26400	
0.35	n	Antimony	**39.7**		**294**		**6.75**		**30**		**2290**		**12**		**600**		**465**		**38.8**	
0.0015	c	Arsenic	**41.1**		**246**		**15.7**		**55.2**		**846**		**19**		**568**		**384**		**33.7**	
160	n	Barium	**191**		**245**		**369**		**364**		**320**		**393**		149		**192**		**175**	
19.0	n	Beryllium	0.00299	ND	0.00233	ND	0.002515	ND	0.00261	ND	0.002875	ND	0.003315	ND	0.00276	ND	0.00252	ND	0.00298	ND
--		Cadmium	32.3		37.6		2.18		5.83		49.7		4.51		118		51.8		30.7	
--		Calcium	24500		19300		15100		21900		2580		10800		38400		26900		7930	
4.0E+07	n	Chromium	60.2		55.7		47		66.6		14.8		43.3		72.8		40.5		29.1	
0.27	n	Cobalt	**7.95**		**11.5**		**14.3**		**9.02**		**5.11**		**7.55**		**5.63**		**5.99**		**7.2**	
28.0	n	Copper	**144**		**505**		26.3		**93.3**		**2200**		**44.2**		**950**		**766**		**86**	
350	n	Iron	**21600**		**34800**		**32200**		**26000**		**11100**		**25700**		**21200**		**22100**		**19100**	
--		Lead	1120		7060		184		837		22200		141		15800		7920		593	
--		Magnesium	8770		8870		16800		5050		1380		7940		10100		8100		5790	
28	n	Manganese	**1360**		**2200**		**1590**		**1270**		**874**		**252**		**2750**		**1560**		**448**	
--	n	Mercury	1.48		15.9		0.344		2.64		676		0.274		17.3		26.9		0.999	
26	n	Nickel	**29.8**		20.6		**26.1**		20.6		25.2		23.1		1.015	ND	0.925	ND	1.095	ND
--		Potassium	6520		5080		16800		6990		1800		7210		2310		1850		7460	
0.52	n	Selenium	0.274	ND	**8.14**		0.2305	ND	0.239	ND	0.263	ND	0.3035	ND	0.2525	ND	**10.3**		0.273	ND
0.80	n	Silver	**9.2**		**47.2**		0.00945	ND	**5.18**		**230**		0.01245	ND	**74.2**		**42**		**4.25**	
--		Sodium	912		276		484		612		2600		934		301		329		586	
0.014	n	Thallium	0.00254	ND	**3.56**		0.002135	ND	0.002215	ND	0.00244	ND	0.00281	ND	**5.54**		**3.75**		0.00253	ND
86.0	n	Vanadium	51.5		67.1		76.1		53		30.7		50		14.7		13.2		37.6	
370	n	Zinc	**5060**		**8100**		339		**967**		**14300**		**788**		**22100**		**12800**		**4290**	
--		Phosphate, Total (as P)	3620		1740		1000		5540		909		859		1910		1740		650	

Table F-4c(3). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-NR-15M-0		OU3-0-SO-NR-15P-0		OU3-0-SO-NR-3F-0		OU3-0-SO-NR-7I-0		OU3-0-SO-NR-9J-0		OU3-0-SO-WR-1B-0		OU3-0-SO-WR-1F-0		OU3-0-SO-WR-2B-0		OU3-0-SO-WR-2F-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/17/2015		9/21/2015		9/22/2015		9/21/2015		9/21/2015		8/4/2015		7/31/2015		8/4/2015		7/31/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	9180		5780		**32900**		**33300**		6170		4670		7670		6090		13100	
0.35	n	Antimony	**805**		**343**		**106**		**26.6**		**271**		**172**		**253**		**328**		**308**	
0.0015	c	Arsenic	**701**		**307**		**96**		**26.6**		**297**		**189**		**287**		**340**		**264**	
160	n	Barium	**174**		160		**282**		**365**		**259**		155		**227**		**237**		**186**	
19.0	n	Beryllium	0.00236	ND	0.002705	ND	0	ND	0.00285	ND	0.00296	ND	0.00258	ND	0.00296	ND	0.002325	ND	0.003325	ND
--		Cadmium	100		40.3		31		9.75		76.4		72.6		78.7		97.4		92.1	
--		Calcium	33000		27000		10100		10500		43900		107000		44900		50700		104000	
4.0E+07	n	Chromium	34.5		23.2		45		45.3		30.1		16.2		28.3		23.5		33.9	
0.27	n	Cobalt	**6.38**		**7.99**		**8**		**10**		**52.4**		**5.56**		**8.36**		**11.8**		**8.47**	
28.0	n	Copper	**1210**		**476**		**205**		**70.2**		**390**		**227**		**398**		**474**		**586**	
350	n	Iron	**20300**		**32900**		**25800**		**25200**		**122000**		**22300**		**40100**		**28800**		**19200**	
--		Lead	16300		7000		3060		597		6630		3470		5550		6370		5750	
--		Magnesium	10300		8770		7880		9130		8600		10700		14100		10900		11400	
28	n	Manganese	**2630**		**1450**		**1070**		**380**		**1600**		**1710**		**2490**		**2690**		**1230**	
--	n	Mercury	27.6		8.88		17		3.11		11.1		2.24		3.93		5.75		13.3	
26	n	Nickel	0.865	ND	0.995	ND	1	ND	21.5		1.09	ND	0.95	ND	1.085	ND	20.9		1.22	ND
--		Potassium	2690		1710		8290		8010		1530		1510		2780		1820		4450	
0.52	n	Selenium	**10.2**		**13.4**		0	ND	0.261	ND	**30.9**		**8.9**		**16**		**13.3**		0.3045	ND
0.80	n	Silver	**96**		**29.6**		**11**		**2.62**		**39**		**16.1**		**29.1**		**28.3**		**34**	
--		Sodium	382		213		1190		1380		258		219		181		388		5960	
0.014	n	Thallium	**5.13**		**3.75**		0	ND	0.00242	ND	0.002515	ND	**48.1**		**15.2**		**20.6**		**31.8**	
86.0	n	Vanadium	20.4		5.91		47		45.8		0.085	ND	6.41		5.45		9.62		19.6	
370	n	Zinc	**20900**		**10100**		**5240**		**975**		**12400**		**15200**		**14600**		**34700**		**26000**	
--		Phosphate, Total (as P)	1560		1310		942		1970		2700		1520		1550		1460		971	

Table F-4c(3). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-WR-5B-0		OU3-0-SO-WR-5F-0		OU3-0-TL-MR2	
		Depth	0		0		0001	
		Operable Unit	OU3		Dups ave OU3		OU3	
		Sample date	8/4/2015		7/31/2015		3/2/2015	
		Habitat	Floodplain		Floodplain		Floodplain	
30000	n	Aluminum	9240		4520		14000	
0.35	n	Antimony	**207**		**192**		**519**	
0.0015	c	Arsenic	**191**		**418**		**442**	
160	n	Barium	**180**		54.85		143	
19.0	n	Beryllium	0.00288	ND	0.00254	ND	0.002525	ND
--		Cadmium	123		88.85		58.9	
--		Calcium	142000		49450		40700	
4.0E+07	n	Chromium	21.8		28.8		33.9	
0.27	n	Cobalt	**9.87**		**3.65**		**6.57**	
28.0	n	Copper	**345**		**354.5**		**823**	
350	n	Iron	**15700**		**16500**		**18000**	
--		Lead	5040		3625		11100	
--		Magnesium	9180		17750		6040	
28	n	Manganese	**1340**		**2345**		**2070**	
--	n	Mercury	5.88		2.8		22.7	
26	n	Nickel	1.055	ND	0.9325	ND	0.925	ND
--		Potassium	2580		1525		3140	
0.52	n	Selenium	0.2635	ND	0.2325	ND	0.2315	ND
0.80	n	Silver	**25.3**		**22**		**54.7**	
--		Sodium	1180		252.5		264	
0.014	n	Thallium	**14.5**		**8.98**		0.00268	ND
86.0	n	Vanadium	16.8		6.44		34.6	
370	n	Zinc	**26500**		**17950**		**13700**	
--		Phosphate, Total (as P)	1220		1305		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
SO = Soil
SSL - soil screening level
TL = Tailings
WR = OU3 P.C. West Reach

Table F-4c(4). Screening results for OU3 Upland soil samples compared with Protection of Groundwater SSLs

Protection of Groundwater SSLs (mg/kg)		Sample ID / Depth / Operable Unit / Sample date / Habitat	N	count of NDs	% detected	OU3-0-SO-ER-11D-0 0 OU3 9/14/2015 Upland		OU3-0-SO-ER-11S-0 0 OU3 9/11/2015 Upland		OU3-0-SO-ER-4B-0 0 OU3 9/14/2015 Upland		OU3-0-SO-ER-4Q-0 0 OU3 8/5/2015 Upland		OU3-0-SO-ER-6A-0 0 OU3 9/14/2015 Upland		OU3-0-SO-ER-7P-0 0 OU3 9/10/2015 Upland		OU3-0-SO-ER-8A-0 0 OU3 9/14/2015 Upland	
30000	n	Aluminum	47	0	100%	**35000**		**33700**		**31700**		26600		**30400**		**30100**		26800	
0.35	n	Antimony	47	5	89%	**39.7**		**7.7**		**62.8**		**20.4**		**4.2**		**116**		**8.71**	
0.0015	c	Arsenic	47	0	100%	**42.3**		**16.3**		**80.5**		**41.2**		**10.9**		**103**		**11.1**	
160	n	Barium	47	0	100%	**225**		**189**		**226**		**344**		**198**		**228**		**167**	
19.0	n	Beryllium	47	46	2%	0.00246	ND	0.002575	ND	0.00259	ND	0.002435	ND	0.00224	ND	0.002555	ND	0.002675	ND
--		Cadmium	47	1	98%	8.79		1.77		10.7		5.15		2.26		13.6		4.2	
--		Calcium	47	0	100%	9740		7040		7910		6680		6550		7540		26300	
4.0E+07	n	Chromium	47	0	100%	54.5		34.7		39.1		37.1		29.8		40.5		30.7	
0.27	n	Cobalt	47	0	100%	**11.1**		**8.03**		**8.91**		**13**		**9.31**		**7.98**		**7.24**	
28.0	n	Copper	47	1	98%	**109**		**30.7**		**135**		**78.6**		**28.1**		**193**		**34.1**	
350	n	Iron	47	0	100%	**32800**		**24800**		**24300**		**22800**		**26900**		**23200**		**22300**	
--		Lead	47	0	100%	1030		91.6		1520		642		67.5		2500		176	
--		Magnesium	47	0	100%	7520		7190		6220		5540		5550		6640		6730	
28	n	Manganese	47	0	100%	**1140**		**488**		**894**		**1180**		**811**		**760**		**429**	
--	n	Mercury	47	1	98%	1.51		0.122		0.911		0.405		0.118		2.04		0.34	
26	n	Nickel	47	22	53%	18.4		0.945	ND	0.95	ND	18.5		0.82	ND	0.94	ND	0.98	ND
--		Potassium	47	0	100%	7910		7160		6890		6460		7410		7900		5660	
0.52	n	Selenium	47	47	0%	0.2255	ND	0.236	ND	0.237	ND	0.223	ND	0.205	ND	0.234	ND	0.245	ND
0.80	n	Silver	47	16	66%	**8.19**		0.0097	ND	**13.7**		**4.13**		0.00845	ND	**19.9**		**1.78**	
--		Sodium	47	0	100%	565		330		419		432		508		586		368	
0.014	n	Thallium	47	46	2%	**6.48**		0.002185	ND	0.0022	ND	0.002065	ND	0.0019	ND	0.00217	ND	0.00227	ND
86.0	n	Vanadium	47	0	100%	63.7		58.7		59.6		55.4		52.6		46		52.9	
370	n	Zinc	47	0	100%	**1870**		166		**1540**		**661**		286		**2270**		**659**	
--		Phosphate, Total (as P)	47	0	100%	892		517		579		565		596		973		711	

Table F-4c(4). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-FT-4E-0		OU3-0-SO-FT-5E-0		OU3-0-SO-MRL-14G-0		OU3-0-SO-MRL-14H-0		OU3-0-SO-MRL-14I-0		OU3-0-SO-MRL-14J-0		OU3-0-SO-MRL-15G-0		OU3-0-SO-MRL-15H-0		OU3-0-SO-MRL-15I-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/25/2015		9/25/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
30000	n	Aluminum	**32500**		**32000**		**32500**		**31300**		**36000**		28000		30000		**35000**		**33200**	
0.35	n	Antimony	**13.1**		**13.5**		**21.7**		**9.51**		**40.7**		**5.48**		**3.9**		**7.87**		**51.5**	
0.0015	c	Arsenic	**20**		**19.2**		**24.2**		**24.5**		**43.4**		**16.4**		**12.7**		**21.9**		**62**	
160	n	Barium	**327**		**219**		**200**		**220**		**195**		**278**		**204**		**238**		**237**	
19.0	n	Beryllium	0.00306	ND	0.00274	ND	0.00284	ND	0.00273	ND	0.00335	ND	0.00261	ND	0.002805	ND	0.00256	ND	0.00316	ND
--		Cadmium	3.26		9.86		5.44		3.3		8.24		1.88		1.64		3.51		9.64	
--		Calcium	8590		6040		9880		8790		43800		5820		7350		8170		9420	
4.0E+07	n	Chromium	41.6		33.9		39.6		39.1		72.5		36		69.9		39.7		45	
0.27	n	Cobalt	**7.8**		**8.52**		**7.44**		**9.4**		**10.1**		**11.8**		**7.73**		**9.1**		**12.4**	
28.0	n	Copper	**59.9**		**55.1**		**66.5**		**44.2**		**116**		**36.6**		**31.8**		**41.9**		**126**	
350	n	Iron	**22700**		**24100**		**24300**		**24000**		**24800**		**24400**		**22300**		**25400**		**23800**	
--		Lead	375		288		459		213		1290		166		83.1		146		1210	
--		Magnesium	7170		5690		6940		6840		9380		4950		6050		6560		6830	
28	n	Manganese	**315**		**558**		**410**		**484**		**759**		**991**		**252**		**706**		**1960**	
--	n	Mercury	2.03		1.54		0.651		0.352		2.49		0.154		0.154		0.291		1.81	
26	n	Nickel	1.125	ND	1.005	ND	1.045	ND	18.9		**33.6**		18.2		**29.9**		19		22.9	
--		Potassium	8010		8070		8240		7250		7600		6950		7240		8320		7260	
0.52	n	Selenium	0.28	ND	0.251	ND	0.26	ND	0.25	ND	0.307	ND	0.239	ND	0.257	ND	0.2345	ND	0.2895	ND
0.80	n	Silver	**2.14**		**2.19**		**4.44**		**1.73**		**11.3**		0.0098	ND	0.01055	ND	**1.33**		**9.07**	
--		Sodium	445		347		376		352		434		390		312		406		591	
0.014	n	Thallium	0.002595	ND	0.002325	ND	0.00241	ND	0.002315	ND	0.002845	ND	0.002215	ND	0.00238	ND	0.002175	ND	0.00268	ND
86.0	n	Vanadium	61.7		57.6		57.8		55.1		65.7		59.1		53.6		60.8		65.3	
370	n	Zinc	307		**589**		**1120**		**522**		**2170**		233		203		**426**		**1660**	
--		Phosphate, Total (as P)	1240		1190		1200		1090		843		880		1130		770		874	

Table F-4c(4). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-MRL-15J-0		OU3-0-SO-MRL-15K-0		OU3-0-SO-MRL-16G-0		OU3-0-SO-MRL-16I-0		OU3-0-SO-MRL-16J-0		OU3-0-SO-MRL-16K-0		OU3-0-SO-MRL-17G-0		OU3-0-SO-MRL-17H-0		OU3-0-SO-MRL-18G-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/29/2015		9/29/2015		9/28/2015		9/28/2015		9/28/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
30000	n	Aluminum	**40800**		29000		**33700**		**36000**		**35500**		**38900**		**33000**		**35400**		**34500**	
0.35	n	Antimony	**244**		0.165	ND	**12.9**		**37.7**		**16.8**		**77.3**		**4.09**		**4.12**		**4.1**	
0.0015	c	Arsenic	**223**		**11**		**18.8**		**41.8**		**25.1**		**75.1**		**17.1**		**18**		**19.3**	
160	n	Barium	**197**		**286**		**216**		**197**		**241**		**335**		**201**		**267**		**332**	
19.0	n	Beryllium	0.003405	ND	0.002705	ND	0.0027	ND	0.002825	ND	0.0027	ND	0.002985	ND	0.002775	ND	0.0027	ND	0.00265	ND
--		Cadmium	27.5		1.42		2.33		6.03		4.32		12.2		2.23		1.63		1.82	
--		Calcium	13900		5900		8400		7790		7500		18100		10700		6820		8060	
4.0E+07	n	Chromium	57.7		46.2		34.2		39.7		41		42.9		33.6		33.9		42.9	
0.27	n	Cobalt	**8.14**		**11.9**		**9.83**		**8.31**		**8.48**		**12.3**		**9.42**		**12.6**		**11.3**	
28.0	n	Copper	**522**		**34.4**		**48.9**		**94.9**		**54**		**165**		**34**		**34.4**		**45.9**	
350	n	Iron	**30100**		**24900**		**23700**		**24900**		**27400**		**27400**		**24700**		**28700**		**28300**	
--		Lead	6640		94.3		209		1010		256		1710		83.8		83.9		109	
--		Magnesium	10800		5210		6290		6940		6250		8370		6200		5760		7010	
28	n	Manganese	**684**		**1020**		**657**		**424**		**430**		**1550**		**556**		**921**		**1090**	
--	n	Mercury	11.3		0.0952		0.235		1.03		0.373		3.2		0.141		0.122		0.231	
26	n	Nickel	1.25	ND	23.4		18.4		19.1		19.3		21.6		1.02	ND	21.7		23	
--		Potassium	9330		8090		8060		8270		7440		8540		7140		6890		8940	
0.52	n	Selenium	0.312	ND	0.2475	ND	0.2475	ND	0.259	ND	0.247	ND	0.2735	ND	0.254	ND	0.247	ND	0.2425	ND
0.80	n	Silver	**54.8**		0.0102	ND	**1.6**		**7.26**		**2.24**		**15**		0.01045	ND	0.01015	ND	0.00995	ND
--		Sodium	571		527		353		339		488		460		337		271		483	
0.014	n	Thallium	0.00289	ND	0.002295	ND	0.00229	ND	0.0024	ND	0.00229	ND	0.002535	ND	0.002355	ND	0.00229	ND	0.00225	ND
86.0	n	Vanadium	76.7		58.5		47.3		52.4		61.7		77.4		67.5		71.9		65.6	
370	n	Zinc	**7800**		148		**407**		**1330**		**622**		**2610**		341		186		245	
--		Phosphate, Total (as P)	1520		975		1740		816		567		1080		1020		1090		1450	

Table F-4c(4). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-MRL-19G-0		OU3-0-SO-MRU-10B-0		OU3-0-SO-MRU-12B-0		OU3-0-SO-MRU-12E-0		OU3-0-SO-MRU-13B-0		OU3-0-SO-MRU-1B-0		OU3-0-SO-MRU-3A-0		OU3-0-SO-MRU-3B-0		OU3-0-SO-MRU-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/29/2015		9/30/2015		9/30/2015		10/1/2015		9/30/2015		11/10/2014		11/10/2014		11/10/2014		11/10/2014	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
30000	n	Aluminum	**40200**		27100		26600		28600		**37600**		18300		28100		24200		30000	
0.35	n	Antimony	0.16	ND	**12.9**		**22.1**		**6.68**		**24**		**37.3**		**29**		**112**		**8.16**	
0.0015	c	Arsenic	**19.9**		**22.6**		**39.3**		**22**		**37.5**		**42**		**33.9**		**98.7**		**16.8**	
160	n	Barium	**306**		**331**		**318**		**289**		**460**		**200**		**261**		**302**		**253**	
19.0	n	Beryllium	0.002615	ND	0.002715	ND	0.00294	ND	0.003025	ND	0.00283	ND	0.003125	ND	0.003235	ND	0.003105	ND	0.003115	ND
--		Cadmium	1.8		4.01		11		2.95		4.53		10.9		6.67		17.4		2.94	
--		Calcium	6760		6630		15100		12000		5630		10700		15200		13100		21400	
4.0E+07	n	Chromium	40.1		32.6		45.7		131		30.8		72.1		91		73.7		74.5	
0.27	n	Cobalt	**14.2**		**13.3**		**8.71**		**9.56**		**11**		**6.9**		**8.54**		**10.6**		**10.8**	
28.0	n	Copper	**34.8**		**60**		**294**		**39.5**		**62**		**89.3**		**97.3**		**210**		**76.1**	
350	n	Iron	**29100**		**27500**		**36400**		**22300**		**28600**		**15800**		**21100**		**20600**		**26300**	
--		Lead	83.2		247		925		191		702		1170		914		3040		213	
--		Magnesium	6690		4520		6120		8150		4480		3480		5630		4620		6020	
28	n	Manganese	**1310**		**838**		**662**		**1230**		**1070**		**788**		**1090**		**1850**		**1590**	
--	n	Mercury	0.0913		0.712		0.709		0.211		1.33		0.712		1.15		0.526		0.306	
26	n	Nickel	22.2		19.8		1.08	ND	**26.8**		1.04	ND	1.15	ND	1.19	ND	22.8		23.9	
--		Potassium	9550		6600		6550		8800		8580		5060		8660		6640		8930	
0.52	n	Selenium	0.2395	ND	0.2485	ND	0.2695	ND	0.277	ND	0.2595	ND	0.2865	ND	0.2965	ND	0.2845	ND	0.2855	ND
0.80	n	Silver	0.00985	ND	**2.52**		**5.11**		0.0114	ND	**2.96**		**6.53**		**6.93**		**13.9**		0.0117	ND
--		Sodium	388		294		2310		385		224		352		452		416		424	
0.014	n	Thallium	0.00222	ND	0.002305	ND	0.002495	ND	0.002565	ND	0.0024	ND	0.002655	ND	0.002745	ND	0.002635	ND	0.002645	ND
86.0	n	Vanadium	69.6		68.3		46.5		50		62.8		37.9		51.4		49.3		55.1	
370	n	Zinc	192		**861**		**1940**		328		**993**		**1380**		**994**		**2260**		**424**	
--		Phosphate, Total (as P)	1030		1240		625		3340		1100		4020		5460		4170		68400	

Table F-4c(4). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-MRU-4B-0		OU3-0-SO-MRU-5B-0		OU3-0-SO-MRU-6A-0		OU3-0-SO-MRU-6B-0		OU3-0-SO-MRU-6D-0		OU3-0-SO-MRU-7B-0		OU3-0-SO-MRU-8B-0		OU3-0-SO-MRU-8D-0		OU3-0-SO-MRU-9B-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	11/10/2014		11/11/2014		11/11/2014		11/11/2014		11/12/2014		9/30/2015		9/30/2015		10/1/2015		9/30/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
30000	n	Aluminum	17100		12700		20900		14900		22100		17700		25400		**35400**		29100	
0.35	n	Antimony	**61.7**		**23.4**		**14.3**		0.2435	ND	**16.7**		**28.5**		**213**		**8.23**		**21.5**	
0.0015	c	Arsenic	**42.8**		**26.6**		**22**		**5.55**		**24.3**		**31.7**		**244**		**18.3**		**34.3**	
160	n	Barium	**228**		**181**		**256**		**164**		**207**		154		**269**		**228**		**221**	
19.0	n	Beryllium	0.00314	ND	2.28		0.003235	ND	0.003985	ND	0.00284	ND	0.00243	ND	0.003255	ND	0.003265	ND	0.00262	ND
--		Cadmium	14.1		9.99		3.47		0.0113	ND	7.88		5.59		41.6		2.68		5.05	
--		Calcium	17300		13900		27600		16300		11200		64300		20100		13500		5800	
4.0E+07	n	Chromium	40.1		17.6		67.7		28.8		29.4		24.3		69.4		43.7		41	
0.27	n	Cobalt	**6.11**		**3.56**		**7.88**		**5.05**		**9.16**		**5.87**		**14.8**		**14.4**		**15.7**	
28.0	n	Copper	**152**		**74.4**		**37**		1.025	ND	**48**		**64.1**		**473**		**35.9**		**51.8**	
350	n	Iron	**14100**		**11600**		**18800**		**12100**		**19400**		**16600**		**33200**		**30700**		**32500**	
--		Lead	1600		744		371		21.4		511		906		6610		217		495	
--		Magnesium	4010		2750		6710		7610		8320		5550		11700		11100		6200	
28	n	Manganese	**984**		**269**		**956**		**354**		**1480**		**2810**		**4600**		**1060**		**965**	
--	n	Mercury	2.54		0.783		0.606		0.00175	ND	0.815		0.993		17.7		0.284		1.02	
26	n	Nickel	1.155	ND	1.235	ND	1.185	ND	1.465	ND	1.045	ND	0.895	ND	**29.2**		24.7		23.4	
--		Potassium	5740		2190		5940		3360		7360		4750		5830		5010		5070	
0.52	n	Selenium	0.288	ND	0.308	ND	0.296	ND	0.365	ND	0.2605	ND	0.2225	ND	0.298	ND	0.299	ND	0.24	ND
0.80	n	Silver	**6.9**		**2.92**		0.01215	ND	0.015	ND	**2.78**		**4.42**		**50.2**		0.0123	ND	**3.15**	
--		Sodium	330		697		425		212		242		295		368		747		238	
0.014	n	Thallium	0.002665	ND	0.00285	ND	0.002745	ND	0.00338	ND	0.00241	ND	0.002065	ND	0.00276	ND	0.00277	ND	0.002225	ND
86.0	n	Vanadium	33.6		20.7		43.5		30.9		49		41		78.6		68.2		79.6	
370	n	Zinc	**1150**		**1610**		**468**		67.4		**1130**		**908**		**9290**		**402**		**971**	
--		Phosphate, Total (as P)	1900		1200		2680		436		1010		2230		1710		1240		1290	

Table F-4c(4). (cont.)

Protection of Groundwater SSLs (mg/kg)		Sample ID	OU3-0-SO-NR-12Q-0		OU3-0-SO-NR-2C-0		OU3-0-SO-NR-2F-0		OU3-0-SO-NR-4J-0	
		Depth	0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3	
		Sample date	10/5/2015		9/22/2015		9/22/2015		9/22/2015	
		Habitat	Upland		Upland		Upland		Upland	
30000	n	Aluminum	17300		20900		24400		**30500**	
0.35	n	Antimony	0.164	ND	**7.28**		**7.25**		0.1445	ND
0.0015	c	Arsenic	**8.36**		**10.9**		**13.9**		**47.2**	
160	n	Barium	105		**348**		**241**		**234**	
19.0	n	Beryllium	0.002685	ND	0.002525	ND	0.0025	ND	0.00237	ND
--		Cadmium	0.833		3.07		2.67		1.18	
--		Calcium	2700		8660		8800		7330	
4.0E+07	n	Chromium	20.2		32.2		32.3		42.4	
0.27	n	Cobalt	**6.05**		**10.9**		**8.13**		**9.73**	
28.0	n	Copper	17.1		**43**		**34.7**		19.5	
350	n	Iron	**13100**		**25200**		**19700**		**24500**	
--		Lead	42.4		251		233		77.4	
--		Magnesium	3110		5270		5850		7550	
28	n	Manganese	**382**		**706**		**472**		**318**	
--	n	Mercury	0.162		0.263		0.322		0.0772	
26	n	Nickel	0.985	ND	17.3		0.92	ND	17.9	
--		Potassium	4800		5050		5740		7030	
0.52	n	Selenium	0.246	ND	0.2315	ND	0.229	ND	0.217	ND
0.80	n	Silver	0.0101	ND	**1.57**		**1.37**		0.0089	ND
--		Sodium	293		1670		459		526	
0.014	n	Thallium	0.00228	ND	0.002145	ND	0.00212	ND	0.00201	ND
86.0	n	Vanadium	33.6		60.6		45.1		83.8	
370	n	Zinc	60.1		333		348		104	
--		Phosphate, Total (as P)	291		1420		983		1060	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
MRU = OU3 Middle Reach Upper
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
SO = Soil
SSL - soil screening level
WR = OU3 P.C. West Reach

Table F-4d(1). Screening results for OU2 Floodplain soil samples compared with Empire Canyon recreational PRGs

Empire Canyon recreational PRGs (mg/kg)		Sample ID				OU2-0-SO-10L-0		OU2-0-SO-12I-0		OU2-0-SO-12L-0		OU2-0-SO-15L-0		OU2-0-SO-15N-0		OU2-0-SO-17L-0		OU2-0-SO-17N-0	
		Depth				0		0		0		0		0		0		0	
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date				9/21/2015		9/17/2015		9/21/2015		9/17/2015		9/16/2015		9/17/2015		9/16/2015	
		Habitat	**N**	**count of NDs**	**% detected**	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	33	0	100%	27400		18200		7900		3350		6830		30200		3580	
3.5E+04	n	Antimony	33	1	97%	16.7		1550		874		847		304		11.4		413	
1.4E+04	c	Arsenic	33	0	100%	10.5		1350		649		757		258		23.8		406	
1.7E+07	n	Barium	33	0	100%	195		227		185		63.8		236		319		99.4	
1.7E+05	n	Beryllium	33	33	0%	0.00302	ND	0.00249	ND	0.00264	ND	0.00437	ND	0.002865	ND	0.002705	ND	0.0026	ND
8.7E+04	n	Cadmium	33	0	100%	15.7		206		79.6		175		37.4		4.08		69	
--		Calcium	33	0	100%	6830		39100		25000		74700		42000		7300		43500	
1.3E+08	n	Chromium	33	2	94%	34.1		123		30		1.785	ND	34.5		39.3		17.7	
2.6E+04	n	Cobalt	33	0	100%	5.77		3.97		2.69		7.29		6.91		11.8		2.2	
3.5E+06	n	Copper	33	0	100%	34.9		2450		1670		252		385		46.2		579	
6.1E+07	n	Iron	33	0	100%	20500		24000		15300		11200		31600		34800		11100	
1.2E+04		Lead	33	1	97%	15.2	ND	**34400**		**16900**		1830		7680		272		7900	
--		Magnesium	33	0	100%	6220		17700		8680		3610		14300		6140		12000	
2.1E+06	n	Manganese	33	0	100%	183		3650		1730		350		1670		1070		2100	
2.6E+04	n	Mercury	33	0	100%	0.202		31.3		26		1.88		9.38		0.424		8.23	
1.7E+06	n	Nickel	33	27	18%	1.11	ND	0.915	ND	0.97	ND	1.605	ND	1.05	ND	18.6		0.955	ND
--		Potassium	33	0	100%	7520		6500		2350		942		2280		6150		1270	
4.4E+05	n	Selenium	33	19	42%	0.2765	ND	20.5		10.2		0.4	ND	10.8		0.248	ND	0.238	ND
4.4E+05	n	Silver	33	5	85%	0.01135	ND	236		120		7.02		41.3		1.6		55.2	
--		Sodium	33	0	100%	1020		473		399		1350		285		944		162	
8.7E+02	n	Thallium	33	14	58%	0.00256	ND	11.9		0.00224	ND	24.9		3.98		0.002295	ND	5.33	
4.4E+05	n	Vanadium	33	1	97%	40.3		41.8		18.9		5.9		18.8		40.6		11.4	
2.6E+07	n	Zinc	33	0	100%	1370		31300		20300		65600		11100		427		17200	
--		Phosphate, Total (as P)	33	0	100%	905		3710		1460		419		2050		863		1660	

Table F-4d(1). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU2-0-SO-26V-0		OU2-0-SO-30R-0		OU2-0-SO-30Y-0		OU2-0-SO-34G-0		OU2-0-SO-35V-0		OU2-0-SO-37V-0		OU2-0-SO-39V-0		OU2-0-SO-43T-0		OU2-0-SO-44T-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	9/16/2015		9/15/2015		9/16/2015		8/5/2015		8/5/2015		8/5/2015		8/4/2015		8/4/2015		9/14/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	3370		5600		4610		7530		12000		20000		12800		2940		6960	
3.5E+04	n	Antimony	132		489		234		63		45.2		24.8		320		3.78		353	
1.4E+04	c	Arsenic	217		335		335		110		206		48.7		306		4.23		413	
1.7E+07	n	Barium	161		119		184		159		196		269		336		77.7		248	
1.7E+05	n	Beryllium	0.00264	ND	0.00246	ND	0.002595	ND	0.00263	ND	0.00344	ND	0.0025	ND	0.00244	ND	0.002495	ND	0	ND
8.7E+04	n	Cadmium	27.3		54		93.1		63.6		17.5		5.52		55.3		3		127	
--		Calcium	38100		27500		57000		41400		24200		27800		15000		117000		48800	
1.3E+08	n	Chromium	20.6		26		25.9		10.9		15		24		22.5		1.02	ND	28	
2.6E+04	n	Cobalt	2.5		2.2		8.04		12.2		14.5		8.61		27.9		1.88		9	
3.5E+06	n	Copper	125		873		337		126		89.7		76.7		411		31.5		806	
6.1E+07	n	Iron	16100		10400		46500		11900		26100		20100		20900		3340		39300	
1.2E+04		Lead	2810		**13900**		6410		605		1110		616		9200		51.6		10600	
--		Magnesium	14900		7660		18500		3480		4670		6790		4000		4650		13300	
2.1E+06	n	Manganese	1700		1420		2460		1770		2420		266		3850		2820		2050	
2.6E+04	n	Mercury	1.65		17.7		4.82		0.642		4.79		1.8		23.9		0.298		14	
1.7E+06	n	Nickel	0.97	ND	0.905	ND	0.955	ND	0.965	ND	1.265	ND	0.92	ND	0.895	ND	0.915	ND	1	ND
--		Potassium	1440		1560		2070		1900		2910		5070		3630		1540		2240	
4.4E+05	n	Selenium	0.2415	ND	0.2255	ND	15.1		0.2405	ND	0.315	ND	0.229	ND	8.57		0.2285	ND	10	
4.4E+05	n	Silver	17		60.6		34.2		5.58		3.92		3.48		24.7		0.0094	ND	50	
--		Sodium	127		280		278		202		783		587		278		788		400	
8.7E+02	n	Thallium	0.00224	ND	3.33		3.96		7.29		0.00292	ND	0.002125	ND	0.00207	ND	0.002115	ND	7	
4.4E+05	n	Vanadium	10.4		11.6		15.2		14.1		17.4		31.8		25.8		5.56		9	
2.6E+07	n	Zinc	4430		17200		15400		7970		2680		995		6590		289		31800	
--		Phosphate, Total (as P)	1480		1390		1330		1040		913		721		1320		844		1740	

Table F-4d(1). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU2-0-SO-44V-0		OU2-0-SO-44W-0		OU2-0-SO-45T-0		OU2-0-SO-45V-0		OU2-0-SO-46V-0		OU2-0-SO-47T-0		OU2-0-SO-48S-0		OU2-0-SO-48T-0		OU2-0-SO-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	7/31/2015		7/31/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		9/24/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	20500		10200		11300		6470		5310		9190		7330		6640		31200	
3.5E+04	n	Antimony	570		344		513		224		332		269		267		5490		12.4	
1.4E+04	c	Arsenic	550		442		589		241		743		360		314		7010		22.2	
1.7E+07	n	Barium	298		224		330		171		160		212		196		575		458	
1.7E+05	n	Beryllium	0.003105	ND	0.00328	ND	0.0022	ND	0.002365	ND	0	ND	0	ND	0.00284	ND	0.00358	ND	0.00294	ND
8.7E+04	n	Cadmium	86.5		180		105		65.4		62		118		101		66.1		3.68	
--		Calcium	41800		44700		69600		50200		40400		25600		52900		14900		6170	
1.3E+08	n	Chromium	65.4		30.3		49.5		33.3		26		29		27.5		20		37.7	
2.6E+04	n	Cobalt	13.5		21.4		13.5		4.99		7		9		9.9		11.3		11.5	
3.5E+06	n	Copper	1080		650		845		437		278		494		387		396		48.1	
6.1E+07	n	Iron	33700		25800		37500		21300		27500		22700		28800		130000		26700	
1.2E+04		Lead	9720		4800		11400		5490		4220		5600		5920		3810		271	
--		Magnesium	14600		10300		15800		16200		13900		7060		13700		3440		5670	
2.1E+06	n	Manganese	2750		3200		2280		2310		2300		1010		1950		1680		1070	
2.6E+04	n	Mercury	26.5		9.27		10.8		3.27		3		13		3.61		1.57		0.643	
1.7E+06	n	Nickel	22.6		23.5		0.81	ND	0.87	ND	1	ND	2	ND	1.04	ND	1.315	ND	20.1	
--		Potassium	6030		3250		4330		2830		2210		2410		2740		2310		7710	
4.4E+05	n	Selenium	14.3		0.3005	ND	15.6		8.2		8		20		9.49		0.3275	ND	0.2695	ND
4.4E+05	n	Silver	72.3		41.3		81.3		26.8		22		27		28.2		21.1		1.63	
--		Sodium	387		3430		204		115		119		391		376		335		487	
8.7E+02	n	Thallium	21.6		45.7		14.1		5.9		4		23		10.3		35.4		0.002495	ND
4.4E+05	n	Vanadium	30.7		14.5		14.3		8.5		3		13		9.21		0.0825	ND	57	
2.6E+07	n	Zinc	26600		29800		18000		14600		13200		19400		27900		22200		515	
--		Phosphate, Total (as P)	2550		261		1490		1060		1670		3480		1240		519		1020	

Table F-4d(1). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU2-0-SO-50P-0		OU2-0-SO-50Q-0		OU2-0-SO-50T-0		OU2-0-SO-7F-0		OU2-0-SO-8G-0		OU2-0-SO-8I-0		OU2-0-SO-OP1-0		OU2-0-SO-OP2-0	
		Depth	0		0		0		0		0		0		0		0	
			Dups ave															
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	7/29/2015		7/29/2015		7/30/2015		9/17/2015		9/17/2015		9/21/2015		7/29/2015		9/17/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	30600		7320		35800		8860		9090		5200		11200		27200	
3.5E+04	n	Antimony	6.6		276		0.1895	ND	826		1270		257		244		8.27	
1.4E+04	c	Arsenic	11.9		247		11.3		1020		1060		292		268		16.8	
1.7E+07	n	Barium	312		166		262		158		174		57.4		269		450	
1.7E+05	n	Beryllium	0.0030675	ND	0.00306	ND	0.0031	ND	0.002665	ND	0.002455	ND	0.002505	ND	0.00329	ND	0.002765	ND
8.7E+04	n	Cadmium	2.395		44.8		1.3		160		119		44.8		42.2		2	
--		Calcium	7775		50200		6300		41900		30800		42900		17300		8500	
1.3E+08	n	Chromium	34.4		28.1		40.4		50.2		40.5		28.4		23.5		31.4	
2.6E+04	n	Cobalt	10.8		5.92		11.4		3.41		6.23		2.42		3.57		11.4	
3.5E+06	n	Copper	40.8		352		22.8		1010		2040		358		550		58.1	
6.1E+07	n	Iron	26200		17900		27300		19600		23300		11200		19200		25100	
1.2E+04		Lead	160.5		4730		75.1		**27400**		**28900**		6260		9960		176	
--		Magnesium	6410		11900		6910		14200		9460		12200		5970		6390	
2.1E+06	n	Manganese	765.5		1730		667		2740		4220		2110		832		641	
2.6E+04	n	Mercury	0.228		10.7		0.0463		16.3		79.1		5.64		7.22		0.372	
1.7E+06	n	Nickel	1.1275	ND	1.125	ND	20.9		0.98	ND	0.9	ND	0.92	ND	24.4		1.015	ND
--		Potassium	6555		2430		6480		3590		2540		1820		3250		6060	
4.4E+05	n	Selenium	0.281	ND	0.2805	ND	0.284	ND	9.53		10.8		0.2295	ND	0.301	ND	0.253	ND
4.4E+05	n	Silver	0.01155	ND	33.8		0.0117	ND	169		145		32.2		35.8		0.0104	ND
--		Sodium	710.5		242		520		327		491		176		578		794	
8.7E+02	n	Thallium	0.002605	ND	4.6		0.00263	ND	6.25		3.34		0.002125	ND	0.00279	ND	0.002345	ND
4.4E+05	n	Vanadium	50.3		12.1		60		21.6		24.2		11		122		39.6	
2.6E+07	n	Zinc	274		10400		122		27900		29700		12100		8250		272	
--		Phosphate, Total (as P)	1450		1360		1450		5180		1660		1430		1580		883	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
PRG = preliminary remediation goal
SO = Soil

Table F-4d(2). Screening results for OU2 Upland soil samples compared with Empire Canyon recreational PRGs

Empire Canyon recreational PRGs (mg/kg)		Sample ID				OU2-0-SO-21D-0		OU2-0-SO-27I-0		OU2-0-SO-29F-0		OU2-0-SO-2A-0		OU2-0-SO-3B-0		OU2-0-SO-4B-0	
		Depth				0		0		0		0		0		0	
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date				9/22/2015		9/15/2015		9/15/2015		9/22/2015		9/24/2015		9/24/2015	
		Habitat	**N**	**count of NDs**	**% detected**	Upland		Upland		Upland		Upland		Upland		Upland	
8.7E+07	n	Aluminum	6	0	100%	29400		39000		31800		36100		21500		8310	
3.5E+04	n	Antimony	6	1	83%	12.3		0.158	ND	5.3		2610		18.1		1290	
1.4E+04	c	Arsenic	6	0	100%	23.9		11.4		14.6		760		21.9		799	
1.7E+07	n	Barium	6	0	100%	289		300		316		289		230		181	
1.7E+05	n	Beryllium	6	6	0%	0.002855	ND	0.002585	ND	0.00284	ND	0.002695	ND	0.00258	ND	0.00301	ND
8.7E+04	n	Cadmium	6	0	100%	4.39		1.15		2.34		40.7		3.34		293	
--		Calcium	6	0	100%	6870		5050		6710		1890		5560		15200	
1.3E+08	n	Chromium	6	0	100%	39.6		36.6		44.6		34.2		35.8		29.2	
2.6E+04	n	Cobalt	6	0	100%	10.4		11.9		12.9		5.36		10.8		6.17	
3.5E+06	n	Copper	6	0	100%	55.5		23.1		40.4		2230		56.2		2310	
6.1E+07	n	Iron	6	0	100%	22500		28400		25400		9970		23100		28100	
1.2E+04		Lead	6	0	100%	359		32.7		171		**20400**		485		**32900**	
--		Magnesium	6	0	100%	5220		6470		6000		1130		4310		5080	
2.1E+06	n	Manganese	6	0	100%	738		1040		1030		1770		945		2580	
2.6E+04	n	Mercury	6	1	83%	0.367		0.000745	ND	0.11		12.9		0.799		104	
1.7E+06	n	Nickel	6	4	33%	1.05	ND	19.2		1.04	ND	35.9		0.945	ND	1.105	ND
--		Potassium	6	0	100%	7590		9210		7650		1690		5360		2090	
4.4E+05	n	Selenium	6	5	17%	0.2615	ND	0.237	ND	0.26	ND	0.247	ND	0.236	ND	9.6	
4.4E+05	n	Silver	6	2	67%	2.35		0.00975	ND	0.0107	ND	196		2.1		112	
--		Sodium	6	0	100%	765		450		652		3370		463		765	
8.7E+02	n	Thallium	6	6	0%	0.002425	ND	0.002195	ND	0.00241	ND	0.00229	ND	0.00219	ND	0.002555	ND
4.4E+05	n	Vanadium	6	0	100%	55.2		59.6		60.7		28.2		50.7		16.6	
2.6E+07	n	Zinc	6	0	100%	597		87.6		230		18600		633		65300	
--		Phosphate, Total (as P)	6	0	100%	1250		590		858		865		1280		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
PRG = preliminary remediation goal
SO = Soil

Table F-4d(3). Screening results for OU3 Floodplain soil samples compared with Empire Canyon recreational PRGs

Empire Canyon recreational PRGs (mg/kg)		Sample ID				OU3-0-SO-ER-10S-0		OU3-0-SO-ER-12R-0		OU3-0-SO-ER-3M-0		OU3-0-SO-ER-5A-0		OU3-0-SO-ER-5G-0		OU3-0-SO-ER-5K-0	
		Depth				0		0		0		0		0		0	
		Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date				9/11/2015		9/14/2015		8/6/2015		8/6/2015		8/6/2015		9/10/2015	
		Habitat	**N**	**count of NDs**	**% detected**	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	149	0	100%	25100		28100		4290		32800		20100		35600	
3.5E+04	n	Antimony	149	4	97%	69.4		16.7		99.7		107		106		124	
1.4E+04	c	Arsenic	149	0	100%	57.1		19.5		364		130		69.9		109	
1.7E+07	n	Barium	149	0	100%	293		204		350		208		164		193	
1.7E+05	n	Beryllium	149	68	54%	0.0028	ND	0.002365	ND	0.00292	ND	0.002435	ND	0.002615	ND	0.002515	ND
8.7E+04	n	Cadmium	149	0	100%	7.2		2.91		12		11.7		23.8		15	
--		Calcium	149	0	100%	12500		7330		62300		6880		18100		12400	
1.3E+08	n	Chromium	149	2	99%	31.9		29.4		1.195	ND	44.3		27.5		43.1	
2.6E+04	n	Cobalt	149	0	100%	9.98		8.26		26.7		9.5		6.1		7.62	
3.5E+06	n	Copper	149	0	100%	136		40.5		67		245		251		226	
6.1E+07	n	Iron	149	0	100%	21900		24100		24600		24000		13400		26300	
1.2E+04		Lead	149	0	100%	1330		244		263		2720		1870		2760	
--		Magnesium	149	0	100%	6200		5440		3020		6110		4950		9370	
2.1E+06	n	Manganese	149	0	100%	640		693		15800		843		343		1650	
2.6E+04	n	Mercury	149	2	99%	1.52		0.253		0.325		1.83		1.28		3.19	
1.7E+06	n	Nickel	149	43	71%	1.03	ND	0.87	ND	1.075	ND	17.7		17.9		20.5	
--		Potassium	149	0	100%	5820		6810		1400		7600		4250		8180	
4.4E+05	n	Selenium	149	47	68%	0.2565	ND	0.2165	ND	0.2675	ND	0.223	ND	0.2395	ND	0.2305	ND
4.4E+05	n	Silver	149	12	92%	13.1		2.09		3.26		20.8		12		26.8	
--		Sodium	149	0	100%	757		521		596		402		502		555	
8.7E+02	n	Thallium	149	39	74%	0.002375	ND	0.002005	ND	7.3		4.64		6.65		7.01	
4.4E+05	n	Vanadium	149	2	99%	51.1		48.7		4.35		52.2		33.3		51.5	
2.6E+07	n	Zinc	149	0	100%	760		291		10300		2440		1610		6290	
--		Phosphate, Total (as P)	149	0	100%	703		612		1520		750		734		982	

Table F-4d(3). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-ER-7J-0		OU3-0-SO-FT-1B-0		OU3-0-SO-FT-1C-0		OU3-0-SO-FT-2B-0		OU3-0-SO-FT-2C-0		OU3-0-SO-FT-3B-0		OU3-0-SO-FT-3C-0		OU3-0-SO-FT-3D-0		OU3-0-SO-FT-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/10/2015		9/28/2015		9/25/2015		9/28/2015		9/25/2015		10/5/2015		9/25/2015		9/25/2015		9/28/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	4110		30200		13300		22100		5620		21700		4690		38700		15300	
3.5E+04	n	Antimony	13.4		53		373		62.3		244		924		253		190		48.9	
1.4E+04	c	Arsenic	23.3		47.5		371		41		231		372		207		67.1		94.4	
1.7E+07	n	Barium	147		244		136		252		61.5		211		83.5		417		411	
1.7E+05	n	Beryllium	0.00326	ND	0.003325	ND	0.0023	ND	0.00306	ND	0.002385	ND	0.003105	ND	0.002385	ND	0.00263	ND	0.00635	ND
8.7E+04	n	Cadmium	1.66		17.5		161		13.7		151		77.2		135		47.6		11.5	
--		Calcium	176000		11100		54300		9950		81200		8740		81200		7700		27500	
1.3E+08	n	Chromium	1.33	ND	37.9		34.2		32.3		31.7		26.1		59.3		41.1		24.5	
2.6E+04	n	Cobalt	6.07		11.8		9.01		8.39		15.8		12		11		14.5		16.8	
3.5E+06	n	Copper	27.8		131		493		124		430		1230		350		256		118	
6.1E+07	n	Iron	10600		26400		35600		22500		63100		20900		46700		26800		26400	
1.2E+04		Lead	128		907		9440		1230		8030		**12200**		5050		1420		1160	
--		Magnesium	3480		7540		17600		5260		23400		4660		20800		7110		6480	
2.1E+06	n	Manganese	5940		1480		3130		862		2390		3000		2150		286		1790	
2.6E+04	n	Mercury	0.139		14.9		6.94		6.49		1.76		167		2.34		40.1		2.74	
1.7E+06	n	Nickel	1.195	ND	1.22	ND	0.845	ND	1.125	ND	0.945	ND	1.14	ND	0.875	ND	21.2		2.335	ND
--		Potassium	1430		6880		3720		6180		2550		3690		2270		8550		3440	
4.4E+05	n	Selenium	0.2985	ND	0.3045	ND	8.76		0.28	ND	14.3		0.284	ND	10.9		0.241	ND	0.58	ND
4.4E+05	n	Silver	0.01225	ND	8.3		77.2		7.61		31.8		75.7		28.3		10.8		7.05	
--		Sodium	420		1350		234		448		193		655		137		915		2930	
8.7E+02	n	Thallium	0.002765	ND	0.00282	ND	5.42		0.002595	ND	4.58		0.002635	ND	3.56		0.002235	ND	0.0054	ND
4.4E+05	n	Vanadium	5.69		55.1		16.8		39.6		1.62		37.9		3.41		62.3		24.1	
2.6E+07	n	Zinc	271		1430		30100		1580		25200		11600		21900		1970		1540	
--		Phosphate, Total (as P)	428		1710		1770		1040		2050		1530		1770		1030		1300	

Table F-4d(3). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-FT-4B-0		OU3-0-SO-FT-4C-0		OU3-0-SO-FT-5C-0		OU3-0-SO-FT-6B-0		OU3-0-SO-FT-6D-0		OU3-0-SO-MRL-15D-0		OU3-0-SO-MRL-15E-0		OU3-0-SO-MRL-16D-0		OU3-0-SO-MRL-16F-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/25/2015		9/25/2015		9/25/2015		9/24/2015		9/25/2015		9/29/2015		9/29/2015		9/30/2015		9/28/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	9140		4640		5640		52200		23900		34600		27100		40200		19400	
3.5E+04	n	Antimony	355		183		373		152		102		4.47		1460		4.27		1800	
1.4E+04	c	Arsenic	431		155		463		129		34.2		16.1		1250		22.4		1130	
1.7E+07	n	Barium	633		80.2		115		347		440		288		206		275		215	
1.7E+05	n	Beryllium	0.00306	ND	0.00258	ND	0.00244	ND	0	ND	0.004375	ND	0.002635	ND	0.00411	ND	0.00258	ND	0.00291	ND
8.7E+04	n	Cadmium	34		48.8		120		89		18.3		1.51		99		1.96		77.6	
--		Calcium	41600		96700		53200		14300		11200		7520		54000		5290		10600	
1.3E+08	n	Chromium	42.7		32.3		32		74		50.8		41.5		143		48.3		25.3	
2.6E+04	n	Cobalt	7.13		6.34		15		10		8.1		10.9		3.31		17.6		9.41	
3.5E+06	n	Copper	408		263		838		589		224		34		1920		36.8		3140	
6.1E+07	n	Iron	42700		18900		60100		33700		18400		25800		23200		29100		27100	
1.2E+04		Lead	7940		4390		9750		6070		2580		113		**33000**		191		**40700**	
--		Magnesium	14600		24400		16300		12700		7850		7080		19900		6510		3590	
2.1E+06	n	Manganese	1850		2440		2380		796		798		1060		2280		1310		2740	
2.6E+04	n	Mercury	4.82		2.02		8.57		16		2.47		0.304		33		0.269		2950	
1.7E+06	n	Nickel	0.98	ND	0.89	ND	0.895	ND	29		1.285	ND	19.9		1.51	ND	24.7		1.07	ND
--		Potassium	3230		2300		2390		10100		6430		9380		9710		9490		3230	
4.4E+05	n	Selenium	22.9		0.2365	ND	21.8		12		0.401	ND	0.2415	ND	20.6		0.236	ND	12.3	
4.4E+05	n	Silver	46		36.5		55.8		46		14.3		0.0099	ND	175		0.0097	ND	18.5	
--		Sodium	265		164		235		558		659		315		390		266		1120	
8.7E+02	n	Thallium	7.62		0.00219	ND	7.76		6		0.003715	ND	0.002235	ND	10.1		0.00219	ND	0.00247	ND
4.4E+05	n	Vanadium	12.3		7.72		0.07	ND	84		46.3		63.6		67.9		63.4		39.2	
2.6E+07	n	Zinc	4900		12800		22300		10000		2780		192		22900		336		26800	
--		Phosphate, Total (as P)	1680		1610		1690		1410		1530		1320		4350		746		2240	

Table F-4d(3). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-MRL-16H-0		OU3-0-SO-MRL-18F-0		OU3-0-SO-MRU-10C-0		OU3-0-SO-MRU-11C-0		OU3-0-SO-MRU-12C-0		OU3-0-SO-MRU-13C-0		OU3-0-SO-MRU-1C-0		OU3-0-SO-MRU-1D-0	
		Depth	0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		Dups ave OU3		OU3	
		Sample date	9/28/2015		9/29/2015		10/1/2015		10/1/2015		10/1/2015		10/1/2015		11/10/2014		11/12/2014	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	35800		33700		15000		2.08		7270		41100		17160		21100	
3.5E+04	n	Antimony	4.33		188		290		663		374		290		165.5		24.3	
1.4E+04	c	Arsenic	14.4		75.5		171		793		568		182		192		24.1	
1.7E+07	n	Barium	269		292		303		654		68.4		375		291		186	
1.7E+05	n	Beryllium	0.002655	ND	0.00381	ND	0.002705	ND	0.003065	ND	0.00242	ND	0.00266	ND	0.0030475	ND	0.00298	ND
8.7E+04	n	Cadmium	2.26		91.4		50.5		148		70.4		44.6		59.1		7.1	
--		Calcium	11900		10500		12600		5.43		42600		14400		18450		15000	
1.3E+08	n	Chromium	38.3		45.6		18.6		98.6		29.8		76.3		47.15		50.6	
2.6E+04	n	Cobalt	9.26		12.4		6.03		3.93		4.11		9.91		14.9		11	
3.5E+06	n	Copper	38.9		451		561		854		541		909		334.5		74.7	
6.1E+07	n	Iron	25200		26300		19600		4.09		15300		28700		35650		20400	
1.2E+04		Lead	88.2		1790		7060		**14000**		8950		8930		4005		660	
--		Magnesium	6510		7070		3150		2.51		10400		13700		9690		8400	
2.1E+06	n	Manganese	541		763		1360		2790		1950		1510		2570		1140	
2.6E+04	n	Mercury	0.124		58.7		8.57		16.4		5.28		36.4		2.7535		1.53	
1.7E+06	n	Nickel	19.6		1.4	ND	0.99	ND	1.125	ND	0.89	ND	25.5		13.2725		1.095	ND
--		Potassium	8580		7040		2350		0.884		2120		7240		5825		7640	
4.4E+05	n	Selenium	0.243	ND	0.349	ND	0.2475	ND	18.9		8.55		10.4		0.27925	ND	0.273	ND
4.4E+05	n	Silver	0.01	ND	17		26.4		85.6		45.2		77.6		30.55		4.59	
--		Sodium	427		593		559		0.0215		276		671		375		705	
8.7E+02	n	Thallium	0.00225	ND	0.003235	ND	0.002295	ND	21.6		8.51		8.31		2.211325		0.00253	ND
4.4E+05	n	Vanadium	54.3		54		26.5		0.00277		21.8		72.4		44.15		48.9	
2.6E+07	n	Zinc	286		3280		12000		15300		19000		9500		5635		1230	
--		Phosphate, Total (as P)	1430		1340		1030		3090		1530		1470		1990		1720	

Table F-4d(3). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-MRU-2B-0		OU3-0-SO-MRU-2C-0		OU3-0-SO-MRU-2D-0		OU3-0-SO-MRU-3C-0		OU3-0-SO-MRU-3D-0		OU3-0-SO-MRU-4C-0		OU3-0-SO-MRU-4D-0		OU3-0-SO-MRU-5C-0		OU3-0-SO-MRU-5D-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		Dups ave OU3		OU3		OU3	
		Sample date	11/10/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/11/2014		11/12/2014	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	20900		26800		29000		31600		19600		17000		28450		26200		26300	
3.5E+04	n	Antimony	100		40.1		0.1675	ND	24.7		0.19	ND	0.1725	ND	8.1		61.4		13.2	
1.4E+04	c	Arsenic	80		51.5		7.23		37.5		7.5		9.02		15.35		151		19.2	
1.7E+07	n	Barium	225		220		218		328		167		141		257.5		318		258	
1.7E+05	n	Beryllium	0.003165	ND	0.00298	ND	0.002745	ND	0.003015	ND	0.00311	ND	0.00282	ND	0.003135	ND	0.003305	ND	0.002925	ND
8.7E+04	n	Cadmium	13		31.6		2.4		9.5		3.3		1.21		2.665		65.1		4.88	
--		Calcium	12100		14400		8660		6690		14200		5800		5525		33700		5600	
1.3E+08	n	Chromium	62.7		43.8		37.1		36		66.8		37.4		35.45		47.6		38.4	
2.6E+04	n	Cobalt	7.04		10.5		15.9		12.3		28.8		5.65		11		21.9		10.9	
3.5E+06	n	Copper	160		144		31.4		111		58.9		32.4		35.15		216		46	
6.1E+07	n	Iron	18000		21200		30300		28100		22700		13200		25750		27200		22700	
1.2E+04		Lead	2460		1250		42.6		868		68.2		27.7		185		2040		388	
--		Magnesium	4120		7440		6620		6920		8710		3960		6270		10100		7220	
2.1E+06	n	Manganese	925		1490		776		879		576		336		913		15600		1170	
2.6E+04	n	Mercury	3.98		2.77		0.00142	ND	1.01		0.0804		0.00132	ND	0.295		3.88		0.615	
1.7E+06	n	Nickel	1.165	ND	1.095	ND	1.01	ND	1.105	ND	24.8		1.035	ND	11.4425		40.4		21.2	
--		Potassium	5640		6010		5430		7930		4380		4120		8775		5640		8920	
4.4E+05	n	Selenium	0.29	ND	0.273	ND	0.2515	ND	0.276	ND	0.2845	ND	0.2585	ND	0.28725	ND	0.303	ND	0.268	ND
4.4E+05	n	Silver	10.4		8.87		0.01035	ND	3.88		0.0117	ND	0.0106	ND	0.011825	ND	16.6		1.91	
--		Sodium	417		477		2190		359		2080		457		385.5		493		277	
8.7E+02	n	Thallium	0.002685	ND	0.00253	ND	0.00233	ND	0.00256	ND	0.00264	ND	0.002395	ND	0.0026625	ND	0.002805	ND	0.002485	ND
4.4E+05	n	Vanadium	39.8		50.3		83.7		62.3		56.4		33.8		64.35		46.1		61.2	
2.6E+07	n	Zinc	1900		2990		166		1250		260		59.7		355.5		12500		708	
--		Phosphate, Total (as P)	3760		1800		927		1260		847		1410		1255		2010		1640	

Table F-4d(3). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-MRU-6C-0		OU3-0-SO-MRU-7C-0		OU3-0-SO-MRU-7D-0		OU3-0-SO-MRU-8C-0		OU3-0-SO-NR-11J-0		OU3-0-SO-NR-13L-0		OU3-0-SO-NR-13M-0		OU3-0-SO-NR-14M-0		OU3-0-SO-NR-14P-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	11/11/2014		9/30/2015		10/1/2015		10/1/2015		9/21/2015		9/18/2015		9/18/2015		9/18/2015		9/21/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	30300		23200		46700		26100		26700		33300		7510		7060		26400	
3.5E+04	n	Antimony	39.7		294		6.75		30		2290		12		600		465		38.8	
1.4E+04	c	Arsenic	41.1		246		15.7		55.2		846		19		568		384		33.7	
1.7E+07	n	Barium	191		245		369		364		320		393		149		192		175	
1.7E+05	n	Beryllium	0.00299	ND	0.00233	ND	0.002515	ND	0.00261	ND	0.002875	ND	0.003315	ND	0.00276	ND	0.00252	ND	0.00298	ND
8.7E+04	n	Cadmium	32.3		37.6		2.18		5.83		49.7		4.51		118		51.8		30.7	
--		Calcium	24500		19300		15100		21900		2580		10800		38400		26900		7930	
1.3E+08	n	Chromium	60.2		55.7		47		66.6		14.8		43.3		72.8		40.5		29.1	
2.6E+04	n	Cobalt	7.95		11.5		14.3		9.02		5.11		7.55		5.63		5.99		7.2	
3.5E+06	n	Copper	144		505		26.3		93.3		2200		44.2		950		766		86	
6.1E+07	n	Iron	21600		34800		32200		26000		11100		25700		21200		22100		19100	
1.2E+04		Lead	1120		7060		184		837		**22200**		141		**15800**		7920		593	
--		Magnesium	8770		8870		16800		5050		1380		7940		10100		8100		5790	
2.1E+06	n	Manganese	1360		2200		1590		1270		874		252		2750		1560		448	
2.6E+04	n	Mercury	1.48		15.9		0.344		2.64		676		0.274		17.3		26.9		0.999	
1.7E+06	n	Nickel	29.8		20.6		26.1		20.6		25.2		23.1		1.015	ND	0.925	ND	1.095	ND
--		Potassium	6520		5080		16800		6990		1800		7210		2310		1850		7460	
4.4E+05	n	Selenium	0.274	ND	8.14		0.2305	ND	0.239	ND	0.263	ND	0.3035	ND	0.2525	ND	10.3		0.273	ND
4.4E+05	n	Silver	9.2		47.2		0.00945	ND	5.18		230		0.01245	ND	74.2		42		4.25	
--		Sodium	912		276		484		612		2600		934		301		329		586	
8.7E+02	n	Thallium	0.00254	ND	3.56		0.002135	ND	0.002215	ND	0.00244	ND	0.00281	ND	5.54		3.75		0.00253	ND
4.4E+05	n	Vanadium	51.5		67.1		76.1		53		30.7		50		14.7		13.2		37.6	
2.6E+07	n	Zinc	5060		8100		339		967		14300		788		22100		12800		4290	
--		Phosphate, Total (as P)	3620		1740		1000		5540		909		859		1910		1740		650	

Table F-4d(3). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-NR-15M-0		OU3-0-SO-NR-15P-0		OU3-0-SO-NR-3F-0		OU3-0-SO-NR-7I-0		OU3-0-SO-NR-9J-0		OU3-0-SO-WR-1B-0		OU3-0-SO-WR-1F-0		OU3-0-SO-WR-2B-0		OU3-0-SO-WR-2F-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/17/2015		9/21/2015		9/22/2015		9/21/2015		9/21/2015		8/4/2015		7/31/2015		8/4/2015		7/31/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	9180		5780		32900		33300		6170		4670		7670		6090		13100	
3.5E+04	n	Antimony	805		343		106		26.6		271		172		253		328		308	
1.4E+04	c	Arsenic	701		307		96		26.6		297		189		287		340		264	
1.7E+07	n	Barium	174		160		282		365		259		155		227		237		186	
1.7E+05	n	Beryllium	0.00236	ND	0.002705	ND	0	ND	0.00285	ND	0.00296	ND	0.00258	ND	0.00296	ND	0.002325	ND	0.003325	ND
8.7E+04	n	Cadmium	100		40.3		31		9.75		76.4		72.6		78.7		97.4		92.1	
--		Calcium	33000		27000		10100		10500		43900		107000		44900		50700		104000	
1.3E+08	n	Chromium	34.5		23.2		45		45.3		30.1		16.2		28.3		23.5		33.9	
2.6E+04	n	Cobalt	6.38		7.99		8		10		52.4		5.56		8.36		11.8		8.47	
3.5E+06	n	Copper	1210		476		205		70.2		390		227		398		474		586	
6.1E+07	n	Iron	20300		32900		25800		25200		122000		22300		40100		28800		19200	
1.2E+04		Lead	**16300**		7000		3060		597		6630		3470		5550		6370		5750	
--		Magnesium	10300		8770		7880		9130		8600		10700		14100		10900		11400	
2.1E+06	n	Manganese	2630		1450		1070		380		1600		1710		2490		2690		1230	
2.6E+04	n	Mercury	27.6		8.88		17		3.11		11.1		2.24		3.93		5.75		13.3	
1.7E+06	n	Nickel	0.865	ND	0.995	ND	1	ND	21.5		1.09	ND	0.95	ND	1.085	ND	20.9		1.22	ND
--		Potassium	2690		1710		8290		8010		1530		1510		2780		1820		4450	
4.4E+05	n	Selenium	10.2		13.4		0	ND	0.261	ND	30.9		8.9		16		13.3		0.3045	ND
4.4E+05	n	Silver	96		29.6		11		2.62		39		16.1		29.1		28.3		34	
--		Sodium	382		213		1190		1380		258		219		181		388		5960	
8.7E+02	n	Thallium	5.13		3.75		0	ND	0.00242	ND	0.002515	ND	48.1		15.2		20.6		31.8	
4.4E+05	n	Vanadium	20.4		5.91		47		45.8		0.085	ND	6.41		5.45		9.62		19.6	
2.6E+07	n	Zinc	20900		10100		5240		975		12400		15200		14600		34700		26000	
--		Phosphate, Total (as P)	1560		1310		942		1970		2700		1520		1550		1460		971	

Table F-4d(3). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-WR-5B-0		OU3-0-SO-WR-5F-0		OU3-0-TL-MR2	
		Depth	0		0		0001	
					Dups ave			
		Operable Unit	OU3		OU3		OU3	
		Sample date	8/4/2015		7/31/2015		3/2/2015	
		Habitat	Floodplain		Floodplain		Floodplain	
8.7E+07	n	Aluminum	9240		4520		14000	
3.5E+04	n	Antimony	207		192		519	
1.4E+04	c	Arsenic	191		418		442	
1.7E+07	n	Barium	180		54.85		143	
1.7E+05	n	Beryllium	0.00288	ND	0.00254	ND	0.002525	ND
8.7E+04	n	Cadmium	123		88.85		58.9	
--		Calcium	142000		49450		40700	
1.3E+08	n	Chromium	21.8		28.8		33.9	
2.6E+04	n	Cobalt	9.87		3.65		6.57	
3.5E+06	n	Copper	345		354.5		823	
6.1E+07	n	Iron	15700		16500		18000	
1.2E+04		Lead	5040		3625		11100	
--		Magnesium	9180		17750		6040	
2.1E+06	n	Manganese	1340		2345		2070	
2.6E+04	n	Mercury	5.88		2.8		22.7	
1.7E+06	n	Nickel	1.055	ND	0.9325	ND	0.925	ND
--		Potassium	2580		1525		3140	
4.4E+05	n	Selenium	0.2635	ND	0.2325	ND	0.2315	ND
4.4E+05	n	Silver	25.3		22		54.7	
--		Sodium	1180		252.5		264	
8.7E+02	n	Thallium	14.5		8.98		0.00268	ND
4.4E+05	n	Vanadium	16.8		6.44		34.6	
2.6E+07	n	Zinc	26500		17950		13700	
--		Phosphate, Total (as P)	1220		1305		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
PRG = preliminary remediation goal
SO = Soil
TL = Tailings
WR = OU3 P.C. West Reach

Table F-4d(4). Screening results for OU3 Upland soil samples compared with Empire Canyon recreational PRGs

Empire Canyon recreational PRGs (mg/kg)		Sample ID / Depth / Operable Unit / Sample date / Habitat	N	count of NDs	% detected	OU3-0-SO-ER-11D-0		OU3-0-SO-ER-11S-0		OU3-0-SO-ER-4B-0		OU3-0-SO-ER-4Q-0		OU3-0-SO-ER-6A-0		OU3-0-SO-ER-7P-0		OU3-0-SO-ER-8A-0	
		Depth				0		0		0		0		0		0		0	
		Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date				9/14/2015		9/11/2015		9/14/2015		8/5/2015		9/14/2015		9/10/2015		9/14/2015	
		Habitat				Upland		Upland		Upland		Upland		Upland		Upland		Upland	
8.7E+07	n	Aluminum	47	0	100%	35000		33700		31700		26600		30400		30100		26800	
3.5E+04	n	Antimony	47	5	89%	39.7		7.7		62.8		20.4		4.2		116		8.71	
1.4E+04	c	Arsenic	47	0	100%	42.3		16.3		80.5		41.2		10.9		103		11.1	
1.7E+07	n	Barium	47	0	100%	225		189		226		344		198		228		167	
1.7E+05	n	Beryllium	47	46	2%	0.00246	ND	0.002575	ND	0.00259	ND	0.002435	ND	0.00224	ND	0.002555	ND	0.002675	ND
8.7E+04	n	Cadmium	47	1	98%	8.79		1.77		10.7		5.15		2.26		13.6		4.2	
--		Calcium	47	0	100%	9740		7040		7910		6680		6550		7540		26300	
1.3E+08	n	Chromium	47	0	100%	54.5		34.7		39.1		37.1		29.8		40.5		30.7	
2.6E+04	n	Cobalt	47	0	100%	11.1		8.03		8.91		13		9.31		7.98		7.24	
3.5E+06	n	Copper	47	1	98%	109		30.7		135		78.6		28.1		193		34.1	
6.1E+07	n	Iron	47	0	100%	32800		24800		24300		22800		26900		23200		22300	
1.2E+04		Lead	47	0	100%	1030		91.6		1520		642		67.5		2500		176	
--		Magnesium	47	0	100%	7520		7190		6220		5540		5550		6640		6730	
2.1E+06	n	Manganese	47	0	100%	1140		488		894		1180		811		760		429	
2.6E+04	n	Mercury	47	1	98%	1.51		0.122		0.911		0.405		0.118		2.04		0.34	
1.7E+06	n	Nickel	47	22	53%	18.4		0.945	ND	0.95	ND	18.5		0.82	ND	0.94	ND	0.98	ND
--		Potassium	47	0	100%	7910		7160		6890		6460		7410		7900		5660	
4.4E+05	n	Selenium	47	47	0%	0.2255	ND	0.236	ND	0.237	ND	0.223	ND	0.205	ND	0.234	ND	0.245	ND
4.4E+05	n	Silver	47	16	66%	8.19		0.0097	ND	13.7		4.13		0.00845	ND	19.9		1.78	
--		Sodium	47	0	100%	565		330		419		432		508		586		368	
8.7E+02	n	Thallium	47	46	2%	6.48		0.002185	ND	0.0022	ND	0.002065	ND	0.0019	ND	0.00217	ND	0.00227	ND
4.4E+05	n	Vanadium	47	0	100%	63.7		58.7		59.6		55.4		52.6		46		52.9	
2.6E+07	n	Zinc	47	0	100%	1870		166		1540		661		286		2270		659	
--		Phosphate, Total (as P)	47	0	100%	892		517		579		565		596		973		711	

Table F-4d(4). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-FT-4E-0		OU3-0-SO-FT-5E-0		OU3-0-SO-MRL-14G-0		OU3-0-SO-MRL-14H-0		OU3-0-SO-MRL-14I-0		OU3-0-SO-MRL-14J-0		OU3-0-SO-MRL-15G-0		OU3-0-SO-MRL-15H-0		OU3-0-SO-MRL-15I-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/25/2015		9/25/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
8.7E+07	n	Aluminum	32500		32000		32500		31300		36000		28000		30000		35000		33200	
3.5E+04	n	Antimony	13.1		13.5		21.7		9.51		40.7		5.48		3.9		7.87		51.5	
1.4E+04	c	Arsenic	20		19.2		24.2		24.5		43.4		16.4		12.7		21.9		62	
1.7E+07	n	Barium	327		219		200		220		195		278		204		238		237	
1.7E+05	n	Beryllium	0.00306	ND	0.00274	ND	0.00284	ND	0.00273	ND	0.00335	ND	0.00261	ND	0.002805	ND	0.00256	ND	0.00316	ND
8.7E+04	n	Cadmium	3.26		9.86		5.44		3.3		8.24		1.88		1.64		3.51		9.64	
--		Calcium	8590		6040		9880		8790		43800		5820		7350		8170		9420	
1.3E+08	n	Chromium	41.6		33.9		39.6		39.1		72.5		36		69.9		39.7		45	
2.6E+04	n	Cobalt	7.8		8.52		7.44		9.4		10.1		11.8		7.73		9.1		12.4	
3.5E+06	n	Copper	59.9		55.1		66.5		44.2		116		36.6		31.8		41.9		126	
6.1E+07	n	Iron	22700		24100		24300		24000		24800		24400		22300		25400		23800	
1.2E+04		Lead	375		288		459		213		1290		166		83.1		146		1210	
--		Magnesium	7170		5690		6940		6840		9380		4950		6050		6560		6830	
2.1E+06	n	Manganese	315		558		410		484		759		991		252		706		1960	
2.6E+04	n	Mercury	2.03		1.54		0.651		0.352		2.49		0.154		0.154		0.291		1.81	
1.7E+06	n	Nickel	1.125	ND	1.005	ND	1.045	ND	18.9		33.6		18.2		29.9		19		22.9	
--		Potassium	8010		8070		8240		7250		7600		6950		7240		8320		7260	
4.4E+05	n	Selenium	0.28	ND	0.251	ND	0.26	ND	0.25	ND	0.307	ND	0.239	ND	0.257	ND	0.2345	ND	0.2895	ND
4.4E+05	n	Silver	2.14		2.19		4.44		1.73		11.3		0.0098	ND	0.01055	ND	1.33		9.07	
--		Sodium	445		347		376		352		434		390		312		406		591	
8.7E+02	n	Thallium	0.002595	ND	0.002325	ND	0.00241	ND	0.002315	ND	0.002845	ND	0.002215	ND	0.00238	ND	0.002175	ND	0.00268	ND
4.4E+05	n	Vanadium	61.7		57.6		57.8		55.1		65.7		59.1		53.6		60.8		65.3	
2.6E+07	n	Zinc	307		589		1120		522		2170		233		203		426		1660	
--		Phosphate, Total (as P)	1240		1190		1200		1090		843		880		1130		770		874	

Table F-4d(4). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-MRL-15J-0		OU3-0-SO-MRL-15K-0		OU3-0-SO-MRL-16G-0		OU3-0-SO-MRL-16I-0		OU3-0-SO-MRL-16J-0		OU3-0-SO-MRL-16K-0		OU3-0-SO-MRL-17G-0		OU3-0-SO-MRL-17H-0		OU3-0-SO-MRL-18G-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/29/2015		9/29/2015		9/28/2015		9/28/2015		9/28/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
8.7E+07	n	Aluminum	40800		29000		33700		36000		35500		38900		33000		35400		34500	
3.5E+04	n	Antimony	244		0.165	ND	12.9		37.7		16.8		77.3		4.09		4.12		4.1	
1.4E+04	c	Arsenic	223		11		18.8		41.8		25.1		75.1		17.1		18		19.3	
1.7E+07	n	Barium	197		286		216		197		241		335		201		267		332	
1.7E+05	n	Beryllium	0.003405	ND	0.002705	ND	0.0027	ND	0.002825	ND	0.0027	ND	0.002985	ND	0.002775	ND	0.0027	ND	0.00265	ND
8.7E+04	n	Cadmium	27.5		1.42		2.33		6.03		4.32		12.2		2.23		1.63		1.82	
--		Calcium	13900		5900		8400		7790		7500		18100		10700		6820		8060	
1.3E+08	n	Chromium	57.7		46.2		34.2		39.7		41		42.9		33.6		33.9		42.9	
2.6E+04	n	Cobalt	8.14		11.9		9.83		8.31		8.48		12.3		9.42		12.6		11.3	
3.5E+06	n	Copper	522		34.4		48.9		94.9		54		165		34		34.4		45.9	
6.1E+07	n	Iron	30100		24900		23700		24900		27400		27400		24700		28700		28300	
1.2E+04		Lead	6640		94.3		209		1010		256		1710		83.8		83.9		109	
--		Magnesium	10800		5210		6290		6940		6250		8370		6200		5760		7010	
2.1E+06	n	Manganese	684		1020		657		424		430		1550		556		921		1090	
2.6E+04	n	Mercury	11.3		0.0952		0.235		1.03		0.373		3.2		0.141		0.122		0.231	
1.7E+06	n	Nickel	1.25	ND	23.4		18.4		19.1		19.3		21.6		1.02	ND	21.7		23	
--		Potassium	9330		8090		8060		8270		7440		8540		7140		6890		8940	
4.4E+05	n	Selenium	0.312	ND	0.2475	ND	0.2475	ND	0.259	ND	0.247	ND	0.2735	ND	0.254	ND	0.247	ND	0.2425	ND
4.4E+05	n	Silver	54.8		0.0102	ND	1.6		7.26		2.24		15		0.01045	ND	0.01015	ND	0.00995	ND
--		Sodium	571		527		353		339		488		460		337		271		483	
8.7E+02	n	Thallium	0.00289	ND	0.002295	ND	0.00229	ND	0.0024	ND	0.00229	ND	0.002535	ND	0.002355	ND	0.00229	ND	0.00225	ND
4.4E+05	n	Vanadium	76.7		58.5		47.3		52.4		61.7		77.4		67.5		71.9		65.6	
2.6E+07	n	Zinc	7800		148		407		1330		622		2610		341		186		245	
--		Phosphate, Total (as P)	1520		975		1740		816		567		1080		1020		1090		1450	

Table F-4d(4). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-MRL-19G-0		OU3-0-SO-MRU-10B-0		OU3-0-SO-MRU-12B-0		OU3-0-SO-MRU-12E-0		OU3-0-SO-MRU-13B-0		OU3-0-SO-MRU-1B-0		OU3-0-SO-MRU-3A-0		OU3-0-SO-MRU-3B-0		OU3-0-SO-MRU-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/29/2015		9/30/2015		9/30/2015		10/1/2015		9/30/2015		11/10/2014		11/10/2014		11/10/2014		11/10/2014	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
8.7E+07	n	Aluminum	40200		27100		26600		28600		37600		18300		28100		24200		30000	
3.5E+04	n	Antimony	0.16	ND	12.9		22.1		6.68		24		37.3		29		112		8.16	
1.4E+04	c	Arsenic	19.9		22.6		39.3		22		37.5		42		33.9		98.7		16.8	
1.7E+07	n	Barium	306		331		318		289		460		200		261		302		253	
1.7E+05	n	Beryllium	0.002615	ND	0.002715	ND	0.00294	ND	0.003025	ND	0.00283	ND	0.003125	ND	0.003235	ND	0.003105	ND	0.003115	ND
8.7E+04	n	Cadmium	1.8		4.01		11		2.95		4.53		10.9		6.67		17.4		2.94	
--		Calcium	6760		6630		15100		12000		5630		10700		15200		13100		21400	
1.3E+08	n	Chromium	40.1		32.6		45.7		131		30.8		72.1		91		73.7		74.5	
2.6E+04	n	Cobalt	14.2		13.3		8.71		9.56		11		6.9		8.54		10.6		10.8	
3.5E+06	n	Copper	34.8		60		294		39.5		62		89.3		97.3		210		76.1	
6.1E+07	n	Iron	29100		27500		36400		22300		28600		15800		21100		20600		26300	
1.2E+04		Lead	83.2		247		925		191		702		1170		914		3040		213	
--		Magnesium	6690		4520		6120		8150		4480		3480		5630		4620		6020	
2.1E+06	n	Manganese	1310		838		662		1230		1070		788		1090		1850		1590	
2.6E+04	n	Mercury	0.0913		0.712		0.709		0.211		1.33		0.712		1.15		0.526		0.306	
1.7E+06	n	Nickel	22.2		19.8		1.08	ND	26.8		1.04	ND	1.15	ND	1.19	ND	22.8		23.9	
--		Potassium	9550		6600		6550		8800		8580		5060		8660		6640		8930	
4.4E+05	n	Selenium	0.2395	ND	0.2485	ND	0.2695	ND	0.277	ND	0.2595	ND	0.2865	ND	0.2965	ND	0.2845	ND	0.2855	ND
4.4E+05	n	Silver	0.00985	ND	2.52		5.11		0.0114	ND	2.96		6.53		6.93		13.9		0.0117	ND
--		Sodium	388		294		2310		385		224		352		452		416		424	
8.7E+02	n	Thallium	0.00222	ND	0.002305	ND	0.002495	ND	0.002565	ND	0.0024	ND	0.002655	ND	0.002745	ND	0.002635	ND	0.002645	ND
4.4E+05	n	Vanadium	69.6		68.3		46.5		50		62.8		37.9		51.4		49.3		55.1	
2.6E+07	n	Zinc	192		861		1940		328		993		1380		994		2260		424	
--		Phosphate, Total (as P)	1030		1240		625		3340		1100		4020		5460		4170		68400	

Table F-4d(4). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-MRU-4B-0		OU3-0-SO-MRU-5B-0		OU3-0-SO-MRU-6A-0		OU3-0-SO-MRU-6B-0		OU3-0-SO-MRU-6D-0		OU3-0-SO-MRU-7B-0		OU3-0-SO-MRU-8B-0		OU3-0-SO-MRU-8D-0		OU3-0-SO-MRU-9B-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	11/10/2014		11/11/2014		11/11/2014		11/11/2014		11/12/2014		9/30/2015		9/30/2015		10/1/2015		9/30/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
8.7E+07	n	Aluminum	17100		12700		20900		14900		22100		17700		25400		35400		29100	
3.5E+04	n	Antimony	61.7		23.4		14.3		0.2435	ND	16.7		28.5		213		8.23		21.5	
1.4E+04	c	Arsenic	42.8		26.6		22		5.55		24.3		31.7		244		18.3		34.3	
1.7E+07	n	Barium	228		181		256		164		207		154		269		228		221	
1.7E+05	n	Beryllium	0.00314	ND	2.28		0.003235	ND	0.003985	ND	0.00284	ND	0.00243	ND	0.003255	ND	0.003265	ND	0.00262	ND
8.7E+04	n	Cadmium	14.1		9.99		3.47		0.0113	ND	7.88		5.59		41.6		2.68		5.05	
--		Calcium	17300		13900		27600		16300		11200		64300		20100		13500		5800	
1.3E+08	n	Chromium	40.1		17.6		67.7		28.8		29.4		24.3		69.4		43.7		41	
2.6E+04	n	Cobalt	6.11		3.56		7.88		5.05		9.16		5.87		14.8		14.4		15.7	
3.5E+06	n	Copper	152		74.4		37		1.025	ND	48		64.1		473		35.9		51.8	
6.1E+07	n	Iron	14100		11600		18800		12100		19400		16600		33200		30700		32500	
1.2E+04		Lead	1600		744		371		21.4		511		906		6610		217		495	
--		Magnesium	4010		2750		6710		7610		8320		5550		11700		11100		6200	
2.1E+06	n	Manganese	984		269		956		354		1480		2810		4600		1060		965	
2.6E+04	n	Mercury	2.54		0.783		0.606		0.00175	ND	0.815		0.993		17.7		0.284		1.02	
1.7E+06	n	Nickel	1.155	ND	1.235	ND	1.185	ND	1.465	ND	1.045	ND	0.895	ND	29.2		24.7		23.4	
--		Potassium	5740		2190		5940		3360		7360		4750		5830		5010		5070	
4.4E+05	n	Selenium	0.288	ND	0.308	ND	0.296	ND	0.365	ND	0.2605	ND	0.2225	ND	0.298	ND	0.299	ND	0.24	ND
4.4E+05	n	Silver	6.9		2.92		0.01215	ND	0.015	ND	2.78		4.42		50.2		0.0123	ND	3.15	
--		Sodium	330		697		425		212		242		295		368		747		238	
8.7E+02	n	Thallium	0.002665	ND	0.00285	ND	0.002745	ND	0.00338	ND	0.00241	ND	0.002065	ND	0.00276	ND	0.00277	ND	0.002225	ND
4.4E+05	n	Vanadium	33.6		20.7		43.5		30.9		49		41		78.6		68.2		79.6	
2.6E+07	n	Zinc	1150		1610		468		67.4		1130		908		9290		402		971	
--		Phosphate, Total (as P)	1900		1200		2680		436		1010		2230		1710		1240		1290	

Table F-4d(4). (cont.)

Empire Canyon recreational PRGs (mg/kg)		Sample ID	OU3-0-SO-NR-12Q-0		OU3-0-SO-NR-2C-0		OU3-0-SO-NR-2F-0		OU3-0-SO-NR-4J-0	
		Depth	0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3	
		Sample date	10/5/2015		9/22/2015		9/22/2015		9/22/2015	
		Habitat	Upland		Upland		Upland		Upland	
8.7E+07	n	Aluminum	17300		20900		24400		30500	
3.5E+04	n	Antimony	0.164	ND	7.28		7.25		0.1445	ND
1.4E+04	c	Arsenic	8.36		10.9		13.9		47.2	
1.7E+07	n	Barium	105		348		241		234	
1.7E+05	n	Beryllium	0.002685	ND	0.002525	ND	0.0025	ND	0.00237	ND
8.7E+04	n	Cadmium	0.833		3.07		2.67		1.18	
--		Calcium	2700		8660		8800		7330	
1.3E+08	n	Chromium	20.2		32.2		32.3		42.4	
2.6E+04	n	Cobalt	6.05		10.9		8.13		9.73	
3.5E+06	n	Copper	17.1		43		34.7		19.5	
6.1E+07	n	Iron	13100		25200		19700		24500	
1.2E+04		Lead	42.4		251		233		77.4	
--		Magnesium	3110		5270		5850		7550	
2.1E+06	n	Manganese	382		706		472		318	
2.6E+04	n	Mercury	0.162		0.263		0.322		0.0772	
1.7E+06	n	Nickel	0.985	ND	17.3		0.92	ND	17.9	
--		Potassium	4800		5050		5740		7030	
4.4E+05	n	Selenium	0.246	ND	0.2315	ND	0.229	ND	0.217	ND
4.4E+05	n	Silver	0.0101	ND	1.57		1.37		0.0089	ND
--		Sodium	293		1670		459		526	
8.7E+02	n	Thallium	0.00228	ND	0.002145	ND	0.00212	ND	0.00201	ND
4.4E+05	n	Vanadium	33.6		60.6		45.1		83.8	
2.6E+07	n	Zinc	60.1		333		348		104	
--		Phosphate, Total (as P)	291		1420		983		1060	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
MRU = OU3 Middle Reach Upper
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
PRG = preliminary remediation goal
SO = Soil
WR = OU3 P.C. West Reach

Table F-4e(1). Screening results for OU2 Floodplain soil samples compared with Empire Canyon industrial PRGs

Empire Canyon industrial PRGs (mg/kg)		Sample ID				OU2-0-SO-10L-0		OU2-0-SO-12I-0		OU2-0-SO-12L-0		OU2-0-SO-15L-0		OU2-0-SO-15N-0		OU2-0-SO-17L-0		OU2-0-SO-17N-0	
		Depth				0		0		0		0		0		0		0	
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date				9/21/2015		9/17/2015		9/21/2015		9/17/2015		9/16/2015		9/17/2015		9/16/2015	
		Habitat	**N**	**count of NDs**	**% detected**	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	33	0	100%	27400		18200		7900		3350		6830		30200		3580	
2.5E+04		Antimony	33	1	97%	16.7		1550		874		847		304		11.4		413	
9.6E+04	c	Arsenic	33	0	100%	10.5		1350		649		757		258		23.8		406	
1.2E+07	n	Barium	33	0	100%	195		227		185		63.8		236		319		99.4	
1.2E+05	n	Beryllium	33	33	0%	0.00302	ND	0.00249	ND	0.00264	ND	0.00437	ND	0.002865	ND	0.002705	ND	0.0026	ND
6.2E+04	n	Cadmium	33	0	100%	15.7		206		79.6		175		37.4		4.08		69	
--		Calcium	33	0	100%	6830		39100		25000		74700		42000		7300		43500	
9.3E+07	n	Chromium	33	2	94%	34.1		123		30		1.785	ND	34.5		39.3		17.7	
1.9E+04	n	Cobalt	33	0	100%	5.77		3.97		2.69		7.29		6.91		11.8		2.2	
2.5E+06	n	Copper	33	0	100%	34.9		2450		1670		252		385		46.2		579	
4.3E+07	n	Iron	33	0	100%	20500		24000		15300		11200		31600		34800		11100	
8.2E+03		Lead	33	1	97%	15.2	ND	**34400**		**16900**		1830		7680		272		7900	
--		Magnesium	33	0	100%	6220		17700		8680		3610		14300		6140		12000	
1.5E+06	n	Manganese	33	0	100%	183		3650		1730		350		1670		1070		2100	
1.9E+04	n	Mercury	33	0	100%	0.202		31.3		26		1.88		9.38		0.424		8.23	
1.2E+06	n	Nickel	33	27	18%	1.11	ND	0.915	ND	0.97	ND	1.605	ND	1.05	ND	18.6		0.955	ND
--		Potassium	33	0	100%	7520		6500		2350		942		2280		6150		1270	
3.1E+05	n	Selenium	33	19	42%	0.2765	ND	20.5		10.2		0.4	ND	10.8		0.248	ND	0.238	ND
3.1E+05	n	Silver	33	5	85%	0.01135	ND	236		120		7.02		41.3		1.6		55.2	
--		Sodium	33	0	100%	1020		473		399		1350		285		944		162	
6.2E+02	n	Thallium	33	14	58%	0.00256	ND	11.9		0.00224	ND	24.9		3.98		0.002295	ND	5.33	
3.1E+05	n	Vanadium	33	1	97%	40.3		41.8		18.9		5.9		18.8		40.6		11.4	
1.9E+07	n	Zinc	33	0	100%	1370		31300		20300		65600		11100		427		17200	
--		Phosphate, Total (as P)	33	0	100%	905		3710		1460		419		2050		863		1660	

Table F-4e(1). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU2-0-SO-26V-0		OU2-0-SO-30R-0		OU2-0-SO-30Y-0		OU2-0-SO-34G-0		OU2-0-SO-35V-0		OU2-0-SO-37V-0		OU2-0-SO-39V-0		OU2-0-SO-43T-0		OU2-0-SO-44T-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	9/16/2015		9/15/2015		9/16/2015		8/5/2015		8/5/2015		8/5/2015		8/4/2015		8/4/2015		9/14/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	3370		5600		4610		7530		12000		20000		12800		2940		6960	
2.5E+04		Antimony	132		489		234		63		45.2		24.8		320		3.78		353	
9.6E+04	c	Arsenic	217		335		335		110		206		48.7		306		4.23		413	
1.2E+07	n	Barium	161		119		184		159		196		269		336		77.7		248	
1.2E+05	n	Beryllium	0.00264	ND	0.00246	ND	0.002595	ND	0.00263	ND	0.00344	ND	0.0025	ND	0.00244	ND	0.002495	ND	0	ND
6.2E+04	n	Cadmium	27.3		54		93.1		63.6		17.5		5.52		55.3		3		127	
--		Calcium	38100		27500		57000		41400		24200		27800		15000		117000		48800	
9.3E+07	n	Chromium	20.6		26		25.9		10.9		15		24		22.5		1.02	ND	28	
1.9E+04	n	Cobalt	2.5		2.2		8.04		12.2		14.5		8.61		27.9		1.88		9	
2.5E+06	n	Copper	125		873		337		126		89.7		76.7		411		31.5		806	
4.3E+07	n	Iron	16100		10400		46500		11900		26100		20100		20900		3340		39300	
8.2E+03		Lead	2810		**13900**		6410		605		1110		616		**9200**		51.6		**10600**	
--		Magnesium	14900		7660		18500		3480		4670		6790		4000		4650		13300	
1.5E+06	n	Manganese	1700		1420		2460		1770		2420		266		3850		2820		2050	
1.9E+04	n	Mercury	1.65		17.7		4.82		0.642		4.79		1.8		23.9		0.298		14	
1.2E+06	n	Nickel	0.97	ND	0.905	ND	0.955	ND	0.965	ND	1.265	ND	0.92	ND	0.895	ND	0.915	ND	1	ND
--		Potassium	1440		1560		2070		1900		2910		5070		3630		1540		2240	
3.1E+05	n	Selenium	0.2415	ND	0.2255	ND	15.1		0.2405	ND	0.315	ND	0.229	ND	8.57		0.2285	ND	10	
3.1E+05	n	Silver	17		60.6		34.2		5.58		3.92		3.48		24.7		0.0094	ND	50	
--		Sodium	127		280		278		202		783		587		278		788		400	
6.2E+02	n	Thallium	0.00224	ND	3.33		3.96		7.29		0.00292	ND	0.002125	ND	0.00207	ND	0.002115	ND	7	
3.1E+05	n	Vanadium	10.4		11.6		15.2		14.1		17.4		31.8		25.8		5.56		9	
1.9E+07	n	Zinc	4430		17200		15400		7970		2680		995		6590		289		31800	
--		Phosphate, Total (as P)	1480		1390		1330		1040		913		721		1320		844		1740	

Table F-4e(1). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU2-0-SO-44V-0		OU2-0-SO-44W-0		OU2-0-SO-45T-0		OU2-0-SO-45V-0		OU2-0-SO-46V-0		OU2-0-SO-47T-0		OU2-0-SO-48S-0		OU2-0-SO-48T-0		OU2-0-SO-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	7/31/2015		7/31/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		9/24/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	20500		10200		11300		6470		5310		9190		7330		6640		31200	
2.5E+04		Antimony	570		344		513		224		332		269		267		5490		12.4	
9.6E+04	c	Arsenic	550		442		589		241		743		360		314		7010		22.2	
1.2E+07	n	Barium	298		224		330		171		160		212		196		575		458	
1.2E+05	n	Beryllium	0.003105	ND	0.00328	ND	0.0022	ND	0.002365	ND	0	ND	0	ND	0.00284	ND	0.00358	ND	0.00294	ND
6.2E+04	n	Cadmium	86.5		180		105		65.4		62		118		101		66.1		3.68	
--		Calcium	41800		44700		69600		50200		40400		25600		52900		14900		6170	
9.3E+07	n	Chromium	65.4		30.3		49.5		33.3		26		29		27.5		20		37.7	
1.9E+04	n	Cobalt	13.5		21.4		13.5		4.99		7		9		9.9		11.3		11.5	
2.5E+06	n	Copper	1080		650		845		437		278		494		387		396		48.1	
4.3E+07	n	Iron	33700		25800		37500		21300		27500		22700		28800		130000		26700	
8.2E+03		Lead	**9720**		4800		**11400**		5490		4220		5600		5920		3810		271	
--		Magnesium	14600		10300		15800		16200		13900		7060		13700		3440		5670	
1.5E+06	n	Manganese	2750		3200		2280		2310		2300		1010		1950		1680		1070	
1.9E+04	n	Mercury	26.5		9.27		10.8		3.27		3		13		3.61		1.57		0.643	
1.2E+06	n	Nickel	22.6		23.5		0.81	ND	0.87	ND	1	ND	2	ND	1.04	ND	1.315	ND	20.1	
--		Potassium	6030		3250		4330		2830		2210		2410		2740		2310		7710	
3.1E+05	n	Selenium	14.3		0.3005	ND	15.6		8.2		8		20		9.49		0.3275	ND	0.2695	ND
3.1E+05	n	Silver	72.3		41.3		81.3		26.8		22		27		28.2		21.1		1.63	
--		Sodium	387		3430		204		115		119		391		376		335		487	
6.2E+02	n	Thallium	21.6		45.7		14.1		5.9		4		23		10.3		35.4		0.002495	ND
3.1E+05	n	Vanadium	30.7		14.5		14.3		8.5		3		13		9.21		0.0825	ND	57	
1.9E+07	n	Zinc	26600		29800		18000		14600		13200		19400		27900		22200		515	
--		Phosphate, Total (as P)	2550		261		1490		1060		1670		3480		1240		519		1020	

Table F-4e(1). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU2-0-SO-50P-0		OU2-0-SO-50Q-0		OU2-0-SO-50T-0		OU2-0-SO-7F-0		OU2-0-SO-8G-0		OU2-0-SO-8I-0		OU2-0-SO-OP1-0		OU2-0-SO-OP2-0	
		Depth	0		0		0		0		0		0		0		0	
			Dups ave															
		Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date	7/29/2015		7/29/2015		7/30/2015		9/17/2015		9/17/2015		9/21/2015		7/29/2015		9/17/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	30600		7320		35800		8860		9090		5200		11200		27200	
2.5E+04		Antimony	6.6		276		0.1895	ND	826		1270		257		244		8.27	
9.6E+04	c	Arsenic	11.9		247		11.3		1020		1060		292		268		16.8	
1.2E+07	n	Barium	312		166		262		158		174		57.4		269		450	
1.2E+05	n	Beryllium	0.0030675	ND	0.00306	ND	0.0031	ND	0.002665	ND	0.002455	ND	0.002505	ND	0.00329	ND	0.002765	ND
6.2E+04	n	Cadmium	2.395		44.8		1.3		160		119		44.8		42.2		2	
--		Calcium	7775		50200		6300		41900		30800		42900		17300		8500	
9.3E+07	n	Chromium	34.4		28.1		40.4		50.2		40.5		28.4		23.5		31.4	
1.9E+04	n	Cobalt	10.8		5.92		11.4		3.41		6.23		2.42		3.57		11.4	
2.5E+06	n	Copper	40.8		352		22.8		1010		2040		358		550		58.1	
4.3E+07	n	Iron	26200		17900		27300		19600		23300		11200		19200		25100	
8.2E+03		Lead	160.5		4730		75.1		**27400**		**28900**		6260		**9960**		176	
--		Magnesium	6410		11900		6910		14200		9460		12200		5970		6390	
1.5E+06	n	Manganese	765.5		1730		667		2740		4220		2110		832		641	
1.9E+04	n	Mercury	0.228		10.7		0.0463		16.3		79.1		5.64		7.22		0.372	
1.2E+06	n	Nickel	1.1275	ND	1.125	ND	20.9		0.98	ND	0.9	ND	0.92	ND	24.4		1.015	ND
--		Potassium	6555		2430		6480		3590		2540		1820		3250		6060	
3.1E+05	n	Selenium	0.281	ND	0.2805	ND	0.284	ND	9.53		10.8		0.2295	ND	0.301	ND	0.253	ND
3.1E+05	n	Silver	0.01155	ND	33.8		0.0117	ND	169		145		32.2		35.8		0.0104	ND
--		Sodium	710.5		242		520		327		491		176		578		794	
6.2E+02	n	Thallium	0.002605	ND	4.6		0.00263	ND	6.25		3.34		0.002125	ND	0.00279	ND	0.002345	ND
3.1E+05	n	Vanadium	50.3		12.1		60		21.6		24.2		11		122		39.6	
1.9E+07	n	Zinc	274		10400		122		27900		29700		12100		8250		272	
--		Phosphate, Total (as P)	1450		1360		1450		5180		1660		1430		1580		883	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
PRG = preliminary remediation goal
SO = Soil

Table F-4e(2). Screening results for OU2 Upland soil samples compared with Empire Canyon industrial PRGs

Empire Canyon industrial PRGs (mg/kg)		Sample ID				OU2-0-SO-21D-0		OU2-0-SO-27I-0		OU2-0-SO-29F-0		OU2-0-SO-2A-0		OU2-0-SO-3B-0		OU2-0-SO-4B-0	
		Depth				0		0		0		0		0		0	
		Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2	
		Sample date				9/22/2015		9/15/2015		9/15/2015		9/22/2015		9/24/2015		9/24/2015	
		Habitat	**N**	**count of NDs**	**% detected**	Upland		Upland		Upland		Upland		Upland		Upland	
6.2E+07		Aluminum	6	0	100%	29400		39000		31800		36100		21500		8310	
2.5E+04		Antimony	6	1	83%	12.3		0.158	ND	5.3		2610		18.1		1290	
9.6E+04	c	Arsenic	6	0	100%	23.9		11.4		14.6		760		21.9		799	
1.2E+07	n	Barium	6	0	100%	289		300		316		289		230		181	
1.2E+05	n	Beryllium	6	6	0%	0.002855	ND	0.002585	ND	0.00284	ND	0.002695	ND	0.00258	ND	0.00301	ND
6.2E+04	n	Cadmium	6	0	100%	4.39		1.15		2.34		40.7		3.34		293	
--		Calcium	6	0	100%	6870		5050		6710		1890		5560		15200	
9.3E+07	n	Chromium	6	0	100%	39.6		36.6		44.6		34.2		35.8		29.2	
1.9E+04	n	Cobalt	6	0	100%	10.4		11.9		12.9		5.36		10.8		6.17	
2.5E+06	n	Copper	6	0	100%	55.5		23.1		40.4		2230		56.2		2310	
4.3E+07	n	Iron	6	0	100%	22500		28400		25400		9970		23100		28100	
8.2E+03		Lead	6	0	100%	359		32.7		171		**20400**		485		**32900**	
--		Magnesium	6	0	100%	5220		6470		6000		1130		4310		5080	
1.5E+06	n	Manganese	6	0	100%	738		1040		1030		1770		945		2580	
1.9E+04	n	Mercury	6	1	83%	0.367		0.000745	ND	0.11		12.9		0.799		104	
1.2E+06	n	Nickel	6	4	33%	1.05	ND	19.2		1.04	ND	35.9		0.945	ND	1.105	ND
--		Potassium	6	0	100%	7590		9210		7650		1690		5360		2090	
3.1E+05	n	Selenium	6	5	17%	0.2615	ND	0.237	ND	0.26	ND	0.247	ND	0.236	ND	9.6	
3.1E+05	n	Silver	6	2	67%	2.35		0.00975	ND	0.0107	ND	196		2.1		112	
--		Sodium	6	0	100%	765		450		652		3370		463		765	
6.2E+02	n	Thallium	6	6	0%	0.002425	ND	0.002195	ND	0.00241	ND	0.00229	ND	0.00219	ND	0.002555	ND
3.1E+05	n	Vanadium	6	0	100%	55.2		59.6		60.7		28.2		50.7		16.6	
1.9E+07	n	Zinc	6	0	100%	597		87.6		230		18600		633		65300	
--		Phosphate, Total (as P)	6	0	100%	1250		590		858		865		1280		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
PRG = preliminary remediation goal
SO = Soil

Table F-4e(3). Screening results for OU3 Floodplain soil samples compared with Empire Canyon industrial PRGs

Empire Canyon industrial PRGs (mg/kg)		Sample ID				OU3-0-SO-ER-10S-0		OU3-0-SO-ER-12R-0		OU3-0-SO-ER-3M-0		OU3-0-SO-ER-5A-0		OU3-0-SO-ER-5G-0		OU3-0-SO-ER-5K-0	
		Depth				0		0		0		0		0		0	
		Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date				9/11/2015		9/14/2015		8/6/2015		8/6/2015		8/6/2015		9/10/2015	
		Habitat	**N**	**count of NDs**	**% detected**	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	149	0	100%	25100		28100		4290		32800		20100		35600	
2.5E+04		Antimony	149	4	97%	69.4		16.7		99.7		107		106		124	
9.6E+04	c	Arsenic	149	0	100%	57.1		19.5		364		130		69.9		109	
1.2E+07	n	Barium	149	0	100%	293		204		350		208		164		193	
1.2E+05	n	Beryllium	149	68	54%	0.0028	ND	0.002365	ND	0.00292	ND	0.002435	ND	0.002615	ND	0.002515	ND
6.2E+04	n	Cadmium	149	0	100%	7.2		2.91		12		11.7		23.8		15	
--		Calcium	149	0	100%	12500		7330		62300		6880		18100		12400	
9.3E+07	n	Chromium	149	2	99%	31.9		29.4		1.195	ND	44.3		27.5		43.1	
1.9E+04	n	Cobalt	149	0	100%	9.98		8.26		26.7		9.5		6.1		7.62	
2.5E+06	n	Copper	149	0	100%	136		40.5		67		245		251		226	
4.3E+07	n	Iron	149	0	100%	21900		24100		24600		24000		13400		26300	
8.2E+03		Lead	149	0	100%	1330		244		263		2720		1870		2760	
--		Magnesium	149	0	100%	6200		5440		3020		6110		4950		9370	
1.5E+06	n	Manganese	149	0	100%	640		693		15800		843		343		1650	
1.9E+04	n	Mercury	149	2	99%	1.52		0.253		0.325		1.83		1.28		3.19	
1.2E+06	n	Nickel	149	43	71%	1.03	ND	0.87	ND	1.075	ND	17.7		17.9		20.5	
--		Potassium	149	0	100%	5820		6810		1400		7600		4250		8180	
3.1E+05	n	Selenium	149	47	68%	0.2565	ND	0.2165	ND	0.2675	ND	0.223	ND	0.2395	ND	0.2305	ND
3.1E+05	n	Silver	149	12	92%	13.1		2.09		3.26		20.8		12		26.8	
--		Sodium	149	0	100%	757		521		596		402		502		555	
6.2E+02	n	Thallium	149	39	74%	0.002375	ND	0.002005	ND	7.3		4.64		6.65		7.01	
3.1E+05	n	Vanadium	149	2	99%	51.1		48.7		4.35		52.2		33.3		51.5	
1.9E+07	n	Zinc	149	0	100%	760		291		10300		2440		1610		6290	
--		Phosphate, Total (as P)	149	0	100%	703		612		1520		750		734		982	

Table F-4e(3). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-ER-7J-0		OU3-0-SO-FT-1B-0		OU3-0-SO-FT-1C-0		OU3-0-SO-FT-2B-0		OU3-0-SO-FT-2C-0		OU3-0-SO-FT-3B-0		OU3-0-SO-FT-3C-0		OU3-0-SO-FT-3D-0		OU3-0-SO-FT-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/10/2015		9/28/2015		9/25/2015		9/28/2015		9/25/2015		10/5/2015		9/25/2015		9/25/2015		9/28/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	4110		30200		13300		22100		5620		21700		4690		38700		15300	
2.5E+04		Antimony	13.4		53		373		62.3		244		924		253		190		48.9	
9.6E+04	c	Arsenic	23.3		47.5		371		41		231		372		207		67.1		94.4	
1.2E+07	n	Barium	147		244		136		252		61.5		211		83.5		417		411	
1.2E+05	n	Beryllium	0.00326	ND	0.003325	ND	0.0023	ND	0.00306	ND	0.002385	ND	0.003105	ND	0.002385	ND	0.00263	ND	0.00635	ND
6.2E+04	n	Cadmium	1.66		17.5		161		13.7		151		77.2		135		47.6		11.5	
--		Calcium	176000		11100		54300		9950		81200		8740		81200		7700		27500	
9.3E+07	n	Chromium	1.33	ND	37.9		34.2		32.3		31.7		26.1		59.3		41.1		24.5	
1.9E+04	n	Cobalt	6.07		11.8		9.01		8.39		15.8		12		11		14.5		16.8	
2.5E+06	n	Copper	27.8		131		493		124		430		1230		350		256		118	
4.3E+07	n	Iron	10600		26400		35600		22500		63100		20900		46700		26800		26400	
8.2E+03		Lead	128		907		**9440**		1230		8030		**12200**		5050		1420		1160	
--		Magnesium	3480		7540		17600		5260		23400		4660		20800		7110		6480	
1.5E+06	n	Manganese	5940		1480		3130		862		2390		3000		2150		286		1790	
1.9E+04	n	Mercury	0.139		14.9		6.94		6.49		1.76		167		2.34		40.1		2.74	
1.2E+06	n	Nickel	1.195	ND	1.22	ND	0.845	ND	1.125	ND	0.945	ND	1.14	ND	0.875	ND	21.2		2.335	ND
--		Potassium	1430		6880		3720		6180		2550		3690		2270		8550		3440	
3.1E+05	n	Selenium	0.2985	ND	0.3045	ND	8.76		0.28	ND	14.3		0.284	ND	10.9		0.241	ND	0.58	ND
3.1E+05	n	Silver	0.01225	ND	8.3		77.2		7.61		31.8		75.7		28.3		10.8		7.05	
--		Sodium	420		1350		234		448		193		655		137		915		2930	
6.2E+02	n	Thallium	0.002765	ND	0.00282	ND	5.42		0.002595	ND	4.58		0.002635	ND	3.56		0.002235	ND	0.0054	ND
3.1E+05	n	Vanadium	5.69		55.1		16.8		39.6		1.62		37.9		3.41		62.3		24.1	
1.9E+07	n	Zinc	271		1430		30100		1580		25200		11600		21900		1970		1540	
--		Phosphate, Total (as P)	428		1710		1770		1040		2050		1530		1770		1030		1300	

Table F-4e(3). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-FT-4B-0		OU3-0-SO-FT-4C-0		OU3-0-SO-FT-5C-0		OU3-0-SO-FT-6B-0		OU3-0-SO-FT-6D-0		OU3-0-SO-MRL-15D-0		OU3-0-SO-MRL-15E-0		OU3-0-SO-MRL-16D-0		OU3-0-SO-MRL-16F-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/25/2015		9/25/2015		9/25/2015		9/24/2015		9/25/2015		9/29/2015		9/29/2015		9/30/2015		9/28/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	9140		4640		5640		52200		23900		34600		27100		40200		19400	
2.5E+04		Antimony	355		183		373		152		102		4.47		1460		4.27		1800	
9.6E+04	c	Arsenic	431		155		463		129		34.2		16.1		1250		22.4		1130	
1.2E+07	n	Barium	633		80.2		115		347		440		288		206		275		215	
1.2E+05	n	Beryllium	0.00306	ND	0.00258	ND	0.00244	ND	0	ND	0.004375	ND	0.002635	ND	0.00411	ND	0.00258	ND	0.00291	ND
6.2E+04	n	Cadmium	34		48.8		120		89		18.3		1.51		99		1.96		77.6	
--		Calcium	41600		96700		53200		14300		11200		7520		54000		5290		10600	
9.3E+07	n	Chromium	42.7		32.3		32		74		50.8		41.5		143		48.3		25.3	
1.9E+04	n	Cobalt	7.13		6.34		15		10		8.1		10.9		3.31		17.6		9.41	
2.5E+06	n	Copper	408		263		838		589		224		34		1920		36.8		3140	
4.3E+07	n	Iron	42700		18900		60100		33700		18400		25800		23200		29100		27100	
8.2E+03		Lead	7940		4390		**9750**		6070		2580		113		**33000**		191		**40700**	
--		Magnesium	14600		24400		16300		12700		7850		7080		19900		6510		3590	
1.5E+06	n	Manganese	1850		2440		2380		796		798		1060		2280		1310		2740	
1.9E+04	n	Mercury	4.82		2.02		8.57		16		2.47		0.304		33		0.269		2950	
1.2E+06	n	Nickel	0.98	ND	0.89	ND	0.895	ND	29		1.285	ND	19.9		1.51	ND	24.7		1.07	ND
--		Potassium	3230		2300		2390		10100		6430		9380		9710		9490		3230	
3.1E+05	n	Selenium	22.9		0.2365	ND	21.8		12		0.401	ND	0.2415	ND	20.6		0.236	ND	12.3	
3.1E+05	n	Silver	46		36.5		55.8		46		14.3		0.0099	ND	175		0.0097	ND	18.5	
--		Sodium	265		164		235		558		659		315		390		266		1120	
6.2E+02	n	Thallium	7.62		0.00219	ND	7.76		6		0.003715	ND	0.002235	ND	10.1		0.00219	ND	0.00247	ND
3.1E+05	n	Vanadium	12.3		7.72		0.07	ND	84		46.3		63.6		67.9		63.4		39.2	
1.9E+07	n	Zinc	4900		12800		22300		10000		2780		192		22900		336		26800	
--		Phosphate, Total (as P)	1680		1610		1690		1410		1530		1320		4350		746		2240	

Table F-4e(3). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-MRL-16H-0		OU3-0-SO-MRL-18F-0		OU3-0-SO-MRU-10C-0		OU3-0-SO-MRU-11C-0		OU3-0-SO-MRU-12C-0		OU3-0-SO-MRU-13C-0		OU3-0-SO-MRU-1C-0		OU3-0-SO-MRU-1D-0	
		Depth	0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		Dups ave OU3		OU3	
		Sample date	9/28/2015		9/29/2015		10/1/2015		10/1/2015		10/1/2015		10/1/2015		11/10/2014		11/12/2014	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	35800		33700		15000		2.08		7270		41100		17160		21100	
2.5E+04		Antimony	4.33		188		290		663		374		290		165.5		24.3	
9.6E+04	c	Arsenic	14.4		75.5		171		793		568		182		192		24.1	
1.2E+07	n	Barium	269		292		303		654		68.4		375		291		186	
1.2E+05	n	Beryllium	0.002655	ND	0.00381	ND	0.002705	ND	0.003065	ND	0.00242	ND	0.00266	ND	0.0030475	ND	0.00298	ND
6.2E+04	n	Cadmium	2.26		91.4		50.5		148		70.4		44.6		59.1		7.1	
--		Calcium	11900		10500		12600		5.43		42600		14400		18450		15000	
9.3E+07	n	Chromium	38.3		45.6		18.6		98.6		29.8		76.3		47.15		50.6	
1.9E+04	n	Cobalt	9.26		12.4		6.03		3.93		4.11		9.91		14.9		11	
2.5E+06	n	Copper	38.9		451		561		854		541		909		334.5		74.7	
4.3E+07	n	Iron	25200		26300		19600		4.09		15300		28700		35650		20400	
8.2E+03		Lead	88.2		1790		7060		**14000**		**8950**		**8930**		4005		660	
--		Magnesium	6510		7070		3150		2.51		10400		13700		9690		8400	
1.5E+06	n	Manganese	541		763		1360		2790		1950		1510		2570		1140	
1.9E+04	n	Mercury	0.124		58.7		8.57		16.4		5.28		36.4		2.7535		1.53	
1.2E+06	n	Nickel	19.6		1.4	ND	0.99	ND	1.125	ND	0.89	ND	25.5		13.2725		1.095	ND
--		Potassium	8580		7040		2350		0.884		2120		7240		5825		7640	
3.1E+05	n	Selenium	0.243	ND	0.349	ND	0.2475	ND	18.9		8.55		10.4		0.27925	ND	0.273	ND
3.1E+05	n	Silver	0.01	ND	17		26.4		85.6		45.2		77.6		30.55		4.59	
--		Sodium	427		593		559		0.0215		276		671		375		705	
6.2E+02	n	Thallium	0.00225	ND	0.003235	ND	0.002295	ND	21.6		8.51		8.31		2.211325		0.00253	ND
3.1E+05	n	Vanadium	54.3		54		26.5		0.00277		21.8		72.4		44.15		48.9	
1.9E+07	n	Zinc	286		3280		12000		15300		19000		9500		5635		1230	
--		Phosphate, Total (as P)	1430		1340		1030		3090		1530		1470		1990		1720	

Table F-4e(3). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-MRU-2B-0		OU3-0-SO-MRU-2C-0		OU3-0-SO-MRU-2D-0		OU3-0-SO-MRU-3C-0		OU3-0-SO-MRU-3D-0		OU3-0-SO-MRU-4C-0		OU3-0-SO-MRU-4D-0		OU3-0-SO-MRU-5C-0		OU3-0-SO-MRU-5D-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		Dups ave OU3		OU3		OU3	
		Sample date	11/10/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/11/2014		11/12/2014	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	20900		26800		29000		31600		19600		17000		28450		26200		26300	
2.5E+04		Antimony	100		40.1		0.1675	ND	24.7		0.19	ND	0.1725	ND	8.1		61.4		13.2	
9.6E+04	c	Arsenic	80		51.5		7.23		37.5		7.5		9.02		15.35		151		19.2	
1.2E+07	n	Barium	225		220		218		328		167		141		257.5		318		258	
1.2E+05	n	Beryllium	0.003165	ND	0.00298	ND	0.002745	ND	0.003015	ND	0.00311	ND	0.00282	ND	0.003135	ND	0.003305	ND	0.002925	ND
6.2E+04	n	Cadmium	13		31.6		2.4		9.5		3.3		1.21		2.665		65.1		4.88	
--		Calcium	12100		14400		8660		6690		14200		5800		5525		33700		5600	
9.3E+07	n	Chromium	62.7		43.8		37.1		36		66.8		37.4		35.45		47.6		38.4	
1.9E+04	n	Cobalt	7.04		10.5		15.9		12.3		28.8		5.65		11		21.9		10.9	
2.5E+06	n	Copper	160		144		31.4		111		58.9		32.4		35.15		216		46	
4.3E+07	n	Iron	18000		21200		30300		28100		22700		13200		25750		27200		22700	
8.2E+03		Lead	2460		1250		42.6		868		68.2		27.7		185		2040		388	
--		Magnesium	4120		7440		6620		6920		8710		3960		6270		10100		7220	
1.5E+06	n	Manganese	925		1490		776		879		576		336		913		15600		1170	
1.9E+04	n	Mercury	3.98		2.77		0.00142	ND	1.01		0.0804		0.00132	ND	0.295		3.88		0.615	
1.2E+06	n	Nickel	1.165	ND	1.095	ND	1.01	ND	1.105	ND	24.8		1.035	ND	11.4425		40.4		21.2	
--		Potassium	5640		6010		5430		7930		4380		4120		8775		5640		8920	
3.1E+05	n	Selenium	0.29	ND	0.273	ND	0.2515	ND	0.276	ND	0.2845	ND	0.2585	ND	0.28725	ND	0.303	ND	0.268	ND
3.1E+05	n	Silver	10.4		8.87		0.01035	ND	3.88		0.0117	ND	0.0106	ND	0.011825	ND	16.6		1.91	
--		Sodium	417		477		2190		359		2080		457		385.5		493		277	
6.2E+02	n	Thallium	0.002685	ND	0.00253	ND	0.00233	ND	0.00256	ND	0.00264	ND	0.002395	ND	0.0026625	ND	0.002805	ND	0.002485	ND
3.1E+05	n	Vanadium	39.8		50.3		83.7		62.3		56.4		33.8		64.35		46.1		61.2	
1.9E+07	n	Zinc	1900		2990		166		1250		260		59.7		355.5		12500		708	
--		Phosphate, Total (as P)	3760		1800		927		1260		847		1410		1255		2010		1640	

Table F-4e(3). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-MRU-6C-0		OU3-0-SO-MRU-7C-0		OU3-0-SO-MRU-7D-0		OU3-0-SO-MRU-8C-0		OU3-0-SO-NR-11J-0		OU3-0-SO-NR-13L-0		OU3-0-SO-NR-13M-0		OU3-0-SO-NR-14M-0		OU3-0-SO-NR-14P-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	11/11/2014		9/30/2015		10/1/2015		10/1/2015		9/21/2015		9/18/2015		9/18/2015		9/18/2015		9/21/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	30300		23200		46700		26100		26700		33300		7510		7060		26400	
2.5E+04		Antimony	39.7		294		6.75		30		2290		12		600		465		38.8	
9.6E+04	c	Arsenic	41.1		246		15.7		55.2		846		19		568		384		33.7	
1.2E+07	n	Barium	191		245		369		364		320		393		149		192		175	
1.2E+05	n	Beryllium	0.00299	ND	0.00233	ND	0.002515	ND	0.00261	ND	0.002875	ND	0.003315	ND	0.00276	ND	0.00252	ND	0.00298	ND
6.2E+04	n	Cadmium	32.3		37.6		2.18		5.83		49.7		4.51		118		51.8		30.7	
--		Calcium	24500		19300		15100		21900		2580		10800		38400		26900		7930	
9.3E+07	n	Chromium	60.2		55.7		47		66.6		14.8		43.3		72.8		40.5		29.1	
1.9E+04	n	Cobalt	7.95		11.5		14.3		9.02		5.11		7.55		5.63		5.99		7.2	
2.5E+06	n	Copper	144		505		26.3		93.3		2200		44.2		950		766		86	
4.3E+07	n	Iron	21600		34800		32200		26000		11100		25700		21200		22100		19100	
8.2E+03		Lead	1120		7060		184		837		**22200**		141		**15800**		7920		593	
--		Magnesium	8770		8870		16800		5050		1380		7940		10100		8100		5790	
1.5E+06	n	Manganese	1360		2200		1590		1270		874		252		2750		1560		448	
1.9E+04	n	Mercury	1.48		15.9		0.344		2.64		676		0.274		17.3		26.9		0.999	
1.2E+06	n	Nickel	29.8		20.6		26.1		20.6		25.2		23.1		1.015	ND	0.925	ND	1.095	ND
--		Potassium	6520		5080		16800		6990		1800		7210		2310		1850		7460	
3.1E+05	n	Selenium	0.274	ND	8.14		0.2305	ND	0.239	ND	0.263	ND	0.3035	ND	0.2525	ND	10.3		0.273	ND
3.1E+05	n	Silver	9.2		47.2		0.00945	ND	5.18		230		0.01245	ND	74.2		42		4.25	
--		Sodium	912		276		484		612		2600		934		301		329		586	
6.2E+02	n	Thallium	0.00254	ND	3.56		0.002135	ND	0.002215	ND	0.00244	ND	0.00281	ND	5.54		3.75		0.00253	ND
3.1E+05	n	Vanadium	51.5		67.1		76.1		53		30.7		50		14.7		13.2		37.6	
1.9E+07	n	Zinc	5060		8100		339		967		14300		788		22100		12800		4290	
--		Phosphate, Total (as P)	3620		1740		1000		5540		909		859		1910		1740		650	

Table F-4e(3). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-NR-15M-0		OU3-0-SO-NR-15P-0		OU3-0-SO-NR-3F-0		OU3-0-SO-NR-7I-0		OU3-0-SO-NR-9J-0		OU3-0-SO-WR-1B-0		OU3-0-SO-WR-1F-0		OU3-0-SO-WR-2B-0		OU3-0-SO-WR-2F-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/17/2015		9/21/2015		9/22/2015		9/21/2015		9/21/2015		8/4/2015		7/31/2015		8/4/2015		7/31/2015	
		Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	9180		5780		32900		33300		6170		4670		7670		6090		13100	
2.5E+04		Antimony	805		343		106		26.6		271		172		253		328		308	
9.6E+04	c	Arsenic	701		307		96		26.6		297		189		287		340		264	
1.2E+07	n	Barium	174		160		282		365		259		155		227		237		186	
1.2E+05	n	Beryllium	0.00236	ND	0.002705	ND	0	ND	0.00285	ND	0.00296	ND	0.00258	ND	0.00296	ND	0.002325	ND	0.003325	ND
6.2E+04	n	Cadmium	100		40.3		31		9.75		76.4		72.6		78.7		97.4		92.1	
--		Calcium	33000		27000		10100		10500		43900		107000		44900		50700		104000	
9.3E+07	n	Chromium	34.5		23.2		45		45.3		30.1		16.2		28.3		23.5		33.9	
1.9E+04	n	Cobalt	6.38		7.99		8		10		52.4		5.56		8.36		11.8		8.47	
2.5E+06	n	Copper	1210		476		205		70.2		390		227		398		474		586	
4.3E+07	n	Iron	20300		32900		25800		25200		122000		22300		40100		28800		19200	
8.2E+03		Lead	**16300**		7000		3060		597		6630		3470		5550		6370		5750	
--		Magnesium	10300		8770		7880		9130		8600		10700		14100		10900		11400	
1.5E+06	n	Manganese	2630		1450		1070		380		1600		1710		2490		2690		1230	
1.9E+04	n	Mercury	27.6		8.88		17		3.11		11.1		2.24		3.93		5.75		13.3	
1.2E+06	n	Nickel	0.865	ND	0.995	ND	1	ND	21.5		1.09	ND	0.95	ND	1.085	ND	20.9		1.22	ND
--		Potassium	2690		1710		8290		8010		1530		1510		2780		1820		4450	
3.1E+05	n	Selenium	10.2		13.4		0	ND	0.261	ND	30.9		8.9		16		13.3		0.3045	ND
3.1E+05	n	Silver	96		29.6		11		2.62		39		16.1		29.1		28.3		34	
--		Sodium	382		213		1190		1380		258		219		181		388		5960	
6.2E+02	n	Thallium	5.13		3.75		0	ND	0.00242	ND	0.002515	ND	48.1		15.2		20.6		31.8	
3.1E+05	n	Vanadium	20.4		5.91		47		45.8		0.085	ND	6.41		5.45		9.62		19.6	
1.9E+07	n	Zinc	20900		10100		5240		975		12400		15200		14600		34700		26000	
--		Phosphate, Total (as P)	1560		1310		942		1970		2700		1520		1550		1460		971	

Table F-4e(3). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-WR-5B-0		OU3-0-SO-WR-5F-0		OU3-0-TL-MR2	
		Depth	0		0		0001	
					Dups ave			
		Operable Unit	OU3		OU3		OU3	
		Sample date	8/4/2015		7/31/2015		3/2/2015	
		Habitat	Floodplain		Floodplain		Floodplain	
6.2E+07		Aluminum	9240		4520		14000	
2.5E+04		Antimony	207		192		519	
9.6E+04	c	Arsenic	191		418		442	
1.2E+07	n	Barium	180		54.85		143	
1.2E+05	n	Beryllium	0.00288	ND	0.00254	ND	0.002525	ND
6.2E+04	n	Cadmium	123		88.85		58.9	
--		Calcium	142000		49450		40700	
9.3E+07	n	Chromium	21.8		28.8		33.9	
1.9E+04	n	Cobalt	9.87		3.65		6.57	
2.5E+06	n	Copper	345		354.5		823	
4.3E+07	n	Iron	15700		16500		18000	
8.2E+03		Lead	5040		3625		**11100**	
--		Magnesium	9180		17750		6040	
1.5E+06	n	Manganese	1340		2345		2070	
1.9E+04	n	Mercury	5.88		2.8		22.7	
1.2E+06	n	Nickel	1.055	ND	0.9325	ND	0.925	ND
--		Potassium	2580		1525		3140	
3.1E+05	n	Selenium	0.2635	ND	0.2325	ND	0.2315	ND
3.1E+05	n	Silver	25.3		22		54.7	
--		Sodium	1180		252.5		264	
6.2E+02	n	Thallium	14.5		8.98		0.00268	ND
3.1E+05	n	Vanadium	16.8		6.44		34.6	
1.9E+07	n	Zinc	26500		17950		13700	
--		Phosphate, Total (as P)	1220		1305		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
PRG = preliminary remediation goal
SO = Soil
TL = Tailings
WR = OU3 P.C. West Reach

Table F-4e(4). Screening results for OU3 Upland soil samples compared with Empire Canyon industrial PRGs

Empire Canyon industrial PRGs (mg/kg)		Sample ID Depth Operable Unit Sample date Habitat	N	count of NDs	% detected	OU3-0-SO-ER-11D-0 0 OU3 9/14/2015 Upland		OU3-0-SO-ER-11S-0 0 OU3 9/11/2015 Upland		OU3-0-SO-ER-4B-0 0 OU3 9/14/2015 Upland		OU3-0-SO-ER-4Q-0 0 OU3 8/5/2015 Upland		OU3-0-SO-ER-6A-0 0 OU3 9/14/2015 Upland		OU3-0-SO-ER-7P-0 0 OU3 9/10/2015 Upland		OU3-0-SO-ER-8A-0 0 OU3 9/14/2015 Upland	
6.2E+07		Aluminum	47	0	100%	35000		33700		31700		26600		30400		30100		26800	
2.5E+04		Antimony	47	5	89%	39.7		7.7		62.8		20.4		4.2		116		8.71	
9.6E+04	c	Arsenic	47	0	100%	42.3		16.3		80.5		41.2		10.9		103		11.1	
1.2E+07	n	Barium	47	0	100%	225		189		226		344		198		228		167	
1.2E+05	n	Beryllium	47	46	2%	0.00246	ND	0.002575	ND	0.00259	ND	0.002435	ND	0.00224	ND	0.002555	ND	0.002675	ND
6.2E+04	n	Cadmium	47	1	98%	8.79		1.77		10.7		5.15		2.26		13.6		4.2	
--		Calcium	47	0	100%	9740		7040		7910		6680		6550		7540		26300	
9.3E+07	n	Chromium	47	0	100%	54.5		34.7		39.1		37.1		29.8		40.5		30.7	
1.9E+04	n	Cobalt	47	0	100%	11.1		8.03		8.91		13		9.31		7.98		7.24	
2.5E+06	n	Copper	47	1	98%	109		30.7		135		78.6		28.1		193		34.1	
4.3E+07	n	Iron	47	0	100%	32800		24800		24300		22800		26900		23200		22300	
8.2E+03		Lead	47	0	100%	1030		91.6		1520		642		67.5		2500		176	
--		Magnesium	47	0	100%	7520		7190		6220		5540		5550		6640		6730	
1.5E+06	n	Manganese	47	0	100%	1140		488		894		1180		811		760		429	
1.9E+04	n	Mercury	47	1	98%	1.51		0.122		0.911		0.405		0.118		2.04		0.34	
1.2E+06	n	Nickel	47	22	53%	18.4		0.945	ND	0.95	ND	18.5		0.82	ND	0.94	ND	0.98	ND
--		Potassium	47	0	100%	7910		7160		6890		6460		7410		7900		5660	
3.1E+05	n	Selenium	47	47	0%	0.2255	ND	0.236	ND	0.237	ND	0.223	ND	0.205	ND	0.234	ND	0.245	ND
3.1E+05	n	Silver	47	16	66%	8.19		0.0097	ND	13.7		4.13		0.00845	ND	19.9		1.78	
--		Sodium	47	0	100%	565		330		419		432		508		586		368	
6.2E+02	n	Thallium	47	46	2%	6.48		0.002185	ND	0.0022	ND	0.002065	ND	0.0019	ND	0.00217	ND	0.00227	ND
3.1E+05	n	Vanadium	47	0	100%	63.7		58.7		59.6		55.4		52.6		46		52.9	
1.9E+07	n	Zinc	47	0	100%	1870		166		1540		661		286		2270		659	
--		Phosphate, Total (as P)	47	0	100%	892		517		579		565		596		973		711	

Table F-4e(4). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-FT-4E-0		OU3-0-SO-FT-5E-0		OU3-0-SO-MRL-14G-0		OU3-0-SO-MRL-14H-0		OU3-0-SO-MRL-14I-0		OU3-0-SO-MRL-14J-0		OU3-0-SO-MRL-15G-0		OU3-0-SO-MRL-15H-0		OU3-0-SO-MRL-15I-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/25/2015		9/25/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
6.2E+07		Aluminum	32500		32000		32500		31300		36000		28000		30000		35000		33200	
2.5E+04		Antimony	13.1		13.5		21.7		9.51		40.7		5.48		3.9		7.87		51.5	
9.6E+04	c	Arsenic	20		19.2		24.2		24.5		43.4		16.4		12.7		21.9		62	
1.2E+07	n	Barium	327		219		200		220		195		278		204		238		237	
1.2E+05	n	Beryllium	0.00306	ND	0.00274	ND	0.00284	ND	0.00273	ND	0.00335	ND	0.00261	ND	0.002805	ND	0.00256	ND	0.00316	ND
6.2E+04	n	Cadmium	3.26		9.86		5.44		3.3		8.24		1.88		1.64		3.51		9.64	
--		Calcium	8590		6040		9880		8790		43800		5820		7350		8170		9420	
9.3E+07	n	Chromium	41.6		33.9		39.6		39.1		72.5		36		69.9		39.7		45	
1.9E+04	n	Cobalt	7.8		8.52		7.44		9.4		10.1		11.8		7.73		9.1		12.4	
2.5E+06	n	Copper	59.9		55.1		66.5		44.2		116		36.6		31.8		41.9		126	
4.3E+07	n	Iron	22700		24100		24300		24000		24800		24400		22300		25400		23800	
8.2E+03		Lead	375		288		459		213		1290		166		83.1		146		1210	
--		Magnesium	7170		5690		6940		6840		9380		4950		6050		6560		6830	
1.5E+06	n	Manganese	315		558		410		484		759		991		252		706		1960	
1.9E+04	n	Mercury	2.03		1.54		0.651		0.352		2.49		0.154		0.154		0.291		1.81	
1.2E+06	n	Nickel	1.125	ND	1.005	ND	1.045	ND	18.9		33.6		18.2		29.9		19		22.9	
--		Potassium	8010		8070		8240		7250		7600		6950		7240		8320		7260	
3.1E+05	n	Selenium	0.28	ND	0.251	ND	0.26	ND	0.25	ND	0.307	ND	0.239	ND	0.257	ND	0.2345	ND	0.2895	ND
3.1E+05	n	Silver	2.14		2.19		4.44		1.73		11.3		0.0098	ND	0.01055	ND	1.33		9.07	
--		Sodium	445		347		376		352		434		390		312		406		591	
6.2E+02	n	Thallium	0.002595	ND	0.002325	ND	0.00241	ND	0.002315	ND	0.002845	ND	0.002215	ND	0.00238	ND	0.002175	ND	0.00268	ND
3.1E+05	n	Vanadium	61.7		57.6		57.8		55.1		65.7		59.1		53.6		60.8		65.3	
1.9E+07	n	Zinc	307		589		1120		522		2170		233		203		426		1660	
--		Phosphate, Total (as P)	1240		1190		1200		1090		843		880		1130		770		874	

Table F-4e(4). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-MRL-15J-0		OU3-0-SO-MRL-15K-0		OU3-0-SO-MRL-16G-0		OU3-0-SO-MRL-16I-0		OU3-0-SO-MRL-16J-0		OU3-0-SO-MRL-16K-0		OU3-0-SO-MRL-17G-0		OU3-0-SO-MRL-17H-0		OU3-0-SO-MRL-18G-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/29/2015		9/29/2015		9/28/2015		9/28/2015		9/28/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
6.2E+07		Aluminum	40800		29000		33700		36000		35500		38900		33000		35400		34500	
2.5E+04		Antimony	244		0.165	ND	12.9		37.7		16.8		77.3		4.09		4.12		4.1	
9.6E+04	c	Arsenic	223		11		18.8		41.8		25.1		75.1		17.1		18		19.3	
1.2E+07	n	Barium	197		286		216		197		241		335		201		267		332	
1.2E+05	n	Beryllium	0.003405	ND	0.002705	ND	0.0027	ND	0.002825	ND	0.0027	ND	0.002985	ND	0.002775	ND	0.0027	ND	0.00265	ND
6.2E+04	n	Cadmium	27.5		1.42		2.33		6.03		4.32		12.2		2.23		1.63		1.82	
--		Calcium	13900		5900		8400		7790		7500		18100		10700		6820		8060	
9.3E+07	n	Chromium	57.7		46.2		34.2		39.7		41		42.9		33.6		33.9		42.9	
1.9E+04	n	Cobalt	8.14		11.9		9.83		8.31		8.48		12.3		9.42		12.6		11.3	
2.5E+06	n	Copper	522		34.4		48.9		94.9		54		165		34		34.4		45.9	
4.3E+07	n	Iron	30100		24900		23700		24900		27400		27400		24700		28700		28300	
8.2E+03		Lead	6640		94.3		209		1010		256		1710		83.8		83.9		109	
--		Magnesium	10800		5210		6290		6940		6250		8370		6200		5760		7010	
1.5E+06	n	Manganese	684		1020		657		424		430		1550		556		921		1090	
1.9E+04	n	Mercury	11.3		0.0952		0.235		1.03		0.373		3.2		0.141		0.122		0.231	
1.2E+06	n	Nickel	1.25	ND	23.4		18.4		19.1		19.3		21.6		1.02	ND	21.7		23	
--		Potassium	9330		8090		8060		8270		7440		8540		7140		6890		8940	
3.1E+05	n	Selenium	0.312	ND	0.2475	ND	0.2475	ND	0.259	ND	0.247	ND	0.2735	ND	0.254	ND	0.247	ND	0.2425	ND
3.1E+05	n	Silver	54.8		0.0102	ND	1.6		7.26		2.24		15		0.01045	ND	0.01015	ND	0.00995	ND
--		Sodium	571		527		353		339		488		460		337		271		483	
6.2E+02	n	Thallium	0.00289	ND	0.002295	ND	0.00229	ND	0.0024	ND	0.00229	ND	0.002535	ND	0.002355	ND	0.00229	ND	0.00225	ND
3.1E+05	n	Vanadium	76.7		58.5		47.3		52.4		61.7		77.4		67.5		71.9		65.6	
1.9E+07	n	Zinc	7800		148		407		1330		622		2610		341		186		245	
--		Phosphate, Total (as P)	1520		975		1740		816		567		1080		1020		1090		1450	

Table F-4e(4). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-MRL-19G-0		OU3-0-SO-MRU-10B-0		OU3-0-SO-MRU-12B-0		OU3-0-SO-MRU-12E-0		OU3-0-SO-MRU-13B-0		OU3-0-SO-MRU-1B-0		OU3-0-SO-MRU-3A-0		OU3-0-SO-MRU-3B-0		OU3-0-SO-MRU-4A-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	9/29/2015		9/30/2015		9/30/2015		10/1/2015		9/30/2015		11/10/2014		11/10/2014		11/10/2014		11/10/2014	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
6.2E+07		Aluminum	40200		27100		26600		28600		37600		18300		28100		24200		30000	
2.5E+04		Antimony	0.16	ND	12.9		22.1		6.68		24		37.3		29		112		8.16	
9.6E+04	c	Arsenic	19.9		22.6		39.3		22		37.5		42		33.9		98.7		16.8	
1.2E+07	n	Barium	306		331		318		289		460		200		261		302		253	
1.2E+05	n	Beryllium	0.002615	ND	0.002715	ND	0.00294	ND	0.003025	ND	0.00283	ND	0.003125	ND	0.003235	ND	0.003105	ND	0.003115	ND
6.2E+04	n	Cadmium	1.8		4.01		11		2.95		4.53		10.9		6.67		17.4		2.94	
--		Calcium	6760		6630		15100		12000		5630		10700		15200		13100		21400	
9.3E+07	n	Chromium	40.1		32.6		45.7		131		30.8		72.1		91		73.7		74.5	
1.9E+04	n	Cobalt	14.2		13.3		8.71		9.56		11		6.9		8.54		10.6		10.8	
2.5E+06	n	Copper	34.8		60		294		39.5		62		89.3		97.3		210		76.1	
4.3E+07	n	Iron	29100		27500		36400		22300		28600		15800		21100		20600		26300	
8.2E+03		Lead	83.2		247		925		191		702		1170		914		3040		213	
--		Magnesium	6690		4520		6120		8150		4480		3480		5630		4620		6020	
1.5E+06	n	Manganese	1310		838		662		1230		1070		788		1090		1850		1590	
1.9E+04	n	Mercury	0.0913		0.712		0.709		0.211		1.33		0.712		1.15		0.526		0.306	
1.2E+06	n	Nickel	22.2		19.8		1.08	ND	26.8		1.04	ND	1.15	ND	1.19	ND	22.8		23.9	
--		Potassium	9550		6600		6550		8800		8580		5060		8660		6640		8930	
3.1E+05	n	Selenium	0.2395	ND	0.2485	ND	0.2695	ND	0.277	ND	0.2595	ND	0.2865	ND	0.2965	ND	0.2845	ND	0.2855	ND
3.1E+05	n	Silver	0.00985	ND	2.52		5.11		0.0114	ND	2.96		6.53		6.93		13.9		0.0117	ND
--		Sodium	388		294		2310		385		224		352		452		416		424	
6.2E+02	n	Thallium	0.00222	ND	0.002305	ND	0.002495	ND	0.002565	ND	0.0024	ND	0.002655	ND	0.002745	ND	0.002635	ND	0.002645	ND
3.1E+05	n	Vanadium	69.6		68.3		46.5		50		62.8		37.9		51.4		49.3		55.1	
1.9E+07	n	Zinc	192		861		1940		328		993		1380		994		2260		424	
--		Phosphate, Total (as P)	1030		1240		625		3340		1100		4020		5460		4170		68400	

Table F-4e(4). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-MRU-4B-0		OU3-0-SO-MRU-5B-0		OU3-0-SO-MRU-6A-0		OU3-0-SO-MRU-6B-0		OU3-0-SO-MRU-6D-0		OU3-0-SO-MRU-7B-0		OU3-0-SO-MRU-8B-0		OU3-0-SO-MRU-8D-0		OU3-0-SO-MRU-9B-0	
		Depth	0		0		0		0		0		0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
		Sample date	11/10/2014		11/11/2014		11/11/2014		11/11/2014		11/12/2014		9/30/2015		9/30/2015		10/1/2015		9/30/2015	
		Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
6.2E+07		Aluminum	17100		12700		20900		14900		22100		17700		25400		35400		29100	
2.5E+04		Antimony	61.7		23.4		14.3		0.2435	ND	16.7		28.5		213		8.23		21.5	
9.6E+04	c	Arsenic	42.8		26.6		22		5.55		24.3		31.7		244		18.3		34.3	
1.2E+07	n	Barium	228		181		256		164		207		154		269		228		221	
1.2E+05	n	Beryllium	0.00314	ND	2.28		0.003235	ND	0.003985	ND	0.00284	ND	0.00243	ND	0.003255	ND	0.003265	ND	0.00262	ND
6.2E+04	n	Cadmium	14.1		9.99		3.47		0.0113	ND	7.88		5.59		41.6		2.68		5.05	
--		Calcium	17300		13900		27600		16300		11200		64300		20100		13500		5800	
9.3E+07	n	Chromium	40.1		17.6		67.7		28.8		29.4		24.3		69.4		43.7		41	
1.9E+04	n	Cobalt	6.11		3.56		7.88		5.05		9.16		5.87		14.8		14.4		15.7	
2.5E+06	n	Copper	152		74.4		37		1.025	ND	48		64.1		473		35.9		51.8	
4.3E+07	n	Iron	14100		11600		18800		12100		19400		16600		33200		30700		32500	
8.2E+03		Lead	1600		744		371		21.4		511		906		6610		217		495	
--		Magnesium	4010		2750		6710		7610		8320		5550		11700		11100		6200	
1.5E+06	n	Manganese	984		269		956		354		1480		2810		4600		1060		965	
1.9E+04	n	Mercury	2.54		0.783		0.606		0.00175	ND	0.815		0.993		17.7		0.284		1.02	
1.2E+06	n	Nickel	1.155	ND	1.235	ND	1.185	ND	1.465	ND	1.045	ND	0.895	ND	29.2		24.7		23.4	
--		Potassium	5740		2190		5940		3360		7360		4750		5830		5010		5070	
3.1E+05	n	Selenium	0.288	ND	0.308	ND	0.296	ND	0.365	ND	0.2605	ND	0.2225	ND	0.298	ND	0.299	ND	0.24	ND
3.1E+05	n	Silver	6.9		2.92		0.01215	ND	0.015	ND	2.78		4.42		50.2		0.0123	ND	3.15	
--		Sodium	330		697		425		212		242		295		368		747		238	
6.2E+02	n	Thallium	0.002665	ND	0.00285	ND	0.002745	ND	0.00338	ND	0.00241	ND	0.002065	ND	0.00276	ND	0.00277	ND	0.002225	ND
3.1E+05	n	Vanadium	33.6		20.7		43.5		30.9		49		41		78.6		68.2		79.6	
1.9E+07	n	Zinc	1150		1610		468		67.4		1130		908		9290		402		971	
--		Phosphate, Total (as P)	1900		1200		2680		436		1010		2230		1710		1240		1290	

Table F-4e(4). (cont.)

Empire Canyon industrial PRGs (mg/kg)		Sample ID	OU3-0-SO-NR-12Q-0		OU3-0-SO-NR-2C-0		OU3-0-SO-NR-2F-0		OU3-0-SO-NR-4J-0	
		Depth	0		0		0		0	
		Operable Unit	OU3		OU3		OU3		OU3	
		Sample date	10/5/2015		9/22/2015		9/22/2015		9/22/2015	
		Habitat	Upland		Upland		Upland		Upland	
6.2E+07		Aluminum	17300		20900		24400		30500	
2.5E+04		Antimony	0.164	ND	7.28		7.25		0.1445	ND
9.6E+04	c	Arsenic	8.36		10.9		13.9		47.2	
1.2E+07	n	Barium	105		348		241		234	
1.2E+05	n	Beryllium	0.002685	ND	0.002525	ND	0.0025	ND	0.00237	ND
6.2E+04	n	Cadmium	0.833		3.07		2.67		1.18	
--		Calcium	2700		8660		8800		7330	
9.3E+07	n	Chromium	20.2		32.2		32.3		42.4	
1.9E+04	n	Cobalt	6.05		10.9		8.13		9.73	
2.5E+06	n	Copper	17.1		43		34.7		19.5	
4.3E+07	n	Iron	13100		25200		19700		24500	
8.2E+03		Lead	42.4		251		233		77.4	
--		Magnesium	3110		5270		5850		7550	
1.5E+06	n	Manganese	382		706		472		318	
1.9E+04	n	Mercury	0.162		0.263		0.322		0.0772	
1.2E+06	n	Nickel	0.985	ND	17.3		0.92	ND	17.9	
--		Potassium	4800		5050		5740		7030	
3.1E+05	n	Selenium	0.246	ND	0.2315	ND	0.229	ND	0.217	ND
3.1E+05	n	Silver	0.0101	ND	1.57		1.37		0.0089	ND
--		Sodium	293		1670		459		526	
6.2E+02	n	Thallium	0.00228	ND	0.002145	ND	0.00212	ND	0.00201	ND
3.1E+05	n	Vanadium	33.6		60.6		45.1		83.8	
1.9E+07	n	Zinc	60.1		333		348		104	
--		Phosphate, Total (as P)	291		1420		983		1060	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
MRU = OU3 Middle Reach Upper
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
PRG = preliminary remediation goal
SO = Soil
WR = OU3 P.C. West Reach

Table F-4f(1). Screening results for OU2 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

RME low intensity visitor (mg/kg)	Sample ID				OU2-0-SO-10L-0		OU2-0-SO-12I-0		OU2-0-SO-12L-0		OU2-0-SO-15L-0		OU2-0-SO-15N-0		OU2-0-SO-17L-0		OU2-0-SO-17N-0	
	Depth				0		0		0		0		0		0		0	
	Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date				9/21/2015		9/17/2015		9/21/2015		9/17/2015		9/16/2015		9/17/2015		9/16/2015	
	Habitat	**N**	**count of NDs**	**% detected**	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	33	0	100%	27400		18200		7900		3350		6830		30200		3580	
--	Antimony	33	1	97%	16.7		1550		874		847		304		11.4		413	
4.0	Arsenic	33	0	100%	**10.5**		**1350**		**649**		**757**		**258**		**23.8**		**406**	
--	Barium	33	0	100%	195		227		185		63.8		236		319		99.4	
--	Beryllium	33	33	0%	0.00302	ND	0.00249	ND	0.00264	ND	0.00437	ND	0.002865	ND	0.002705	ND	0.0026	ND
192	Cadmium	33	0	100%	15.7		**206**		79.6		175		37.4		4.08		69	
--	Calcium	33	0	100%	6830		39100		25000		74700		42000		7300		43500	
--	Chromium	33	2	94%	34.1		123		30		1.785	ND	34.5		39.3		17.7	
--	Cobalt	33	0	100%	5.77		3.97		2.69		7.29		6.91		11.8		2.2	
--	Copper	33	0	100%	34.9		2450		1670		252		385		46.2		579	
--	Iron	33	0	100%	20500		24000		15300		11200		31600		34800		11100	
1,331	Lead	33	1	97%	15.2	ND	34400		16900		1830		7680		272		7900	
--	Magnesium	33	0	100%	6220		17700		8680		3610		14300		6140		12000	
--	Manganese	33	0	100%	183		3650		1730		350		1670		1070		2100	
57.0	Mercury	33	0	100%	0.202		31.3		26		1.88		9.38		0.424		8.23	
--	Nickel	33	27	18%	1.11	ND	0.915	ND	0.97	ND	1.605	ND	1.05	ND	18.6		0.955	ND
--	Potassium	33	0	100%	7520		6500		2350		942		2280		6150		1270	
--	Selenium	33	19	42%	0.2765	ND	20.5		10.2		0.4	ND	10.8		0.248	ND	0.238	ND
4.0E+07	Silver	33	5	85%	0.01135	ND	236		120		7.02		41.3		1.6		55.2	
--	Sodium	33	0	100%	1020		473		399		1350		285		944		162	
--	Thallium	33	14	58%	0.00256	ND	11.9		0.00224	ND	24.9		3.98		0.002295	ND	5.33	
--	Vanadium	33	1	97%	40.3		41.8		18.9		5.9		18.8		40.6		11.4	
--	Zinc	33	0	100%	1370		31300		20300		65600		11100		427		17200	
--	Phosphate, Total (as P)	33	0	100%	905		3710		1460		419		2050		863		1660	

Table F-4f(1). (cont.)

RME low intensity visitor (mg/kg)	Sample ID	OU2-0-SO-26V-0		OU2-0-SO-30R-0		OU2-0-SO-30Y-0		OU2-0-SO-34G-0		OU2-0-SO-35V-0		OU2-0-SO-37V-0		OU2-0-SO-39V-0		OU2-0-SO-43T-0		OU2-0-SO-44T-0	
	Depth	0		0		0		0		0		0		0		0		0	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	9/16/2015		9/15/2015		9/16/2015		8/5/2015		8/5/2015		8/5/2015		8/4/2015		8/4/2015		9/14/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	3370		5600		4610		7530		12000		20000		12800		2940		6960	
--	Antimony	132		489		234		63		45.2		24.8		320		3.78		353	
4.0	Arsenic	**217**		**335**		**335**		**110**		**206**		**48.7**		**306**		**4.23**		**413**	
--	Barium	161		119		184		159		196		269		336		77.7		248	
--	Beryllium	0.00264	ND	0.00246	ND	0.002595	ND	0.00263	ND	0.00344	ND	0.0025	ND	0.00244	ND	0.002495	ND	0	ND
192	Cadmium	27.3		54		93.1		63.6		17.5		5.52		55.3		3		127	
--	Calcium	38100		27500		57000		41400		24200		27800		15000		117000		48800	
--	Chromium	20.6		26		25.9		10.9		15		24		22.5		1.02	ND	28	
--	Cobalt	2.5		2.2		8.04		12.2		14.5		8.61		27.9		1.88		9	
--	Copper	125		873		337		126		89.7		76.7		411		31.5		806	
--	Iron	16100		10400		46500		11900		26100		20100		20900		3340		39300	
1,331	Lead	2810		13900		6410		605		1110		616		9200		51.6		10600	
--	Magnesium	14900		7660		18500		3480		4670		6790		4000		4650		13300	
--	Manganese	1700		1420		2460		1770		2420		266		3850		2820		2050	
57.0	Mercury	1.65		17.7		4.82		0.642		4.79		1.8		23.9		0.298		14	
--	Nickel	0.97	ND	0.905	ND	0.955	ND	0.965	ND	1.265	ND	0.92	ND	0.895	ND	0.915	ND	1	ND
--	Potassium	1440		1560		2070		1900		2910		5070		3630		1540		2240	
--	Selenium	0.2415	ND	0.2255	ND	15.1		0.2405	ND	0.315	ND	0.229	ND	8.57		0.2285	ND	10	
4.0E+07	Silver	17		60.6		34.2		5.58		3.92		3.48		24.7		0.0094	ND	50	
--	Sodium	127		280		278		202		783		587		278		788		400	
--	Thallium	0.00224	ND	3.33		3.96		7.29		0.00292	ND	0.002125	ND	0.00207	ND	0.002115	ND	7	
--	Vanadium	10.4		11.6		15.2		14.1		17.4		31.8		25.8		5.56		9	
--	Zinc	4430		17200		15400		7970		2680		995		6590		289		31800	
--	Phosphate, Total (as P)	1480		1390		1330		1040		913		721		1320		844		1740	

Table F-4f(1). (cont.)

RME low intensity visitor (mg/kg)	Sample ID	OU2-0-SO-44V-0		OU2-0-SO-44W-0		OU2-0-SO-45T-0		OU2-0-SO-45V-0		OU2-0-SO-46V-0		OU2-0-SO-47T-0		OU2-0-SO-48S-0		OU2-0-SO-48T-0		OU2-0-SO-4A-0	
	Depth	0		0		0		0		0		0		0		0		0	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	7/31/2015		7/31/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		9/24/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	20500		10200		11300		6470		5310		9190		7330		6640		31200	
--	Antimony	570		344		513		224		332		269		267		5490		12.4	
4.0	Arsenic	**550**		**442**		**589**		**241**		**743**		**360**		**314**		**7010**		**22.2**	
--	Barium	298		224		330		171		160		212		196		575		458	
--	Beryllium	0.003105	ND	0.00328	ND	0.0022	ND	0.002365	ND	0	ND	0	ND	0.00284	ND	0.00358	ND	0.00294	ND
192	Cadmium	86.5		180		105		65.4		62		118		101		66.1		3.68	
--	Calcium	41800		44700		69600		50200		40400		25600		52900		14900		6170	
--	Chromium	65.4		30.3		49.5		33.3		26		29		27.5		20		37.7	
--	Cobalt	13.5		21.4		13.5		4.99		7		9		9.9		11.3		11.5	
--	Copper	1080		650		845		437		278		494		387		396		48.1	
--	Iron	33700		25800		37500		21300		27500		22700		28800		130000		26700	
1,331	Lead	9720		4800		11400		5490		4220		5600		5920		3810		271	
--	Magnesium	14600		10300		15800		16200		13900		7060		13700		3440		5670	
--	Manganese	2750		3200		2280		2310		2300		1010		1950		1680		1070	
57.0	Mercury	26.5		9.27		10.8		3.27		3		13		3.61		1.57		0.643	
--	Nickel	22.6		23.5		0.81	ND	0.87	ND	1	ND	2	ND	1.04	ND	1.315	ND	20.1	
--	Potassium	6030		3250		4330		2830		2210		2410		2740		2310		7710	
--	Selenium	14.3		0.3005	ND	15.6		8.2		8		20		9.49		0.3275	ND	0.2695	ND
4.0E+07	Silver	72.3		41.3		81.3		26.8		22		27		28.2		21.1		1.63	
--	Sodium	387		3430		204		115		119		391		376		335		487	
--	Thallium	21.6		45.7		14.1		5.9		4		23		10.3		35.4		0.002495	ND
--	Vanadium	30.7		14.5		14.3		8.5		3		13		9.21		0.0825	ND	57	
--	Zinc	26600		29800		18000		14600		13200		19400		27900		22200		515	
--	Phosphate, Total (as P)	2550		261		1490		1060		1670		3480		1240		519		1020	

Table F-4f(1). (cont.)

RME low intensity visitor (mg/kg)	Sample ID	OU2-0-SO-50P-0		OU2-0-SO-50Q-0		OU2-0-SO-50T-0		OU2-0-SO-7F-0		OU2-0-SO-8G-0		OU2-0-SO-8I-0		OU2-0-SO-OP1-0		OU2-0-SO-OP2-0	
	Depth	0		0		0		0		0		0		0		0	
		Dups ave															
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	7/29/2015		7/29/2015		7/30/2015		9/17/2015		9/17/2015		9/21/2015		7/29/2015		9/17/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	30600		7320		35800		8860		9090		5200		11200		27200	
--	Antimony	6.6		276		0.1895	ND	826		1270		257		244		8.27	
4.0	Arsenic	**11.9**		**247**		**11.3**		**1020**		**1060**		**292**		**268**		**16.8**	
--	Barium	312		166		262		158		174		57.4		269		450	
--	Beryllium	0.0030675	ND	0.00306	ND	0.0031	ND	0.002665	ND	0.002455	ND	0.002505	ND	0.00329	ND	0.002765	ND
192	Cadmium	2.395		44.8		1.3		160		119		44.8		42.2		2	
--	Calcium	7775		50200		6300		41900		30800		42900		17300		8500	
--	Chromium	34.4		28.1		40.4		50.2		40.5		28.4		23.5		31.4	
--	Cobalt	10.8		5.92		11.4		3.41		6.23		2.42		3.57		11.4	
--	Copper	40.8		352		22.8		1010		2040		358		550		58.1	
--	Iron	26200		17900		27300		19600		23300		11200		19200		25100	
1,331	Lead	160.5		4730		75.1		27400		28900		6260		9960		176	
--	Magnesium	6410		11900		6910		14200		9460		12200		5970		6390	
--	Manganese	765.5		1730		667		2740		4220		2110		832		641	
57.0	Mercury	0.228		10.7		0.0463		16.3		**79.1**		5.64		7.22		0.372	
--	Nickel	1.1275	ND	1.125	ND	20.9		0.98	ND	0.9	ND	0.92	ND	24.4		1.015	ND
--	Potassium	6555		2430		6480		3590		2540		1820		3250		6060	
--	Selenium	0.281	ND	0.2805	ND	0.284	ND	9.53		10.8		0.2295	ND	0.301	ND	0.253	ND
4.0E+07	Silver	0.01155	ND	33.8		0.0117	ND	169		145		32.2		35.8		0.0104	ND
--	Sodium	710.5		242		520		327		491		176		578		794	
--	Thallium	0.002605	ND	4.6		0.00263	ND	6.25		3.34		0.002125	ND	0.00279	ND	0.002345	ND
--	Vanadium	50.3		12.1		60		21.6		24.2		11		122		39.6	
--	Zinc	274		10400		122		27900		29700		12100		8250		272	
--	Phosphate, Total (as P)	1450		1360		1450		5180		1660		1430		1580		883	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
RBC = risk-based concentration
RME = reasonable maximum exposure
SO = Soil

Table F-4f(2). Screening results for OU2 Upland soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

	Sample ID				OU2-0-SO-21D-0		OU2-0-SO-27I-0		OU2-0-SO-29F-0		OU2-0-SO-2A-0		OU2-0-SO-3B-0		OU2-0-SO-4B-0	
	Depth				0		0		0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date				9/22/2015		9/15/2015		9/15/2015		9/22/2015		9/24/2015		9/24/2015	
	Habitat	**N**	**count of NDs**	**% detected**	Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	6	0	100%	29400		39000		31800		36100		21500		8310	
--	Antimony	6	1	83%	12.3		0.158	ND	5.3		2610		18.1		1290	
4.0	Arsenic	6	0	100%	**23.9**		**11.4**		**14.6**		**760**		**21.9**		**799**	
--	Barium	6	0	100%	289		300		316		289		230		181	
--	Beryllium	6	6	0%	0.002855	ND	0.002585	ND	0.00284	ND	0.002695	ND	0.00258	ND	0.00301	ND
192	Cadmium	6	0	100%	4.39		1.15		2.34		40.7		3.34		**293**	
--	Calcium	6	0	100%	6870		5050		6710		1890		5560		15200	
--	Chromium	6	0	100%	39.6		36.6		44.6		34.2		35.8		29.2	
--	Cobalt	6	0	100%	10.4		11.9		12.9		5.36		10.8		6.17	
--	Copper	6	0	100%	55.5		23.1		40.4		2230		56.2		2310	
--	Iron	6	0	100%	22500		28400		25400		9970		23100		28100	
1,331	Lead	6	0	100%	359		32.7		171		20400		485		32900	
--	Magnesium	6	0	100%	5220		6470		6000		1130		4310		5080	
--	Manganese	6	0	100%	738		1040		1030		1770		945		2580	
57.0	Mercury	6	1	83%	0.367		0.000745	ND	0.11		12.9		0.799		**104**	
--	Nickel	6	4	33%	1.05	ND	19.2		1.04	ND	35.9		0.945	ND	1.105	ND
--	Potassium	6	0	100%	7590		9210		7650		1690		5360		2090	
--	Selenium	6	5	17%	0.2615	ND	0.237	ND	0.26	ND	0.247	ND	0.236	ND	9.6	
4.0E+07	Silver	6	2	67%	2.35		0.00975	ND	0.0107	ND	196		2.1		112	
--	Sodium	6	0	100%	765		450		652		3370		463		765	
--	Thallium	6	6	0%	0.002425	ND	0.002195	ND	0.00241	ND	0.00229	ND	0.00219	ND	0.002555	ND
--	Vanadium	6	0	100%	55.2		59.6		60.7		28.2		50.7		16.6	
--	Zinc	6	0	100%	597		87.6		230		18600		633		65300	
--	Phosphate, Total (as P)	6	0	100%	1250		590		858		865		1280		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
RBC = risk-based concentration
RME = reasonable maximum exposure
SO = Soil

Table F-4f(3). Screening results for OU3 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

	Sample ID				OU3-0-SO-ER-10S-0		OU3-0-SO-ER-12R-0		OU3-0-SO-ER-3M-0		OU3-0-SO-ER-5A-0		OU3-0-SO-ER-5G-0		OU3-0-SO-ER-5K-0	
	Depth				0		0		0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit Sample date Habitat	**N**	**count of NDs**	**% detected**	OU3 9/11/2015 Floodplain		OU3 9/14/2015 Floodplain		OU3 8/6/2015 Floodplain		OU3 8/6/2015 Floodplain		OU3 8/6/2015 Floodplain		OU3 9/10/2015 Floodplain	
--	Aluminum	149	0	100%	25100		28100		4290		32800		20100		35600	
--	Antimony	149	4	97%	69.4		16.7		99.7		107		106		124	
4.0	Arsenic	149	0	100%	**57.1**		**19.5**		**364**		**130**		**69.9**		**109**	
--	Barium	149	0	100%	293		204		350		208		164		193	
--	Beryllium	149	68	54%	0.0028	ND	0.002365	ND	0.00292	ND	0.002435	ND	0.002615	ND	0.002515	ND
192	Cadmium	149	0	100%	7.2		2.91		12		11.7		23.8		15	
--	Calcium	149	0	100%	12500		7330		62300		6880		18100		12400	
--	Chromium	149	2	99%	31.9		29.4		1.195	ND	44.3		27.5		43.1	
--	Cobalt	149	0	100%	9.98		8.26		26.7		9.5		6.1		7.62	
--	Copper	149	0	100%	136		40.5		67		245		251		226	
--	Iron	149	0	100%	21900		24100		24600		24000		13400		26300	
1,331	Lead	149	0	100%	1330		244		263		2720		1870		2760	
--	Magnesium	149	0	100%	6200		5440		3020		6110		4950		9370	
--	Manganese	149	0	100%	640		693		15800		843		343		1650	
57.0	Mercury	149	2	99%	1.52		0.253		0.325		1.83		1.28		3.19	
--	Nickel	149	43	71%	1.03	ND	0.87	ND	1.075	ND	17.7		17.9		20.5	
--	Potassium	149	0	100%	5820		6810		1400		7600		4250		8180	
--	Selenium	149	47	68%	0.2565	ND	0.2165	ND	0.2675	ND	0.223	ND	0.2395	ND	0.2305	ND
4.0E+07	Silver	149	12	92%	13.1		2.09		3.26		20.8		12		26.8	
--	Sodium	149	0	100%	757		521		596		402		502		555	
--	Thallium	149	39	74%	0.002375	ND	0.002005	ND	7.3		4.64		6.65		7.01	
--	Vanadium	149	2	99%	51.1		48.7		4.35		52.2		33.3		51.5	
--	Zinc	149	0	100%	760		291		10300		2440		1610		6290	
--	Phosphate, Total (as P)	149	0	100%	703		612		1520		750		734		982	

Table F-4f(3). (cont.)

	Sample ID	OU3-0-SO-ER-7J-0		OU3-0-SO-FT-1B-0		OU3-0-SO-FT-1C-0		OU3-0-SO-FT-2B-0		OU3-0-SO-FT-2C-0		OU3-0-SO-FT-3B-0		OU3-0-SO-FT-3C-0		OU3-0-SO-FT-3D-0		OU3-0-SO-FT-4A-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/10/2015		9/28/2015		9/25/2015		9/28/2015		9/25/2015		10/5/2015		9/25/2015		9/25/2015		9/28/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	4110		30200		13300		22100		5620		21700		4690		38700		15300	
--	Antimony	13.4		53		373		62.3		244		924		253		190		48.9	
4.0	Arsenic	**23.3**		**47.5**		**371**		**41**		**231**		**372**		**207**		**67.1**		**94.4**	
--	Barium	147		244		136		252		61.5		211		83.5		417		411	
--	Beryllium	0.00326	ND	0.003325	ND	0.0023	ND	0.00306	ND	0.002385	ND	0.003105	ND	0.002385	ND	0.00263	ND	0.00635	ND
192	Cadmium	1.66		17.5		161		13.7		151		77.2		135		47.6		11.5	
--	Calcium	176000		11100		54300		9950		81200		8740		81200		7700		27500	
--	Chromium	1.33	ND	37.9		34.2		32.3		31.7		26.1		59.3		41.1		24.5	
--	Cobalt	6.07		11.8		9.01		8.39		15.8		12		11		14.5		16.8	
--	Copper	27.8		131		493		124		430		1230		350		256		118	
--	Iron	10600		26400		35600		22500		63100		20900		46700		26800		26400	
1,331	Lead	128		907		9440		1230		8030		12200		5050		1420		1160	
--	Magnesium	3480		7540		17600		5260		23400		4660		20800		7110		6480	
--	Manganese	5940		1480		3130		862		2390		3000		2150		286		1790	
57.0	Mercury	0.139		14.9		6.94		6.49		1.76		**167**		2.34		40.1		2.74	
--	Nickel	1.195	ND	1.22	ND	0.845	ND	1.125	ND	0.945	ND	1.14	ND	0.875	ND	21.2		2.335	ND
--	Potassium	1430		6880		3720		6180		2550		3690		2270		8550		3440	
--	Selenium	0.2985	ND	0.3045	ND	8.76		0.28	ND	14.3		0.284	ND	10.9		0.241	ND	0.58	ND
4.0E+07	Silver	0.01225	ND	8.3		77.2		7.61		31.8		75.7		28.3		10.8		7.05	
--	Sodium	420		1350		234		448		193		655		137		915		2930	
--	Thallium	0.002765	ND	0.00282	ND	5.42		0.002595	ND	4.58		0.002635	ND	3.56		0.002235	ND	0.0054	ND
--	Vanadium	5.69		55.1		16.8		39.6		1.62		37.9		3.41		62.3		24.1	
--	Zinc	271		1430		30100		1580		25200		11600		21900		1970		1540	
--	Phosphate, Total (as P)	428		1710		1770		1040		2050		1530		1770		1030		1300	

Table F-4f(3). (cont.)

	Sample ID	OU3-0-SO-FT-4B-0		OU3-0-SO-FT-4C-0		OU3-0-SO-FT-5C-0		OU3-0-SO-FT-6B-0		OU3-0-SO-FT-6D-0		OU3-0-SO-MRL-15D-0		OU3-0-SO-MRL-15E-0		OU3-0-SO-MRL-16D-0		OU3-0-SO-MRL-16F-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/25/2015		9/25/2015		9/25/2015		9/24/2015		9/25/2015		9/29/2015		9/29/2015		9/30/2015		9/28/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	9140		4640		5640		52200		23900		34600		27100		40200		19400	
--	Antimony	355		183		373		152		102		4.47		1460		4.27		1800	
4.0	Arsenic	**431**		**155**		**463**		**129**		**34.2**		**16.1**		**1250**		**22.4**		**1130**	
--	Barium	633		80.2		115		347		440		288		206		275		215	
--	Beryllium	0.00306	ND	0.00258	ND	0.00244	ND	0	ND	0.004375	ND	0.002635	ND	0.00411	ND	0.00258	ND	0.00291	ND
192	Cadmium	34		48.8		120		89		18.3		1.51		99		1.96		77.6	
--	Calcium	41600		96700		53200		14300		11200		7520		54000		5290		10600	
--	Chromium	42.7		32.3		32		74		50.8		41.5		143		48.3		25.3	
--	Cobalt	7.13		6.34		15		10		8.1		10.9		3.31		17.6		9.41	
--	Copper	408		263		838		589		224		34		1920		36.8		3140	
--	Iron	42700		18900		60100		33700		18400		25800		23200		29100		27100	
1,331	Lead	7940		4390		9750		6070		2580		113		33000		191		40700	
--	Magnesium	14600		24400		16300		12700		7850		7080		19900		6510		3590	
--	Manganese	1850		2440		2380		796		798		1060		2280		1310		2740	
57.0	Mercury	4.82		2.02		8.57		16		2.47		0.304		33		0.269		**2950**	
--	Nickel	0.98	ND	0.89	ND	0.895	ND	29		1.285	ND	19.9		1.51	ND	24.7		1.07	ND
--	Potassium	3230		2300		2390		10100		6430		9380		9710		9490		3230	
--	Selenium	22.9		0.2365	ND	21.8		12		0.401	ND	0.2415	ND	20.6		0.236	ND	12.3	
4.0E+07	Silver	46		36.5		55.8		46		14.3		0.0099	ND	175		0.0097	ND	18.5	
--	Sodium	265		164		235		558		659		315		390		266		1120	
--	Thallium	7.62		0.00219	ND	7.76		6		0.003715	ND	0.002235	ND	10.1		0.00219	ND	0.00247	ND
--	Vanadium	12.3		7.72		0.07	ND	84		46.3		63.6		67.9		63.4		39.2	
--	Zinc	4900		12800		22300		10000		2780		192		22900		336		26800	
--	Phosphate, Total (as P)	1680		1610		1690		1410		1530		1320		4350		746		2240	

Table F-4f(3). (cont.)

	Sample ID	OU3-0-SO-MRL-16H-0		OU3-0-SO-MRL-18F-0		OU3-0-SO-MRU-10C-0		OU3-0-SO-MRU-11C-0		OU3-0-SO-MRU-12C-0		OU3-0-SO-MRU-13C-0		OU3-0-SO-MRU-1C-0		OU3-0-SO-MRU-1D-0	
	Depth	0		0		0		0		0		0		0		0	
														Dups ave			
RME low	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
intensity visitor	Sample date	9/28/2015		9/29/2015		10/1/2015		10/1/2015		10/1/2015		10/1/2015		11/10/2014		11/12/2014	
(mg/kg)	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	35800		33700		15000		2.08		7270		41100		17160		21100	
--	Antimony	4.33		188		290		663		374		290		165.5		24.3	
4.0	Arsenic	**14.4**		**75.5**		**171**		**793**		**568**		**182**		**192**		**24.1**	
--	Barium	269		292		303		654		68.4		375		291		186	
--	Beryllium	0.002655	ND	0.00381	ND	0.002705	ND	0.003065	ND	0.00242	ND	0.00266	ND	0.0030475	ND	0.00298	ND
192	Cadmium	2.26		91.4		50.5		148		70.4		44.6		59.1		7.1	
--	Calcium	11900		10500		12600		5.43		42600		14400		18450		15000	
--	Chromium	38.3		45.6		18.6		98.6		29.8		76.3		47.15		50.6	
--	Cobalt	9.26		12.4		6.03		3.93		4.11		9.91		14.9		11	
--	Copper	38.9		451		561		854		541		909		334.5		74.7	
--	Iron	25200		26300		19600		4.09		15300		28700		35650		20400	
1,331	Lead	88.2		1790		7060		14000		8950		8930		4005		660	
--	Magnesium	6510		7070		3150		2.51		10400		13700		9690		8400	
--	Manganese	541		763		1360		2790		1950		1510		2570		1140	
57.0	Mercury	0.124		**58.7**		8.57		16.4		5.28		36.4		2.7535		1.53	
--	Nickel	19.6		1.4	ND	0.99	ND	1.125	ND	0.89	ND	25.5		13.2725		1.095	ND
--	Potassium	8580		7040		2350		0.884		2120		7240		5825		7640	
--	Selenium	0.243	ND	0.349	ND	0.2475	ND	18.9		8.55		10.4		0.27925	ND	0.273	ND
4.0E+07	Silver	0.01	ND	17		26.4		85.6		45.2		77.6		30.55		4.59	
--	Sodium	427		593		559		0.0215		276		671		375		705	
--	Thallium	0.00225	ND	0.003235	ND	0.002295	ND	21.6		8.51		8.31		2.211325		0.00253	ND
--	Vanadium	54.3		54		26.5		0.00277		21.8		72.4		44.15		48.9	
--	Zinc	286		3280		12000		15300		19000		9500		5635		1230	
--	Phosphate, Total (as P)	1430		1340		1030		3090		1530		1470		1990		1720	

Table F-4f(3). (cont.)

	Sample ID	OU3-0-SO-MRU-2B-0		OU3-0-SO-MRU-2C-0		OU3-0-SO-MRU-2D-0		OU3-0-SO-MRU-3C-0		OU3-0-SO-MRU-3D-0		OU3-0-SO-MRU-4C-0		OU3-0-SO-MRU-4D-0		OU3-0-SO-MRU-5C-0		OU3-0-SO-MRU-5D-0	
	Depth	0		0		0		0		0		0		0		0		0	
														Dups ave					
RME low	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
intensity visitor	Sample date	11/10/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/11/2014		11/12/2014	
(mg/kg)	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	20900		26800		29000		31600		19600		17000		28450		26200		26300	
--	Antimony	100		40.1		0.1675	ND	24.7		0.19	ND	0.1725	ND	8.1		61.4		13.2	
4.0	Arsenic	**80**		**51.5**		**7.23**		**37.5**		**7.5**		**9.02**		**15.35**		**151**		**19.2**	
--	Barium	225		220		218		328		167		141		257.5		318		258	
--	Beryllium	0.003165	ND	0.00298	ND	0.002745	ND	0.003015	ND	0.00311	ND	0.00282	ND	0.003135	ND	0.003305	ND	0.002925	ND
192	Cadmium	13		31.6		2.4		9.5		3.3		1.21		2.665		65.1		4.88	
--	Calcium	12100		14400		8660		6690		14200		5800		5525		33700		5600	
--	Chromium	62.7		43.8		37.1		36		66.8		37.4		35.45		47.6		38.4	
--	Cobalt	7.04		10.5		15.9		12.3		28.8		5.65		11		21.9		10.9	
--	Copper	160		144		31.4		111		58.9		32.4		35.15		216		46	
--	Iron	18000		21200		30300		28100		22700		13200		25750		27200		22700	
1,331	Lead	2460		1250		42.6		868		68.2		27.7		185		2040		388	
--	Magnesium	4120		7440		6620		6920		8710		3960		6270		10100		7220	
--	Manganese	925		1490		776		879		576		336		913		15600		1170	
57.0	Mercury	3.98		2.77		0.00142	ND	1.01		0.0804		0.00132	ND	0.295		3.88		0.615	
--	Nickel	1.165	ND	1.095	ND	1.01	ND	1.105	ND	24.8		1.035	ND	11.4425		40.4		21.2	
--	Potassium	5640		6010		5430		7930		4380		4120		8775		5640		8920	
--	Selenium	0.29	ND	0.273	ND	0.2515	ND	0.276	ND	0.2845	ND	0.2585	ND	0.28725	ND	0.303	ND	0.268	ND
4.0E+07	Silver	10.4		8.87		0.01035	ND	3.88		0.0117	ND	0.0106	ND	0.011825	ND	16.6		1.91	
--	Sodium	417		477		2190		359		2080		457		385.5		493		277	
--	Thallium	0.002685	ND	0.00253	ND	0.00233	ND	0.00256	ND	0.00264	ND	0.002395	ND	0.0026625	ND	0.002805	ND	0.002485	ND
--	Vanadium	39.8		50.3		83.7		62.3		56.4		33.8		64.35		46.1		61.2	
--	Zinc	1900		2990		166		1250		260		59.7		355.5		12500		708	
--	Phosphate, Total (as P)	3760		1800		927		1260		847		1410		1255		2010		1640	

Table F-4f(3). (cont.)

	Sample ID	OU3-0-SO-MRU-6C-0		OU3-0-SO-MRU-7C-0		OU3-0-SO-MRU-7D-0		OU3-0-SO-MRU-8C-0		OU3-0-SO-NR-11J-0		OU3-0-SO-NR-13L-0		OU3-0-SO-NR-13M-0		OU3-0-SO-NR-14M-0		OU3-0-SO-NR-14P-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	11/11/2014		9/30/2015		10/1/2015		10/1/2015		9/21/2015		9/18/2015		9/18/2015		9/18/2015		9/21/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	30300		23200		46700		26100		26700		33300		7510		7060		26400	
--	Antimony	39.7		294		6.75		30		2290		12		600		465		38.8	
4.0	Arsenic	**41.1**		**246**		**15.7**		**55.2**		**846**		**19**		**568**		**384**		**33.7**	
--	Barium	191		245		369		364		320		393		149		192		175	
--	Beryllium	0.00299	ND	0.00233	ND	0.002515	ND	0.00261	ND	0.002875	ND	0.003315	ND	0.00276	ND	0.00252	ND	0.00298	ND
192	Cadmium	32.3		37.6		2.18		5.83		49.7		4.51		118		51.8		30.7	
--	Calcium	24500		19300		15100		21900		2580		10800		38400		26900		7930	
--	Chromium	60.2		55.7		47		66.6		14.8		43.3		72.8		40.5		29.1	
--	Cobalt	7.95		11.5		14.3		9.02		5.11		7.55		5.63		5.99		7.2	
--	Copper	144		505		26.3		93.3		2200		44.2		950		766		86	
--	Iron	21600		34800		32200		26000		11100		25700		21200		22100		19100	
1,331	Lead	1120		7060		184		837		22200		141		15800		7920		593	
--	Magnesium	8770		8870		16800		5050		1380		7940		10100		8100		5790	
--	Manganese	1360		2200		1590		1270		874		252		2750		1560		448	
57.0	Mercury	1.48		15.9		0.344		2.64		**676**		0.274		17.3		26.9		0.999	
--	Nickel	29.8		20.6		26.1		20.6		25.2		23.1		1.015	ND	0.925	ND	1.095	ND
--	Potassium	6520		5080		16800		6990		1800		7210		2310		1850		7460	
--	Selenium	0.274	ND	8.14		0.2305	ND	0.239	ND	0.263	ND	0.3035	ND	0.2525	ND	10.3		0.273	ND
4.0E+07	Silver	9.2		47.2		0.00945	ND	5.18		230		0.01245	ND	74.2		42		4.25	
--	Sodium	912		276		484		612		2600		934		301		329		586	
--	Thallium	0.00254	ND	3.56		0.002135	ND	0.002215	ND	0.00244	ND	0.00281	ND	5.54		3.75		0.00253	ND
--	Vanadium	51.5		67.1		76.1		53		30.7		50		14.7		13.2		37.6	
--	Zinc	5060		8100		339		967		14300		788		22100		12800		4290	
--	Phosphate, Total (as P)	3620		1740		1000		5540		909		859		1910		1740		650	

Table F-4f(3). (cont.)

	Sample ID	OU3-0-SO-NR-15M-0		OU3-0-SO-NR-15P-0		OU3-0-SO-NR-3F-0		OU3-0-SO-NR-7I-0		OU3-0-SO-NR-9J-0		OU3-0-SO-WR-1B-0		OU3-0-SO-WR-1F-0		OU3-0-SO-WR-2B-0		OU3-0-SO-WR-2F-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/17/2015		9/21/2015		9/22/2015		9/21/2015		9/21/2015		8/4/2015		7/31/2015		8/4/2015		7/31/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	9180		5780		32900		33300		6170		4670		7670		6090		13100	
--	Antimony	805		343		106		26.6		271		172		253		328		308	
4.0	Arsenic	**701**		**307**		**96**		**26.6**		**297**		**189**		**287**		**340**		**264**	
--	Barium	174		160		282		365		259		155		227		237		186	
--	Beryllium	0.00236	ND	0.002705	ND	0	ND	0.00285	ND	0.00296	ND	0.00258	ND	0.00296	ND	0.002325	ND	0.003325	ND
192	Cadmium	100		40.3		31		9.75		76.4		72.6		78.7		97.4		92.1	
--	Calcium	33000		27000		10100		10500		43900		107000		44900		50700		104000	
--	Chromium	34.5		23.2		45		45.3		30.1		16.2		28.3		23.5		33.9	
--	Cobalt	6.38		7.99		8		10		52.4		5.56		8.36		11.8		8.47	
--	Copper	1210		476		205		70.2		390		227		398		474		586	
--	Iron	20300		32900		25800		25200		122000		22300		40100		28800		19200	
1,331	Lead	16300		7000		3060		597		6630		3470		5550		6370		5750	
--	Magnesium	10300		8770		7880		9130		8600		10700		14100		10900		11400	
--	Manganese	2630		1450		1070		380		1600		1710		2490		2690		1230	
57.0	Mercury	27.6		8.88		17		3.11		11.1		2.24		3.93		5.75		13.3	
--	Nickel	0.865	ND	0.995	ND	1	ND	21.5		1.09	ND	0.95	ND	1.085	ND	20.9		1.22	ND
--	Potassium	2690		1710		8290		8010		1530		1510		2780		1820		4450	
--	Selenium	10.2		13.4		0	ND	0.261	ND	30.9		8.9		16		13.3		0.3045	ND
4.0E+07	Silver	96		29.6		11		2.62		39		16.1		29.1		28.3		34	
--	Sodium	382		213		1190		1380		258		219		181		388		5960	
--	Thallium	5.13		3.75		0	ND	0.00242	ND	0.002515	ND	48.1		15.2		20.6		31.8	
--	Vanadium	20.4		5.91		47		45.8		0.085	ND	6.41		5.45		9.62		19.6	
--	Zinc	20900		10100		5240		975		12400		15200		14600		34700		26000	
--	Phosphate, Total (as P)	1560		1310		942		1970		2700		1520		1550		1460		971	

Table F-4f(3). (cont.)

	Sample ID	OU3-0-SO-WR-5B-0		OU3-0-SO-WR-5F-0		OU3-0-TL-MR2	
	Depth	0		0		0001	
				Dups ave			
RME low	Operable Unit	OU3		OU3		OU3	
intensity visitor	Sample date	8/4/2015		7/31/2015		3/2/2015	
(mg/kg)	Habitat	Floodplain		Floodplain		Floodplain	
--	Aluminum	9240		4520		14000	
--	Antimony	207		192		519	
4.0	Arsenic	**191**		**418**		**442**	
--	Barium	180		54.85		143	
--	Beryllium	0.00288	ND	0.00254	ND	0.002525	ND
192	Cadmium	123		88.85		58.9	
--	Calcium	142000		49450		40700	
--	Chromium	21.8		28.8		33.9	
--	Cobalt	9.87		3.65		6.57	
--	Copper	345		354.5		823	
--	Iron	15700		16500		18000	
1,331	Lead	5040		3625		11100	
--	Magnesium	9180		17750		6040	
--	Manganese	1340		2345		2070	
57.0	Mercury	5.88		2.8		22.7	
--	Nickel	1.055	ND	0.9325	ND	0.925	ND
--	Potassium	2580		1525		3140	
--	Selenium	0.2635	ND	0.2325	ND	0.2315	ND
4.0E+07	Silver	25.3		22		54.7	
--	Sodium	1180		252.5		264	
--	Thallium	14.5		8.98		0.00268	ND
--	Vanadium	16.8		6.44		34.6	
--	Zinc	26500		17950		13700	
--	Phosphate, Total (as P)	1220		1305		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
RBC = risk-based concentration
RME = reasonable maximum exposure
SO = Soil
TL = Tailings
WR = OU3 P.C. West Reach

Table F-4f(4). Screening results for OU3 Upland soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME low intensity visitor

	Sample ID				OU3-0-SO-ER-11D-0		OU3-0-SO-ER-11S-0		OU3-0-SO-ER-4B-0		OU3-0-SO-ER-4Q-0		OU3-0-SO-ER-6A-0		OU3-0-SO-ER-7P-0		OU3-0-SO-ER-8A-0	
	Depth				0		0		0		0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date				9/14/2015		9/11/2015		9/14/2015		8/5/2015		9/14/2015		9/10/2015		9/14/2015	
	Habitat	**N**	**count of NDs**	**% detected**	Upland		Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	47	0	100%	35000		33700		31700		26600		30400		30100		26800	
--	Antimony	47	5	89%	39.7		7.7		62.8		20.4		4.2		116		8.71	
4.0	Arsenic	47	0	100%	**42.3**		**16.3**		**80.5**		**41.2**		**10.9**		**103**		**11.1**	
--	Barium	47	0	100%	225		189		226		344		198		228		167	
--	Beryllium	47	46	2%	0.00246	ND	0.002575	ND	0.00259	ND	0.002435	ND	0.00224	ND	0.002555	ND	0.002675	ND
192	Cadmium	47	1	98%	8.79		1.77		10.7		5.15		2.26		13.6		4.2	
--	Calcium	47	0	100%	9740		7040		7910		6680		6550		7540		26300	
--	Chromium	47	0	100%	54.5		34.7		39.1		37.1		29.8		40.5		30.7	
--	Cobalt	47	0	100%	11.1		8.03		8.91		13		9.31		7.98		7.24	
--	Copper	47	1	98%	109		30.7		135		78.6		28.1		193		34.1	
--	Iron	47	0	100%	32800		24800		24300		22800		26900		23200		22300	
1,331	Lead	47	0	100%	1030		91.6		1520		642		67.5		2500		176	
--	Magnesium	47	0	100%	7520		7190		6220		5540		5550		6640		6730	
--	Manganese	47	0	100%	1140		488		894		1180		811		760		429	
57.0	Mercury	47	1	98%	1.51		0.122		0.911		0.405		0.118		2.04		0.34	
--	Nickel	47	22	53%	18.4		0.945	ND	0.95	ND	18.5		0.82	ND	0.94	ND	0.98	ND
--	Potassium	47	0	100%	7910		7160		6890		6460		7410		7900		5660	
--	Selenium	47	47	0%	0.2255	ND	0.236	ND	0.237	ND	0.223	ND	0.205	ND	0.234	ND	0.245	ND
4.0E+07	Silver	47	16	66%	8.19		0.0097	ND	13.7		4.13		0.00845	ND	19.9		1.78	
--	Sodium	47	0	100%	565		330		419		432		508		586		368	
--	Thallium	47	46	2%	6.48		0.002185	ND	0.0022	ND	0.002065	ND	0.0019	ND	0.00217	ND	0.00227	ND
--	Vanadium	47	0	100%	63.7		58.7		59.6		55.4		52.6		46		52.9	
--	Zinc	47	0	100%	1870		166		1540		661		286		2270		659	
--	Phosphate, Total (as P)	47	0	100%	892		517		579		565		596		973		711	

Table F-4f(4). (cont.)

	Sample ID	OU3-0-SO-FT-4E-0		OU3-0-SO-FT-5E-0		OU3-0-SO-MRL-14G-0		OU3-0-SO-MRL-14H-0		OU3-0-SO-MRL-14I-0		OU3-0-SO-MRL-14J-0		OU3-0-SO-MRL-15G-0		OU3-0-SO-MRL-15H-0		OU3-0-SO-MRL-15I-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/25/2015		9/25/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
	Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	32500		32000		32500		31300		36000		28000		30000		35000		33200	
--	Antimony	13.1		13.5		21.7		9.51		40.7		5.48		3.9		7.87		51.5	
4.0	Arsenic	**20**		**19.2**		**24.2**		**24.5**		**43.4**		**16.4**		**12.7**		**21.9**		**62**	
--	Barium	327		219		200		220		195		278		204		238		237	
--	Beryllium	0.00306	ND	0.00274	ND	0.00284	ND	0.00273	ND	0.00335	ND	0.00261	ND	0.002805	ND	0.00256	ND	0.00316	ND
192	Cadmium	3.26		9.86		5.44		3.3		8.24		1.88		1.64		3.51		9.64	
--	Calcium	8590		6040		9880		8790		43800		5820		7350		8170		9420	
--	Chromium	41.6		33.9		39.6		39.1		72.5		36		69.9		39.7		45	
--	Cobalt	7.8		8.52		7.44		9.4		10.1		11.8		7.73		9.1		12.4	
--	Copper	59.9		55.1		66.5		44.2		116		36.6		31.8		41.9		126	
--	Iron	22700		24100		24300		24000		24800		24400		22300		25400		23800	
1,331	Lead	375		288		459		213		1290		166		83.1		146		1210	
--	Magnesium	7170		5690		6940		6840		9380		4950		6050		6560		6830	
--	Manganese	315		558		410		484		759		991		252		706		1960	
57.0	Mercury	2.03		1.54		0.651		0.352		2.49		0.154		0.154		0.291		1.81	
--	Nickel	1.125	ND	1.005	ND	1.045	ND	18.9		33.6		18.2		29.9		19		22.9	
--	Potassium	8010		8070		8240		7250		7600		6950		7240		8320		7260	
--	Selenium	0.28	ND	0.251	ND	0.26	ND	0.25	ND	0.307	ND	0.239	ND	0.257	ND	0.2345	ND	0.2895	ND
4.0E+07	Silver	2.14		2.19		4.44		1.73		11.3		0.0098	ND	0.01055	ND	1.33		9.07	
--	Sodium	445		347		376		352		434		390		312		406		591	
--	Thallium	0.002595	ND	0.002325	ND	0.00241	ND	0.002315	ND	0.002845	ND	0.002215	ND	0.00238	ND	0.002175	ND	0.00268	ND
--	Vanadium	61.7		57.6		57.8		55.1		65.7		59.1		53.6		60.8		65.3	
--	Zinc	307		589		1120		522		2170		233		203		426		1660	
--	Phosphate, Total (as P)	1240		1190		1200		1090		843		880		1130		770		874	

Table F-4f(4). (cont.)

	Sample ID	OU3-0-SO-MRL-15J-0		OU3-0-SO-MRL-15K-0		OU3-0-SO-MRL-16G-0		OU3-0-SO-MRL-16I-0		OU3-0-SO-MRL-16J-0		OU3-0-SO-MRL-16K-0		OU3-0-SO-MRL-17G-0		OU3-0-SO-MRL-17H-0		OU3-0-SO-MRL-18G-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME low	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
intensity visitor	Sample date	9/29/2015		9/29/2015		9/28/2015		9/28/2015		9/28/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
(mg/kg)	Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	40800		29000		33700		36000		35500		38900		33000		35400		34500	
--	Antimony	244		0.165	ND	12.9		37.7		16.8		77.3		4.09		4.12		4.1	
4.0	Arsenic	**223**		**11**		**18.8**		**41.8**		**25.1**		**75.1**		**17.1**		**18**		**19.3**	
--	Barium	197		286		216		197		241		335		201		267		332	
--	Beryllium	0.003405	ND	0.002705	ND	0.0027	ND	0.002825	ND	0.0027	ND	0.002985	ND	0.002775	ND	0.0027	ND	0.00265	ND
192	Cadmium	27.5		1.42		2.33		6.03		4.32		12.2		2.23		1.63		1.82	
--	Calcium	13900		5900		8400		7790		7500		18100		10700		6820		8060	
--	Chromium	57.7		46.2		34.2		39.7		41		42.9		33.6		33.9		42.9	
--	Cobalt	8.14		11.9		9.83		8.31		8.48		12.3		9.42		12.6		11.3	
--	Copper	522		34.4		48.9		94.9		54		165		34		34.4		45.9	
--	Iron	30100		24900		23700		24900		27400		27400		24700		28700		28300	
1,331	Lead	6640		94.3		209		1010		256		1710		83.8		83.9		109	
--	Magnesium	10800		5210		6290		6940		6250		8370		6200		5760		7010	
--	Manganese	684		1020		657		424		430		1550		556		921		1090	
57.0	Mercury	11.3		0.0952		0.235		1.03		0.373		3.2		0.141		0.122		0.231	
--	Nickel	1.25	ND	23.4		18.4		19.1		19.3		21.6		1.02	ND	21.7		23	
--	Potassium	9330		8090		8060		8270		7440		8540		7140		6890		8940	
--	Selenium	0.312	ND	0.2475	ND	0.2475	ND	0.259	ND	0.247	ND	0.2735	ND	0.254	ND	0.247	ND	0.2425	ND
4.0E+07	Silver	54.8		0.0102	ND	1.6		7.26		2.24		15		0.01045	ND	0.01015	ND	0.00995	ND
--	Sodium	571		527		353		339		488		460		337		271		483	
--	Thallium	0.00289	ND	0.002295	ND	0.00229	ND	0.0024	ND	0.00229	ND	0.002535	ND	0.002355	ND	0.00229	ND	0.00225	ND
--	Vanadium	76.7		58.5		47.3		52.4		61.7		77.4		67.5		71.9		65.6	
--	Zinc	7800		148		407		1330		622		2610		341		186		245	
--	Phosphate, Total (as P)	1520		975		1740		816		567		1080		1020		1090		1450	

Table F-4f(4). (cont.)

	Sample ID	OU3-0-SO-MRL-19G-0		OU3-0-SO-MRU-10B-0		OU3-0-SO-MRU-12B-0		OU3-0-SO-MRU-12E-0		OU3-0-SO-MRU-13B-0		OU3-0-SO-MRU-1B-0		OU3-0-SO-MRU-3A-0		OU3-0-SO-MRU-3B-0		OU3-0-SO-MRU-4A-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/29/2015		9/30/2015		9/30/2015		10/1/2015		9/30/2015		11/10/2014		11/10/2014		11/10/2014		11/10/2014	
	Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	40200		27100		26600		28600		37600		18300		28100		24200		30000	
--	Antimony	0.16	ND	12.9		22.1		6.68		24		37.3		29		112		8.16	
4.0	Arsenic	**19.9**		**22.6**		**39.3**		**22**		**37.5**		**42**		**33.9**		**98.7**		**16.8**	
--	Barium	306		331		318		289		460		200		261		302		253	
--	Beryllium	0.002615	ND	0.002715	ND	0.00294	ND	0.003025	ND	0.00283	ND	0.003125	ND	0.003235	ND	0.003105	ND	0.003115	ND
192	Cadmium	1.8		4.01		11		2.95		4.53		10.9		6.67		17.4		2.94	
--	Calcium	6760		6630		15100		12000		5630		10700		15200		13100		21400	
--	Chromium	40.1		32.6		45.7		131		30.8		72.1		91		73.7		74.5	
--	Cobalt	14.2		13.3		8.71		9.56		11		6.9		8.54		10.6		10.8	
--	Copper	34.8		60		294		39.5		62		89.3		97.3		210		76.1	
--	Iron	29100		27500		36400		22300		28600		15800		21100		20600		26300	
1,331	Lead	83.2		247		925		191		702		1170		914		3040		213	
--	Magnesium	6690		4520		6120		8150		4480		3480		5630		4620		6020	
--	Manganese	1310		838		662		1230		1070		788		1090		1850		1590	
57.0	Mercury	0.0913		0.712		0.709		0.211		1.33		0.712		1.15		0.526		0.306	
--	Nickel	22.2		19.8		1.08	ND	26.8		1.04	ND	1.15	ND	1.19	ND	22.8		23.9	
--	Potassium	9550		6600		6550		8800		8580		5060		8660		6640		8930	
--	Selenium	0.2395	ND	0.2485	ND	0.2695	ND	0.277	ND	0.2595	ND	0.2865	ND	0.2965	ND	0.2845	ND	0.2855	ND
4.0E+07	Silver	0.00985	ND	2.52		5.11		0.0114	ND	2.96		6.53		6.93		13.9		0.0117	ND
--	Sodium	388		294		2310		385		224		352		452		416		424	
--	Thallium	0.00222	ND	0.002305	ND	0.002495	ND	0.002565	ND	0.0024	ND	0.002655	ND	0.002745	ND	0.002635	ND	0.002645	ND
--	Vanadium	69.6		68.3		46.5		50		62.8		37.9		51.4		49.3		55.1	
--	Zinc	192		861		1940		328		993		1380		994		2260		424	
--	Phosphate, Total (as P)	1030		1240		625		3340		1100		4020		5460		4170		68400	

Table F-4f(4). (cont.)

	Sample ID	OU3-0-SO-MRU-4B-0		OU3-0-SO-MRU-5B-0		OU3-0-SO-MRU-6A-0		OU3-0-SO-MRU-6B-0		OU3-0-SO-MRU-6D-0		OU3-0-SO-MRU-7B-0		OU3-0-SO-MRU-8B-0		OU3-0-SO-MRU-8D-0		OU3-0-SO-MRU-9B-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	11/10/2014		11/11/2014		11/11/2014		11/11/2014		11/12/2014		9/30/2015		9/30/2015		10/1/2015		9/30/2015	
	Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	17100		12700		20900		14900		22100		17700		25400		35400		29100	
--	Antimony	61.7		23.4		14.3		0.2435	ND	16.7		28.5		213		8.23		21.5	
4.0	Arsenic	**42.8**		**26.6**		**22**		**5.55**		**24.3**		**31.7**		**244**		**18.3**		**34.3**	
--	Barium	228		181		256		164		207		154		269		228		221	
--	Beryllium	0.00314	ND	2.28		0.003235	ND	0.003985	ND	0.00284	ND	0.00243	ND	0.003255	ND	0.003265	ND	0.00262	ND
192	Cadmium	14.1		9.99		3.47		0.0113	ND	7.88		5.59		41.6		2.68		5.05	
--	Calcium	17300		13900		27600		16300		11200		64300		20100		13500		5800	
--	Chromium	40.1		17.6		67.7		28.8		29.4		24.3		69.4		43.7		41	
--	Cobalt	6.11		3.56		7.88		5.05		9.16		5.87		14.8		14.4		15.7	
--	Copper	152		74.4		37		1.025	ND	48		64.1		473		35.9		51.8	
--	Iron	14100		11600		18800		12100		19400		16600		33200		30700		32500	
1,331	Lead	1600		744		371		21.4		511		906		6610		217		495	
--	Magnesium	4010		2750		6710		7610		8320		5550		11700		11100		6200	
--	Manganese	984		269		956		354		1480		2810		4600		1060		965	
57.0	Mercury	2.54		0.783		0.606		0.00175	ND	0.815		0.993		17.7		0.284		1.02	
--	Nickel	1.155	ND	1.235	ND	1.185	ND	1.465	ND	1.045	ND	0.895	ND	29.2		24.7		23.4	
--	Potassium	5740		2190		5940		3360		7360		4750		5830		5010		5070	
--	Selenium	0.288	ND	0.308	ND	0.296	ND	0.365	ND	0.2605	ND	0.2225	ND	0.298	ND	0.299	ND	0.24	ND
4.0E+07	Silver	6.9		2.92		0.01215	ND	0.015	ND	2.78		4.42		50.2		0.0123	ND	3.15	
--	Sodium	330		697		425		212		242		295		368		747		238	
--	Thallium	0.002665	ND	0.00285	ND	0.002745	ND	0.00338	ND	0.00241	ND	0.002065	ND	0.00276	ND	0.00277	ND	0.002225	ND
--	Vanadium	33.6		20.7		43.5		30.9		49		41		78.6		68.2		79.6	
--	Zinc	1150		1610		468		67.4		1130		908		9290		402		971	
--	Phosphate, Total (as P)	1900		1200		2680		436		1010		2230		1710		1240		1290	

Table F-4f(4). (cont.)

	Sample ID	OU3-0-SO-NR-12Q-0		OU3-0-SO-NR-2C-0		OU3-0-SO-NR-2F-0		OU3-0-SO-NR-4J-0	
	Depth	0		0		0		0	
RME low intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3	
	Sample date	10/5/2015		9/22/2015		9/22/2015		9/22/2015	
	Habitat	Upland		Upland		Upland		Upland	
--	Aluminum	17300		20900		24400		30500	
--	Antimony	0.164	ND	7.28		7.25		0.1445	ND
4.0	Arsenic	**8.36**		**10.9**		**13.9**		**47.2**	
--	Barium	105		348		241		234	
--	Beryllium	0.002685	ND	0.002525	ND	0.0025	ND	0.00237	ND
192	Cadmium	0.833		3.07		2.67		1.18	
--	Calcium	2700		8660		8800		7330	
--	Chromium	20.2		32.2		32.3		42.4	
--	Cobalt	6.05		10.9		8.13		9.73	
--	Copper	17.1		43		34.7		19.5	
--	Iron	13100		25200		19700		24500	
1,331	Lead	42.4		251		233		77.4	
--	Magnesium	3110		5270		5850		7550	
--	Manganese	382		706		472		318	
57.0	Mercury	0.162		0.263		0.322		0.0772	
--	Nickel	0.985	ND	17.3		0.92	ND	17.9	
--	Potassium	4800		5050		5740		7030	
--	Selenium	0.246	ND	0.2315	ND	0.229	ND	0.217	ND
4.0E+07	Silver	0.0101	ND	1.57		1.37		0.0089	ND
--	Sodium	293		1670		459		526	
--	Thallium	0.00228	ND	0.002145	ND	0.00212	ND	0.00201	ND
--	Vanadium	33.6		60.6		45.1		83.8	
--	Zinc	60.1		333		348		104	
--	Phosphate, Total (as P)	291		1420		983		1060	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
MRU = OU3 Middle Reach Upper
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
RBC = risk-based concentration
RME = reasonable maximum exposure
SO = Soil
WR = OU3 P.C. West Reach

Table F-4g(1). Screening results for OU2 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

RME high intensity visitor (mg/kg)	Sample ID				OU2-0-SO-10L-0		OU2-0-SO-12I-0		OU2-0-SO-12L-0		OU2-0-SO-15L-0		OU2-0-SO-15N-0		OU2-0-SO-17L-0		OU2-0-SO-17N-0	
	Depth				0		0		0		0		0		0		0	
	Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date				9/21/2015		9/17/2015		9/21/2015		9/17/2015		9/16/2015		9/17/2015		9/16/2015	
	Habitat	**N**	**count of NDs**	**% detected**	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	33	0	100%	27400		18200		7900		3350		6830		30200		3580	
--	Antimony	33	1	97%	16.7		1550		874		847		304		11.4		413	
6.0	Arsenic	33	0	100%	**10.5**		**1350**		**649**		**757**		**258**		**23.8**		**406**	
--	Barium	33	0	100%	195		227		185		63.8		236		319		99.4	
--	Beryllium	33	33	0%	0.00302	ND	0.00249	ND	0.00264	ND	0.00437	ND	0.002865	ND	0.002705	ND	0.0026	ND
255	Cadmium	33	0	100%	15.7		206		79.6		175		37.4		4.08		69	
--	Calcium	33	0	100%	6830		39100		25000		74700		42000		7300		43500	
--	Chromium	33	2	94%	34.1		123		30		1.785	ND	34.5		39.3		17.7	
--	Cobalt	33	0	100%	5.77		3.97		2.69		7.29		6.91		11.8		2.2	
--	Copper	33	0	100%	34.9		2450		1670		252		385		46.2		579	
--	Iron	33	0	100%	20500		24000		15300		11200		31600		34800		11100	
1,331	Lead	33	1	97%	15.2	ND	34400		16900		1830		7680		272		7900	
--	Magnesium	33	0	100%	6220		17700		8680		3610		14300		6140		12000	
--	Manganese	33	0	100%	183		3650		1730		350		1670		1070		2100	
77.0	Mercury	33	0	100%	0.202		31.3		26		1.88		9.38		0.424		8.23	
--	Nickel	33	27	18%	1.11	ND	0.915	ND	0.97	ND	1.605	ND	1.05	ND	18.6		0.955	ND
--	Potassium	33	0	100%	7520		6500		2350		942		2280		6150		1270	
--	Selenium	33	19	42%	0.2765	ND	20.5		10.2		0.4	ND	10.8		0.248	ND	0.238	ND
5.4E+07	Silver	33	5	85%	0.01135	ND	236		120		7.02		41.3		1.6		55.2	
--	Sodium	33	0	100%	1020		473		399		1350		285		944		162	
--	Thallium	33	14	58%	0.00256	ND	11.9		0.00224	ND	24.9		3.98		0.002295	ND	5.33	
--	Vanadium	33	1	97%	40.3		41.8		18.9		5.9		18.8		40.6		11.4	
--	Zinc	33	0	100%	1370		31300		20300		65600		11100		427		17200	
--	Phosphate, Total (as P)	33	0	100%	905		3710		1460		419		2050		863		1660	

Table F-4g(1). (cont.)

RME high intensity visitor (mg/kg)	Sample ID	OU2-0-SO-26V-0		OU2-0-SO-30R-0		OU2-0-SO-30Y-0		OU2-0-SO-34G-0		OU2-0-SO-35V-0		OU2-0-SO-37V-0		OU2-0-SO-39V-0		OU2-0-SO-43T-0		OU2-0-SO-44T-0	
	Depth	0		0		0		0		0		0		0		0		0	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	9/16/2015		9/15/2015		9/16/2015		8/5/2015		8/5/2015		8/5/2015		8/4/2015		8/4/2015		9/14/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	3370		5600		4610		7530		12000		20000		12800		2940		6960	
--	Antimony	132		489		234		63		45.2		24.8		320		3.78		353	
6.0	Arsenic	**217**		**335**		**335**		**110**		**206**		**48.7**		**306**		4.23		**413**	
--	Barium	161		119		184		159		196		269		336		77.7		248	
--	Beryllium	0.00264	ND	0.00246	ND	0.002595	ND	0.00263	ND	0.00344	ND	0.0025	ND	0.00244	ND	0.002495	ND	0	ND
255	Cadmium	27.3		54		93.1		63.6		17.5		5.52		55.3		3		127	
--	Calcium	38100		27500		57000		41400		24200		27800		15000		117000		48800	
--	Chromium	20.6		26		25.9		10.9		15		24		22.5		1.02	ND	28	
--	Cobalt	2.5		2.2		8.04		12.2		14.5		8.61		27.9		1.88		9	
--	Copper	125		873		337		126		89.7		76.7		411		31.5		806	
--	Iron	16100		10400		46500		11900		26100		20100		20900		3340		39300	
1,331	Lead	2810		13900		6410		605		1110		616		9200		51.6		10600	
--	Magnesium	14900		7660		18500		3480		4670		6790		4000		4650		13300	
--	Manganese	1700		1420		2460		1770		2420		266		3850		2820		2050	
77.0	Mercury	1.65		17.7		4.82		0.642		4.79		1.8		23.9		0.298		14	
--	Nickel	0.97	ND	0.905	ND	0.955	ND	0.965	ND	1.265	ND	0.92	ND	0.895	ND	0.915	ND	1	ND
--	Potassium	1440		1560		2070		1900		2910		5070		3630		1540		2240	
--	Selenium	0.2415	ND	0.2255	ND	15.1		0.2405	ND	0.315	ND	0.229	ND	8.57		0.2285	ND	10	
5.4E+07	Silver	17		60.6		34.2		5.58		3.92		3.48		24.7		0.0094	ND	50	
--	Sodium	127		280		278		202		783		587		278		788		400	
--	Thallium	0.00224	ND	3.33		3.96		7.29		0.00292	ND	0.002125	ND	0.00207	ND	0.002115	ND	7	
--	Vanadium	10.4		11.6		15.2		14.1		17.4		31.8		25.8		5.56		9	
--	Zinc	4430		17200		15400		7970		2680		995		6590		289		31800	
--	Phosphate, Total (as P)	1480		1390		1330		1040		913		721		1320		844		1740	

Table F-4g(1). (cont.)

RME high intensity visitor (mg/kg)	Sample ID	OU2-0-SO-44V-0		OU2-0-SO-44W-0		OU2-0-SO-45T-0		OU2-0-SO-45V-0		OU2-0-SO-46V-0		OU2-0-SO-47T-0		OU2-0-SO-48S-0		OU2-0-SO-48T-0		OU2-0-SO-4A-0	
	Depth	0		0		0		0		0		0		0		0		0	
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	7/31/2015		7/31/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		7/30/2015		9/24/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	20500		10200		11300		6470		5310		9190		7330		6640		31200	
--	Antimony	570		344		513		224		332		269		267		5490		12.4	
6.0	Arsenic	**550**		**442**		**589**		**241**		**743**		**360**		**314**		**7010**		**22.2**	
--	Barium	298		224		330		171		160		212		196		575		458	
--	Beryllium	0.003105	ND	0.00328	ND	0.0022	ND	0.002365	ND	0	ND	0	ND	0.00284	ND	0.00358	ND	0.00294	ND
255	Cadmium	86.5		180		105		65.4		62		118		101		66.1		3.68	
--	Calcium	41800		44700		69600		50200		40400		25600		52900		14900		6170	
--	Chromium	65.4		30.3		49.5		33.3		26		29		27.5		20		37.7	
--	Cobalt	13.5		21.4		13.5		4.99		7		9		9.9		11.3		11.5	
--	Copper	1080		650		845		437		278		494		387		396		48.1	
--	Iron	33700		25800		37500		21300		27500		22700		28800		130000		26700	
1,331	Lead	9720		4800		11400		5490		4220		5600		5920		3810		271	
--	Magnesium	14600		10300		15800		16200		13900		7060		13700		3440		5670	
--	Manganese	2750		3200		2280		2310		2300		1010		1950		1680		1070	
77.0	Mercury	26.5		9.27		10.8		3.27		3		13		3.61		1.57		0.643	
--	Nickel	22.6		23.5		0.81	ND	0.87	ND	1	ND	2	ND	1.04	ND	1.315	ND	20.1	
--	Potassium	6030		3250		4330		2830		2210		2410		2740		2310		7710	
--	Selenium	14.3		0.3005	ND	15.6		8.2		8		20		9.49		0.3275	ND	0.2695	ND
5.4E+07	Silver	72.3		41.3		81.3		26.8		22		27		28.2		21.1		1.63	
--	Sodium	387		3430		204		115		119		391		376		335		487	
--	Thallium	21.6		45.7		14.1		5.9		4		23		10.3		35.4		0.002495	ND
--	Vanadium	30.7		14.5		14.3		8.5		3		13		9.21		0.0825	ND	57	
--	Zinc	26600		29800		18000		14600		13200		19400		27900		22200		515	
--	Phosphate, Total (as P)	2550		261		1490		1060		1670		3480		1240		519		1020	

Table F-4g(1). (cont.)

RME high intensity visitor (mg/kg)	Sample ID	OU2-0-SO-50P-0		OU2-0-SO-50Q-0		OU2-0-SO-50T-0		OU2-0-SO-7F-0		OU2-0-SO-8G-0		OU2-0-SO-8I-0		OU2-0-SO-OP1-0		OU2-0-SO-OP2-0	
	Depth	0		0		0		0		0		0		0		0	
		Dups ave															
	Operable Unit	OU2		OU2		OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date	7/29/2015		7/29/2015		7/30/2015		9/17/2015		9/17/2015		9/21/2015		7/29/2015		9/17/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	30600		7320		35800		8860		9090		5200		11200		27200	
--	Antimony	6.6		276		0.1895	ND	826		1270		257		244		8.27	
6.0	Arsenic	**11.9**		**247**		**11.3**		**1020**		**1060**		**292**		**268**		**16.8**	
--	Barium	312		166		262		158		174		57.4		269		450	
--	Beryllium	0.0030675	ND	0.00306	ND	0.0031	ND	0.002665	ND	0.002455	ND	0.002505	ND	0.00329	ND	0.002765	ND
255	Cadmium	2.395		44.8		1.3		160		119		44.8		42.2		2	
--	Calcium	7775		50200		6300		41900		30800		42900		17300		8500	
--	Chromium	34.4		28.1		40.4		50.2		40.5		28.4		23.5		31.4	
--	Cobalt	10.8		5.92		11.4		3.41		6.23		2.42		3.57		11.4	
--	Copper	40.8		352		22.8		1010		2040		358		550		58.1	
--	Iron	26200		17900		27300		19600		23300		11200		19200		25100	
1,331	Lead	160.5		4730		75.1		27400		28900		6260		9960		176	
--	Magnesium	6410		11900		6910		14200		9460		12200		5970		6390	
--	Manganese	765.5		1730		667		2740		4220		2110		832		641	
77.0	Mercury	0.228		10.7		0.0463		16.3		**79.1**		5.64		7.22		0.372	
--	Nickel	1.1275	ND	1.125	ND	20.9		0.98	ND	0.9	ND	0.92	ND	24.4		1.015	ND
--	Potassium	6555		2430		6480		3590		2540		1820		3250		6060	
--	Selenium	0.281	ND	0.2805	ND	0.284	ND	9.53		10.8		0.2295	ND	0.301	ND	0.253	ND
5.4E+07	Silver	0.01155	ND	33.8		0.0117	ND	169		145		32.2		35.8		0.0104	ND
--	Sodium	710.5		242		520		327		491		176		578		794	
--	Thallium	0.002605	ND	4.6		0.00263	ND	6.25		3.34		0.002125	ND	0.00279	ND	0.002345	ND
--	Vanadium	50.3		12.1		60		21.6		24.2		11		122		39.6	
--	Zinc	274		10400		122		27900		29700		12100		8250		272	
--	Phosphate, Total (as P)	1450		1360		1450		5180		1660		1430		1580		883	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
RBC = risk-based concentration
RME = reasonable maximum exposure
SO = Soil

Table F-4g(2). Screening results for OU2 Upland soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

	Sample ID				OU2-0-SO-21D-0		OU2-0-SO-27I-0		OU2-0-SO-29F-0		OU2-0-SO-2A-0		OU2-0-SO-3B-0		OU2-0-SO-4B-0	
	Depth				0		0		0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit				OU2		OU2		OU2		OU2		OU2		OU2	
	Sample date				9/22/2015		9/15/2015		9/15/2015		9/22/2015		9/24/2015		9/24/2015	
	Habitat	**N**	**count of NDs**	**% detected**	Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	6	0	100%	29400		39000		31800		36100		21500		8310	
--	Antimony	6	1	83%	12.3		0.158	ND	5.3		2610		18.1		1290	
6.0	Arsenic	6	0	100%	**23.9**		**11.4**		**14.6**		**760**		**21.9**		**799**	
--	Barium	6	0	100%	289		300		316		289		230		181	
--	Beryllium	6	6	0%	0.002855	ND	0.002585	ND	0.00284	ND	0.002695	ND	0.00258	ND	0.00301	ND
255	Cadmium	6	0	100%	4.39		1.15		2.34		40.7		3.34		**293**	
--	Calcium	6	0	100%	6870		5050		6710		1890		5560		15200	
--	Chromium	6	0	100%	39.6		36.6		44.6		34.2		35.8		29.2	
--	Cobalt	6	0	100%	10.4		11.9		12.9		5.36		10.8		6.17	
--	Copper	6	0	100%	55.5		23.1		40.4		2230		56.2		2310	
--	Iron	6	0	100%	22500		28400		25400		9970		23100		28100	
1,331	Lead	6	0	100%	359		32.7		171		20400		485		32900	
--	Magnesium	6	0	100%	5220		6470		6000		1130		4310		5080	
--	Manganese	6	0	100%	738		1040		1030		1770		945		2580	
77.0	Mercury	6	1	83%	0.367		0.000745	ND	0.11		12.9		0.799		**104**	
--	Nickel	6	4	33%	1.05	ND	19.2		1.04	ND	35.9		0.945	ND	1.105	ND
--	Potassium	6	0	100%	7590		9210		7650		1690		5360		2090	
--	Selenium	6	5	17%	0.2615	ND	0.237	ND	0.26	ND	0.247	ND	0.236	ND	9.6	
5.4E+07	Silver	6	2	67%	2.35		0.00975	ND	0.0107	ND	196		2.1		112	
--	Sodium	6	0	100%	765		450		652		3370		463		765	
--	Thallium	6	6	0%	0.002425	ND	0.002195	ND	0.00241	ND	0.00229	ND	0.00219	ND	0.002555	ND
--	Vanadium	6	0	100%	55.2		59.6		60.7		28.2		50.7		16.6	
--	Zinc	6	0	100%	597		87.6		230		18600		633		65300	
--	Phosphate, Total (as P)	6	0	100%	1250		590		858		865		1280		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ID = Identification
mg/kg = milligrams per kilogram
ND = Non-Detect
OU2 = Richardson Flat Tailings Site Operable Unit 2
RBC = risk-based concentration
RME = reasonable maximum exposure
SO = Soil

Table F-4g(3). Screening results for OU3 Floodplain soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

	Sample ID				OU3-0-SO-ER-10S-0		OU3-0-SO-ER-12R-0		OU3-0-SO-ER-3M-0		OU3-0-SO-ER-5A-0		OU3-0-SO-ER-5G-0		OU3-0-SO-ER-5K-0	
	Depth				0		0		0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit Sample date Habitat	**N**	**count of NDs**	**% detected**	OU3 9/11/2015 Floodplain		OU3 9/14/2015 Floodplain		OU3 8/6/2015 Floodplain		OU3 8/6/2015 Floodplain		OU3 8/6/2015 Floodplain		OU3 9/10/2015 Floodplain	
--	Aluminum	149	0	100%	25100		28100		4290		32800		20100		35600	
--	Antimony	149	4	97%	69.4		16.7		99.7		107		106		124	
6.0	Arsenic	149	0	100%	**57.1**		**19.5**		**364**		**130**		**69.9**		**109**	
--	Barium	149	0	100%	293		204		350		208		164		193	
--	Beryllium	149	68	54%	0.0028	ND	0.002365	ND	0.00292	ND	0.002435	ND	0.002615	ND	0.002515	ND
255	Cadmium	149	0	100%	7.2		2.91		12		11.7		23.8		15	
--	Calcium	149	0	100%	12500		7330		62300		6880		18100		12400	
--	Chromium	149	2	99%	31.9		29.4		1.195	ND	44.3		27.5		43.1	
--	Cobalt	149	0	100%	9.98		8.26		26.7		9.5		6.1		7.62	
--	Copper	149	0	100%	136		40.5		67		245		251		226	
--	Iron	149	0	100%	21900		24100		24600		24000		13400		26300	
1,331	Lead	149	0	100%	1330		244		263		2720		1870		2760	
--	Magnesium	149	0	100%	6200		5440		3020		6110		4950		9370	
--	Manganese	149	0	100%	640		693		15800		843		343		1650	
77.0	Mercury	149	2	99%	1.52		0.253		0.325		1.83		1.28		3.19	
--	Nickel	149	43	71%	1.03	ND	0.87	ND	1.075	ND	17.7		17.9		20.5	
--	Potassium	149	0	100%	5820		6810		1400		7600		4250		8180	
--	Selenium	149	47	68%	0.2565	ND	0.2165	ND	0.2675	ND	0.223	ND	0.2395	ND	0.2305	ND
5.4E+07	Silver	149	12	92%	13.1		2.09		3.26		20.8		12		26.8	
--	Sodium	149	0	100%	757		521		596		402		502		555	
--	Thallium	149	39	74%	0.002375	ND	0.002005	ND	7.3		4.64		6.65		7.01	
--	Vanadium	149	2	99%	51.1		48.7		4.35		52.2		33.3		51.5	
--	Zinc	149	0	100%	760		291		10300		2440		1610		6290	
--	Phosphate, Total (as P)	149	0	100%	703		612		1520		750		734		982	

Table F-4g(3). (cont.)

	Sample ID	OU3-0-SO-ER-7J-0		OU3-0-SO-FT-1B-0		OU3-0-SO-FT-1C-0		OU3-0-SO-FT-2B-0		OU3-0-SO-FT-2C-0		OU3-0-SO-FT-3B-0		OU3-0-SO-FT-3C-0		OU3-0-SO-FT-3D-0		OU3-0-SO-FT-4A-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/10/2015		9/28/2015		9/25/2015		9/28/2015		9/25/2015		10/5/2015		9/25/2015		9/25/2015		9/28/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	4110		30200		13300		22100		5620		21700		4690		38700		15300	
--	Antimony	13.4		53		373		62.3		244		924		253		190		48.9	
6.0	Arsenic	**23.3**		**47.5**		**371**		**41**		**231**		**372**		**207**		**67.1**		**94.4**	
--	Barium	147		244		136		252		61.5		211		83.5		417		411	
--	Beryllium	0.00326	ND	0.003325	ND	0.0023	ND	0.00306	ND	0.002385	ND	0.003105	ND	0.002385	ND	0.00263	ND	0.00635	ND
255	Cadmium	1.66		17.5		161		13.7		151		77.2		135		47.6		11.5	
--	Calcium	176000		11100		54300		9950		81200		8740		81200		7700		27500	
--	Chromium	1.33	ND	37.9		34.2		32.3		31.7		26.1		59.3		41.1		24.5	
--	Cobalt	6.07		11.8		9.01		8.39		15.8		12		11		14.5		16.8	
--	Copper	27.8		131		493		124		430		1230		350		256		118	
--	Iron	10600		26400		35600		22500		63100		20900		46700		26800		26400	
1,331	Lead	128		907		9440		1230		8030		12200		5050		1420		1160	
--	Magnesium	3480		7540		17600		5260		23400		4660		20800		7110		6480	
--	Manganese	5940		1480		3130		862		2390		3000		2150		286		1790	
77.0	Mercury	0.139		14.9		6.94		6.49		1.76		**167**		2.34		40.1		2.74	
--	Nickel	1.195	ND	1.22	ND	0.845	ND	1.125	ND	0.945	ND	1.14	ND	0.875	ND	21.2		2.335	ND
--	Potassium	1430		6880		3720		6180		2550		3690		2270		8550		3440	
--	Selenium	0.2985	ND	0.3045	ND	8.76		0.28	ND	14.3		0.284	ND	10.9		0.241	ND	0.58	ND
5.4E+07	Silver	0.01225	ND	8.3		77.2		7.61		31.8		75.7		28.3		10.8		7.05	
--	Sodium	420		1350		234		448		193		655		137		915		2930	
--	Thallium	0.002765	ND	0.00282	ND	5.42		0.002595	ND	4.58		0.002635	ND	3.56		0.002235	ND	0.0054	ND
--	Vanadium	5.69		55.1		16.8		39.6		1.62		37.9		3.41		62.3		24.1	
--	Zinc	271		1430		30100		1580		25200		11600		21900		1970		1540	
--	Phosphate, Total (as P)	428		1710		1770		1040		2050		1530		1770		1030		1300	

Table F-4g(3). (cont.)

	Sample ID	OU3-0-SO-FT-4B-0		OU3-0-SO-FT-4C-0		OU3-0-SO-FT-5C-0		OU3-0-SO-FT-6B-0		OU3-0-SO-FT-6D-0		OU3-0-SO-MRL-15D-0		OU3-0-SO-MRL-15E-0		OU3-0-SO-MRL-16D-0		OU3-0-SO-MRL-16F-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/25/2015		9/25/2015		9/25/2015		9/24/2015		9/25/2015		9/29/2015		9/29/2015		9/30/2015		9/28/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	9140		4640		5640		52200		23900		34600		27100		40200		19400	
--	Antimony	355		183		373		152		102		4.47		1460		4.27		1800	
6.0	Arsenic	**431**		**155**		**463**		**129**		**34.2**		**16.1**		**1250**		**22.4**		**1130**	
--	Barium	633		80.2		115		347		440		288		206		275		215	
--	Beryllium	0.00306	ND	0.00258	ND	0.00244	ND	0	ND	0.004375	ND	0.002635	ND	0.00411	ND	0.00258	ND	0.00291	ND
255	Cadmium	34		48.8		120		89		18.3		1.51		99		1.96		77.6	
--	Calcium	41600		96700		53200		14300		11200		7520		54000		5290		10600	
--	Chromium	42.7		32.3		32		74		50.8		41.5		143		48.3		25.3	
--	Cobalt	7.13		6.34		15		10		8.1		10.9		3.31		17.6		9.41	
--	Copper	408		263		838		589		224		34		1920		36.8		3140	
--	Iron	42700		18900		60100		33700		18400		25800		23200		29100		27100	
1,331	Lead	7940		4390		9750		6070		2580		113		33000		191		40700	
--	Magnesium	14600		24400		16300		12700		7850		7080		19900		6510		3590	
--	Manganese	1850		2440		2380		796		798		1060		2280		1310		2740	
77.0	Mercury	4.82		2.02		8.57		16		2.47		0.304		33		0.269		**2950**	
--	Nickel	0.98	ND	0.89	ND	0.895	ND	29		1.285	ND	19.9		1.51	ND	24.7		1.07	ND
--	Potassium	3230		2300		2390		10100		6430		9380		9710		9490		3230	
--	Selenium	22.9		0.2365	ND	21.8		12		0.401	ND	0.2415	ND	20.6		0.236	ND	12.3	
5.4E+07	Silver	46		36.5		55.8		46		14.3		0.0099	ND	175		0.0097	ND	18.5	
--	Sodium	265		164		235		558		659		315		390		266		1120	
--	Thallium	7.62		0.00219	ND	7.76		6		0.003715	ND	0.002235	ND	10.1		0.00219	ND	0.00247	ND
--	Vanadium	12.3		7.72		0.07	ND	84		46.3		63.6		67.9		63.4		39.2	
--	Zinc	4900		12800		22300		10000		2780		192		22900		336		26800	
--	Phosphate, Total (as P)	1680		1610		1690		1410		1530		1320		4350		746		2240	

Table F-4g(3). (cont.)

	Sample ID	OU3-0-SO-MRL-16H-0		OU3-0-SO-MRL-18F-0		OU3-0-SO-MRU-10C-0		OU3-0-SO-MRU-11C-0		OU3-0-SO-MRU-12C-0		OU3-0-SO-MRU-13C-0		OU3-0-SO-MRU-1C-0		OU3-0-SO-MRU-1D-0	
	Depth	0		0		0		0		0		0		0		0	
														Dups ave			
RME high	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
intensity visitor	Sample date	9/28/2015		9/29/2015		10/1/2015		10/1/2015		10/1/2015		10/1/2015		11/10/2014		11/12/2014	
(mg/kg)	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	35800		33700		15000		2.08		7270		41100		17160		21100	
--	Antimony	4.33		188		290		663		374		290		165.5		24.3	
6.0	Arsenic	**14.4**		**75.5**		**171**		**793**		**568**		**182**		**192**		**24.1**	
--	Barium	269		292		303		654		68.4		375		291		186	
--	Beryllium	0.002655	ND	0.00381	ND	0.002705	ND	0.003065	ND	0.00242	ND	0.00266	ND	0.0030475	ND	0.00298	ND
255	Cadmium	2.26		91.4		50.5		148		70.4		44.6		59.1		7.1	
--	Calcium	11900		10500		12600		5.43		42600		14400		18450		15000	
--	Chromium	38.3		45.6		18.6		98.6		29.8		76.3		47.15		50.6	
--	Cobalt	9.26		12.4		6.03		3.93		4.11		9.91		14.9		11	
--	Copper	38.9		451		561		854		541		909		334.5		74.7	
--	Iron	25200		26300		19600		4.09		15300		28700		35650		20400	
1,331	Lead	88.2		1790		7060		14000		8950		8930		4005		660	
--	Magnesium	6510		7070		3150		2.51		10400		13700		9690		8400	
--	Manganese	541		763		1360		2790		1950		1510		2570		1140	
77.0	Mercury	0.124		58.7		8.57		16.4		5.28		36.4		2.7535		1.53	
--	Nickel	19.6		1.4	ND	0.99	ND	1.125	ND	0.89	ND	25.5		13.2725		1.095	ND
--	Potassium	8580		7040		2350		0.884		2120		7240		5825		7640	
--	Selenium	0.243	ND	0.349	ND	0.2475	ND	18.9		8.55		10.4		0.27925	ND	0.273	ND
5.4E+07	Silver	0.01	ND	17		26.4		85.6		45.2		77.6		30.55		4.59	
--	Sodium	427		593		559		0.0215		276		671		375		705	
--	Thallium	0.00225	ND	0.003235	ND	0.002295	ND	21.6		8.51		8.31		2.211325		0.00253	ND
--	Vanadium	54.3		54		26.5		0.00277		21.8		72.4		44.15		48.9	
--	Zinc	286		3280		12000		15300		19000		9500		5635		1230	
--	Phosphate, Total (as P)	1430		1340		1030		3090		1530		1470		1990		1720	

Table F-4g(3). (cont.)

	Sample ID	OU3-0-SO-MRU-2B-0		OU3-0-SO-MRU-2C-0		OU3-0-SO-MRU-2D-0		OU3-0-SO-MRU-3C-0		OU3-0-SO-MRU-3D-0		OU3-0-SO-MRU-4C-0		OU3-0-SO-MRU-4D-0		OU3-0-SO-MRU-5C-0		OU3-0-SO-MRU-5D-0	
	Depth	0		0		0		0		0		0		0		0		0	
														Dups ave					
RME high	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
intensity visitor	Sample date	11/10/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/10/2014		11/12/2014		11/11/2014		11/12/2014	
(mg/kg)	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	20900		26800		29000		31600		19600		17000		28450		26200		26300	
--	Antimony	100		40.1		0.1675	ND	24.7		0.19	ND	0.1725	ND	8.1		61.4		13.2	
6.0	Arsenic	**80**		**51.5**		**7.23**		**37.5**		**7.5**		**9.02**		**15.35**		**151**		**19.2**	
--	Barium	225		220		218		328		167		141		257.5		318		258	
--	Beryllium	0.003165	ND	0.00298	ND	0.002745	ND	0.003015	ND	0.00311	ND	0.00282	ND	0.003135	ND	0.003305	ND	0.002925	ND
255	Cadmium	13		31.6		2.4		9.5		3.3		1.21		2.665		65.1		4.88	
--	Calcium	12100		14400		8660		6690		14200		5800		5525		33700		5600	
--	Chromium	62.7		43.8		37.1		36		66.8		37.4		35.45		47.6		38.4	
--	Cobalt	7.04		10.5		15.9		12.3		28.8		5.65		11		21.9		10.9	
--	Copper	160		144		31.4		111		58.9		32.4		35.15		216		46	
--	Iron	18000		21200		30300		28100		22700		13200		25750		27200		22700	
1,331	Lead	2460		1250		42.6		868		68.2		27.7		185		2040		388	
--	Magnesium	4120		7440		6620		6920		8710		3960		6270		10100		7220	
--	Manganese	925		1490		776		879		576		336		913		15600		1170	
77.0	Mercury	3.98		2.77		0.00142	ND	1.01		0.0804		0.00132	ND	0.295		3.88		0.615	
--	Nickel	1.165	ND	1.095	ND	1.01	ND	1.105	ND	24.8		1.035	ND	11.4425		40.4		21.2	
--	Potassium	5640		6010		5430		7930		4380		4120		8775		5640		8920	
--	Selenium	0.29	ND	0.273	ND	0.2515	ND	0.276	ND	0.2845	ND	0.2585	ND	0.28725	ND	0.303	ND	0.268	ND
5.4E+07	Silver	10.4		8.87		0.01035	ND	3.88		0.0117	ND	0.0106	ND	0.011825	ND	16.6		1.91	
--	Sodium	417		477		2190		359		2080		457		385.5		493		277	
--	Thallium	0.002685	ND	0.00253	ND	0.00233	ND	0.00256	ND	0.00264	ND	0.002395	ND	0.0026625	ND	0.002805	ND	0.002485	ND
--	Vanadium	39.8		50.3		83.7		62.3		56.4		33.8		64.35		46.1		61.2	
--	Zinc	1900		2990		166		1250		260		59.7		355.5		12500		708	
--	Phosphate, Total (as P)	3760		1800		927		1260		847		1410		1255		2010		1640	

Table F-4g(3). (cont.)

	Sample ID	OU3-0-SO-MRU-6C-0		OU3-0-SO-MRU-7C-0		OU3-0-SO-MRU-7D-0		OU3-0-SO-MRU-8C-0		OU3-0-SO-NR-11J-0		OU3-0-SO-NR-13L-0		OU3-0-SO-NR-13M-0		OU3-0-SO-NR-14M-0		OU3-0-SO-NR-14P-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	11/11/2014		9/30/2015		10/1/2015		10/1/2015		9/21/2015		9/18/2015		9/18/2015		9/18/2015		9/21/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	30300		23200		46700		26100		26700		33300		7510		7060		26400	
--	Antimony	39.7		294		6.75		30		2290		12		600		465		38.8	
6.0	Arsenic	**41.1**		**246**		**15.7**		**55.2**		**846**		**19**		**568**		**384**		**33.7**	
--	Barium	191		245		369		364		320		393		149		192		175	
--	Beryllium	0.00299	ND	0.00233	ND	0.002515	ND	0.00261	ND	0.002875	ND	0.003315	ND	0.00276	ND	0.00252	ND	0.00298	ND
255	Cadmium	32.3		37.6		2.18		5.83		49.7		4.51		118		51.8		30.7	
--	Calcium	24500		19300		15100		21900		2580		10800		38400		26900		7930	
--	Chromium	60.2		55.7		47		66.6		14.8		43.3		72.8		40.5		29.1	
--	Cobalt	7.95		11.5		14.3		9.02		5.11		7.55		5.63		5.99		7.2	
--	Copper	144		505		26.3		93.3		2200		44.2		950		766		86	
--	Iron	21600		34800		32200		26000		11100		25700		21200		22100		19100	
1,331	Lead	1120		7060		184		837		22200		141		15800		7920		593	
--	Magnesium	8770		8870		16800		5050		1380		7940		10100		8100		5790	
--	Manganese	1360		2200		1590		1270		874		252		2750		1560		448	
77.0	Mercury	1.48		15.9		0.344		2.64		**676**		0.274		17.3		26.9		0.999	
--	Nickel	29.8		20.6		26.1		20.6		25.2		23.1		1.015	ND	0.925	ND	1.095	ND
--	Potassium	6520		5080		16800		6990		1800		7210		2310		1850		7460	
--	Selenium	0.274	ND	8.14		0.2305	ND	0.239	ND	0.263	ND	0.3035	ND	0.2525	ND	10.3		0.273	ND
5.4E+07	Silver	9.2		47.2		0.00945	ND	5.18		230		0.01245	ND	74.2		42		4.25	
--	Sodium	912		276		484		612		2600		934		301		329		586	
--	Thallium	0.00254	ND	3.56		0.002135	ND	0.002215	ND	0.00244	ND	0.00281	ND	5.54		3.75		0.00253	ND
--	Vanadium	51.5		67.1		76.1		53		30.7		50		14.7		13.2		37.6	
--	Zinc	5060		8100		339		967		14300		788		22100		12800		4290	
--	Phosphate, Total (as P)	3620		1740		1000		5540		909		859		1910		1740		650	

Table F-4g(3). (cont.)

	Sample ID	OU3-0-SO-NR-15M-0		OU3-0-SO-NR-15P-0		OU3-0-SO-NR-3F-0		OU3-0-SO-NR-7I-0		OU3-0-SO-NR-9J-0		OU3-0-SO-WR-1B-0		OU3-0-SO-WR-1F-0		OU3-0-SO-WR-2B-0		OU3-0-SO-WR-2F-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/17/2015		9/21/2015		9/22/2015		9/21/2015		9/21/2015		8/4/2015		7/31/2015		8/4/2015		7/31/2015	
	Habitat	Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain		Floodplain	
--	Aluminum	9180		5780		32900		33300		6170		4670		7670		6090		13100	
--	Antimony	805		343		106		26.6		271		172		253		328		308	
6.0	Arsenic	**701**		**307**		**96**		**26.6**		**297**		**189**		**287**		**340**		**264**	
--	Barium	174		160		282		365		259		155		227		237		186	
--	Beryllium	0.00236	ND	0.002705	ND	0	ND	0.00285	ND	0.00296	ND	0.00258	ND	0.00296	ND	0.002325	ND	0.003325	ND
255	Cadmium	100		40.3		31		9.75		76.4		72.6		78.7		97.4		92.1	
--	Calcium	33000		27000		10100		10500		43900		107000		44900		50700		104000	
--	Chromium	34.5		23.2		45		45.3		30.1		16.2		28.3		23.5		33.9	
--	Cobalt	6.38		7.99		8		10		52.4		5.56		8.36		11.8		8.47	
--	Copper	1210		476		205		70.2		390		227		398		474		586	
--	Iron	20300		32900		25800		25200		122000		22300		40100		28800		19200	
1,331	Lead	16300		7000		3060		597		6630		3470		5550		6370		5750	
--	Magnesium	10300		8770		7880		9130		8600		10700		14100		10900		11400	
--	Manganese	2630		1450		1070		380		1600		1710		2490		2690		1230	
77.0	Mercury	27.6		8.88		17		3.11		11.1		2.24		3.93		5.75		13.3	
--	Nickel	0.865	ND	0.995	ND	1	ND	21.5		1.09	ND	0.95	ND	1.085	ND	20.9		1.22	ND
--	Potassium	2690		1710		8290		8010		1530		1510		2780		1820		4450	
--	Selenium	10.2		13.4		0	ND	0.261	ND	30.9		8.9		16		13.3		0.3045	ND
5.4E+07	Silver	96		29.6		11		2.62		39		16.1		29.1		28.3		34	
--	Sodium	382		213		1190		1380		258		219		181		388		5960	
--	Thallium	5.13		3.75		0	ND	0.00242	ND	0.002515	ND	48.1		15.2		20.6		31.8	
--	Vanadium	20.4		5.91		47		45.8		0.085	ND	6.41		5.45		9.62		19.6	
--	Zinc	20900		10100		5240		975		12400		15200		14600		34700		26000	
--	Phosphate, Total (as P)	1560		1310		942		1970		2700		1520		1550		1460		971	

Table F-4g(3). (cont.)

	Sample ID	OU3-0-SO-WR-5B-0		OU3-0-SO-WR-5F-0		OU3-0-TL-MR2	
	Depth	0		0		0001	
				Dups ave			
RME high	Operable Unit	OU3		OU3		OU3	
intensity visitor	Sample date	8/4/2015		7/31/2015		3/2/2015	
(mg/kg)	Habitat	Floodplain		Floodplain		Floodplain	
--	Aluminum	9240		4520		14000	
--	Antimony	207		192		519	
6.0	Arsenic	**191**		**418**		**442**	
--	Barium	180		54.85		143	
--	Beryllium	0.00288	ND	0.00254	ND	0.002525	ND
255	Cadmium	123		88.85		58.9	
--	Calcium	142000		49450		40700	
--	Chromium	21.8		28.8		33.9	
--	Cobalt	9.87		3.65		6.57	
--	Copper	345		354.5		823	
--	Iron	15700		16500		18000	
1,331	Lead	5040		3625		11100	
--	Magnesium	9180		17750		6040	
--	Manganese	1340		2345		2070	
77.0	Mercury	5.88		2.8		22.7	
--	Nickel	1.055	ND	0.9325	ND	0.925	ND
--	Potassium	2580		1525		3140	
--	Selenium	0.2635	ND	0.2325	ND	0.2315	ND
5.4E+07	Silver	25.3		22		54.7	
--	Sodium	1180		252.5		264	
--	Thallium	14.5		8.98		0.00268	ND
--	Vanadium	16.8		6.44		34.6	
--	Zinc	26500		17950		13700	
--	Phosphate, Total (as P)	1220		1305		1650	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
RBC = risk-based concentration
RME = reasonable maximum exposure
SO = Soil
TL = Tailings
WR = OU3 P.C. West Reach

Table F-4g(4). Screening results for OU3 Upland soil samples compared with Richardson Flats BHHRA (EPA 2003, Table 3-6) calculated RBC* for the RME high intensity visitor

	Sample ID				OU3-0-SO-ER-11D-0		OU3-0-SO-ER-11S-0		OU3-0-SO-ER-4B-0		OU3-0-SO-ER-4Q-0		OU3-0-SO-ER-6A-0		OU3-0-SO-ER-7P-0		OU3-0-SO-ER-8A-0	
	Depth				0		0		0		0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit				OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date				9/14/2015		9/11/2015		9/14/2015		8/5/2015		9/14/2015		9/10/2015		9/14/2015	
	Habitat	**N**	**count of NDs**	**% detected**	Upland		Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	47	0	100%	35000		33700		31700		26600		30400		30100		26800	
--	Antimony	47	5	89%	39.7		7.7		62.8		20.4		4.2		116		8.71	
6.0	Arsenic	47	0	100%	**42.3**		**16.3**		**80.5**		**41.2**		**10.9**		**103**		**11.1**	
--	Barium	47	0	100%	225		189		226		344		198		228		167	
--	Beryllium	47	46	2%	0.00246	ND	0.002575	ND	0.00259	ND	0.002435	ND	0.00224	ND	0.002555	ND	0.002675	ND
255	Cadmium	47	1	98%	8.79		1.77		10.7		5.15		2.26		13.6		4.2	
--	Calcium	47	0	100%	9740		7040		7910		6680		6550		7540		26300	
--	Chromium	47	0	100%	54.5		34.7		39.1		37.1		29.8		40.5		30.7	
--	Cobalt	47	0	100%	11.1		8.03		8.91		13		9.31		7.98		7.24	
--	Copper	47	1	98%	109		30.7		135		78.6		28.1		193		34.1	
--	Iron	47	0	100%	32800		24800		24300		22800		26900		23200		22300	
1,331	Lead	47	0	100%	1030		91.6		1520		642		67.5		2500		176	
--	Magnesium	47	0	100%	7520		7190		6220		5540		5550		6640		6730	
--	Manganese	47	0	100%	1140		488		894		1180		811		760		429	
77.0	Mercury	47	1	98%	1.51		0.122		0.911		0.405		0.118		2.04		0.34	
--	Nickel	47	22	53%	18.4		0.945	ND	0.95	ND	18.5		0.82	ND	0.94	ND	0.98	ND
--	Potassium	47	0	100%	7910		7160		6890		6460		7410		7900		5660	
--	Selenium	47	47	0%	0.2255	ND	0.236	ND	0.237	ND	0.223	ND	0.205	ND	0.234	ND	0.245	ND
5.4E+07	Silver	47	16	66%	8.19		0.0097	ND	13.7		4.13		0.00845	ND	19.9		1.78	
--	Sodium	47	0	100%	565		330		419		432		508		586		368	
--	Thallium	47	46	2%	6.48		0.002185	ND	0.0022	ND	0.002065	ND	0.0019	ND	0.00217	ND	0.00227	ND
--	Vanadium	47	0	100%	63.7		58.7		59.6		55.4		52.6		46		52.9	
--	Zinc	47	0	100%	1870		166		1540		661		286		2270		659	
--	Phosphate, Total (as P)	47	0	100%	892		517		579		565		596		973		711	

Table F-4g(4). (cont.)

	Sample ID	OU3-0-SO-FT-4E-0		OU3-0-SO-FT-5E-0		OU3-0-SO-MRL-14G-0		OU3-0-SO-MRL-14H-0		OU3-0-SO-MRL-14I-0		OU3-0-SO-MRL-14J-0		OU3-0-SO-MRL-15G-0		OU3-0-SO-MRL-15H-0		OU3-0-SO-MRL-15I-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/25/2015		9/25/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
	Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	32500		32000		32500		31300		36000		28000		30000		35000		33200	
--	Antimony	13.1		13.5		21.7		9.51		40.7		5.48		3.9		7.87		51.5	
6.0	Arsenic	**20**		**19.2**		**24.2**		**24.5**		**43.4**		**16.4**		**12.7**		**21.9**		**62**	
--	Barium	327		219		200		220		195		278		204		238		237	
--	Beryllium	0.00306	ND	0.00274	ND	0.00284	ND	0.00273	ND	0.00335	ND	0.00261	ND	0.002805	ND	0.00256	ND	0.00316	ND
255	Cadmium	3.26		9.86		5.44		3.3		8.24		1.88		1.64		3.51		9.64	
--	Calcium	8590		6040		9880		8790		43800		5820		7350		8170		9420	
--	Chromium	41.6		33.9		39.6		39.1		72.5		36		69.9		39.7		45	
--	Cobalt	7.8		8.52		7.44		9.4		10.1		11.8		7.73		9.1		12.4	
--	Copper	59.9		55.1		66.5		44.2		116		36.6		31.8		41.9		126	
--	Iron	22700		24100		24300		24000		24800		24400		22300		25400		23800	
1,331	Lead	375		288		459		213		1290		166		83.1		146		1210	
--	Magnesium	7170		5690		6940		6840		9380		4950		6050		6560		6830	
--	Manganese	315		558		410		484		759		991		252		706		1960	
77.0	Mercury	2.03		1.54		0.651		0.352		2.49		0.154		0.154		0.291		1.81	
--	Nickel	1.125	ND	1.005	ND	1.045	ND	18.9		33.6		18.2		29.9		19		22.9	
--	Potassium	8010		8070		8240		7250		7600		6950		7240		8320		7260	
--	Selenium	0.28	ND	0.251	ND	0.26	ND	0.25	ND	0.307	ND	0.239	ND	0.257	ND	0.2345	ND	0.2895	ND
5.4E+07	Silver	2.14		2.19		4.44		1.73		11.3		0.0098	ND	0.01055	ND	1.33		9.07	
--	Sodium	445		347		376		352		434		390		312		406		591	
--	Thallium	0.002595	ND	0.002325	ND	0.00241	ND	0.002315	ND	0.002845	ND	0.002215	ND	0.00238	ND	0.002175	ND	0.00268	ND
--	Vanadium	61.7		57.6		57.8		55.1		65.7		59.1		53.6		60.8		65.3	
--	Zinc	307		589		1120		522		2170		233		203		426		1660	
--	Phosphate, Total (as P)	1240		1190		1200		1090		843		880		1130		770		874	

Table F-4g(4). (cont.)

	Sample ID	OU3-0-SO-MRL-15J-0		OU3-0-SO-MRL-15K-0		OU3-0-SO-MRL-16G-0		OU3-0-SO-MRL-16I-0		OU3-0-SO-MRL-16J-0		OU3-0-SO-MRL-16K-0		OU3-0-SO-MRL-17G-0		OU3-0-SO-MRL-17H-0		OU3-0-SO-MRL-18G-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME high	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
intensity visitor	Sample date	9/29/2015		9/29/2015		9/28/2015		9/28/2015		9/28/2015		9/29/2015		9/29/2015		9/29/2015		9/29/2015	
(mg/kg)	Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	40800		29000		33700		36000		35500		38900		33000		35400		34500	
--	Antimony	244		0.165	ND	12.9		37.7		16.8		77.3		4.09		4.12		4.1	
6.0	Arsenic	**223**		**11**		**18.8**		**41.8**		**25.1**		**75.1**		**17.1**		**18**		**19.3**	
--	Barium	197		286		216		197		241		335		201		267		332	
--	Beryllium	0.003405	ND	0.002705	ND	0.0027	ND	0.002825	ND	0.0027	ND	0.002985	ND	0.002775	ND	0.0027	ND	0.00265	ND
255	Cadmium	27.5		1.42		2.33		6.03		4.32		12.2		2.23		1.63		1.82	
--	Calcium	13900		5900		8400		7790		7500		18100		10700		6820		8060	
--	Chromium	57.7		46.2		34.2		39.7		41		42.9		33.6		33.9		42.9	
--	Cobalt	8.14		11.9		9.83		8.31		8.48		12.3		9.42		12.6		11.3	
--	Copper	522		34.4		48.9		94.9		54		165		34		34.4		45.9	
--	Iron	30100		24900		23700		24900		27400		27400		24700		28700		28300	
1,331	Lead	6640		94.3		209		1010		256		1710		83.8		83.9		109	
--	Magnesium	10800		5210		6290		6940		6250		8370		6200		5760		7010	
--	Manganese	684		1020		657		424		430		1550		556		921		1090	
77.0	Mercury	11.3		0.0952		0.235		1.03		0.373		3.2		0.141		0.122		0.231	
--	Nickel	1.25	ND	23.4		18.4		19.1		19.3		21.6		1.02	ND	21.7		23	
--	Potassium	9330		8090		8060		8270		7440		8540		7140		6890		8940	
--	Selenium	0.312	ND	0.2475	ND	0.2475	ND	0.259	ND	0.247	ND	0.2735	ND	0.254	ND	0.247	ND	0.2425	ND
5.4E+07	Silver	54.8		0.0102	ND	1.6		7.26		2.24		15		0.01045	ND	0.01015	ND	0.00995	ND
--	Sodium	571		527		353		339		488		460		337		271		483	
--	Thallium	0.00289	ND	0.002295	ND	0.00229	ND	0.0024	ND	0.00229	ND	0.002535	ND	0.002355	ND	0.00229	ND	0.00225	ND
--	Vanadium	76.7		58.5		47.3		52.4		61.7		77.4		67.5		71.9		65.6	
--	Zinc	7800		148		407		1330		622		2610		341		186		245	
--	Phosphate, Total (as P)	1520		975		1740		816		567		1080		1020		1090		1450	

Table F-4g(4). (cont.)

	Sample ID	OU3-0-SO-MRL-19G-0		OU3-0-SO-MRU-10B-0		OU3-0-SO-MRU-12B-0		OU3-0-SO-MRU-12E-0		OU3-0-SO-MRU-13B-0		OU3-0-SO-MRU-1B-0		OU3-0-SO-MRU-3A-0		OU3-0-SO-MRU-3B-0		OU3-0-SO-MRU-4A-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	9/29/2015		9/30/2015		9/30/2015		10/1/2015		9/30/2015		11/10/2014		11/10/2014		11/10/2014		11/10/2014	
	Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	40200		27100		26600		28600		37600		18300		28100		24200		30000	
--	Antimony	0.16	ND	12.9		22.1		6.68		24		37.3		29		112		8.16	
6.0	Arsenic	**19.9**		**22.6**		**39.3**		**22**		**37.5**		**42**		**33.9**		**98.7**		**16.8**	
--	Barium	306		331		318		289		460		200		261		302		253	
--	Beryllium	0.002615	ND	0.002715	ND	0.00294	ND	0.003025	ND	0.00283	ND	0.003125	ND	0.003235	ND	0.003105	ND	0.003115	ND
255	Cadmium	1.8		4.01		11		2.95		4.53		10.9		6.67		17.4		2.94	
--	Calcium	6760		6630		15100		12000		5630		10700		15200		13100		21400	
--	Chromium	40.1		32.6		45.7		131		30.8		72.1		91		73.7		74.5	
--	Cobalt	14.2		13.3		8.71		9.56		11		6.9		8.54		10.6		10.8	
--	Copper	34.8		60		294		39.5		62		89.3		97.3		210		76.1	
--	Iron	29100		27500		36400		22300		28600		15800		21100		20600		26300	
1,331	Lead	83.2		247		925		191		702		1170		914		3040		213	
--	Magnesium	6690		4520		6120		8150		4480		3480		5630		4620		6020	
--	Manganese	1310		838		662		1230		1070		788		1090		1850		1590	
77.0	Mercury	0.0913		0.712		0.709		0.211		1.33		0.712		1.15		0.526		0.306	
--	Nickel	22.2		19.8		1.08	ND	26.8		1.04	ND	1.15	ND	1.19	ND	22.8		23.9	
--	Potassium	9550		6600		6550		8800		8580		5060		8660		6640		8930	
--	Selenium	0.2395	ND	0.2485	ND	0.2695	ND	0.277	ND	0.2595	ND	0.2865	ND	0.2965	ND	0.2845	ND	0.2855	ND
5.4E+07	Silver	0.00985	ND	2.52		5.11		0.0114	ND	2.96		6.53		6.93		13.9		0.0117	ND
--	Sodium	388		294		2310		385		224		352		452		416		424	
--	Thallium	0.00222	ND	0.002305	ND	0.002495	ND	0.002565	ND	0.0024	ND	0.002655	ND	0.002745	ND	0.002635	ND	0.002645	ND
--	Vanadium	69.6		68.3		46.5		50		62.8		37.9		51.4		49.3		55.1	
--	Zinc	192		861		1940		328		993		1380		994		2260		424	
--	Phosphate, Total (as P)	1030		1240		625		3340		1100		4020		5460		4170		68400	

Table F-4g(4). (cont.)

	Sample ID	OU3-0-SO-MRU-4B-0		OU3-0-SO-MRU-5B-0		OU3-0-SO-MRU-6A-0		OU3-0-SO-MRU-6B-0		OU3-0-SO-MRU-6D-0		OU3-0-SO-MRU-7B-0		OU3-0-SO-MRU-8B-0		OU3-0-SO-MRU-8D-0		OU3-0-SO-MRU-9B-0	
	Depth	0		0		0		0		0		0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3		OU3	
	Sample date	11/10/2014		11/11/2014		11/11/2014		11/11/2014		11/12/2014		9/30/2015		9/30/2015		10/1/2015		9/30/2015	
	Habitat	Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland		Upland	
--	Aluminum	17100		12700		20900		14900		22100		17700		25400		35400		29100	
--	Antimony	61.7		23.4		14.3		0.2435	ND	16.7		28.5		213		8.23		21.5	
6.0	Arsenic	**42.8**		**26.6**		**22**		5.55		**24.3**		**31.7**		**244**		**18.3**		**34.3**	
--	Barium	228		181		256		164		207		154		269		228		221	
--	Beryllium	0.00314	ND	2.28		0.003235	ND	0.003985	ND	0.00284	ND	0.00243	ND	0.003255	ND	0.003265	ND	0.00262	ND
255	Cadmium	14.1		9.99		3.47		0.0113	ND	7.88		5.59		41.6		2.68		5.05	
--	Calcium	17300		13900		27600		16300		11200		64300		20100		13500		5800	
--	Chromium	40.1		17.6		67.7		28.8		29.4		24.3		69.4		43.7		41	
--	Cobalt	6.11		3.56		7.88		5.05		9.16		5.87		14.8		14.4		15.7	
--	Copper	152		74.4		37		1.025	ND	48		64.1		473		35.9		51.8	
--	Iron	14100		11600		18800		12100		19400		16600		33200		30700		32500	
1,331	Lead	1600		744		371		21.4		511		906		6610		217		495	
--	Magnesium	4010		2750		6710		7610		8320		5550		11700		11100		6200	
--	Manganese	984		269		956		354		1480		2810		4600		1060		965	
77.0	Mercury	2.54		0.783		0.606		0.00175	ND	0.815		0.993		17.7		0.284		1.02	
--	Nickel	1.155	ND	1.235	ND	1.185	ND	1.465	ND	1.045	ND	0.895	ND	29.2		24.7		23.4	
--	Potassium	5740		2190		5940		3360		7360		4750		5830		5010		5070	
--	Selenium	0.288	ND	0.308	ND	0.296	ND	0.365	ND	0.2605	ND	0.2225	ND	0.298	ND	0.299	ND	0.24	ND
5.4E+07	Silver	6.9		2.92		0.01215	ND	0.015	ND	2.78		4.42		50.2		0.0123	ND	3.15	
--	Sodium	330		697		425		212		242		295		368		747		238	
--	Thallium	0.002665	ND	0.00285	ND	0.002745	ND	0.00338	ND	0.00241	ND	0.002065	ND	0.00276	ND	0.00277	ND	0.002225	ND
--	Vanadium	33.6		20.7		43.5		30.9		49		41		78.6		68.2		79.6	
--	Zinc	1150		1610		468		67.4		1130		908		9290		402		971	
--	Phosphate, Total (as P)	1900		1200		2680		436		1010		2230		1710		1240		1290	

Table F-4g(4). (cont.)

	Sample ID	OU3-0-SO-NR-12Q-0		OU3-0-SO-NR-2C-0		OU3-0-SO-NR-2F-0		OU3-0-SO-NR-4J-0	
	Depth	0		0		0		0	
RME high intensity visitor (mg/kg)	Operable Unit	OU3		OU3		OU3		OU3	
	Sample date	10/5/2015		9/22/2015		9/22/2015		9/22/2015	
	Habitat	Upland		Upland		Upland		Upland	
--	Aluminum	17300		20900		24400		30500	
--	Antimony	0.164	ND	7.28		7.25		0.1445	ND
6.0	Arsenic	**8.36**		**10.9**		**13.9**		**47.2**	
--	Barium	105		348		241		234	
--	Beryllium	0.002685	ND	0.002525	ND	0.0025	ND	0.00237	ND
255	Cadmium	0.833		3.07		2.67		1.18	
--	Calcium	2700		8660		8800		7330	
--	Chromium	20.2		32.2		32.3		42.4	
--	Cobalt	6.05		10.9		8.13		9.73	
--	Copper	17.1		43		34.7		19.5	
--	Iron	13100		25200		19700		24500	
1,331	Lead	42.4		251		233		77.4	
--	Magnesium	3110		5270		5850		7550	
--	Manganese	382		706		472		318	
77.0	Mercury	0.162		0.263		0.322		0.0772	
--	Nickel	0.985	ND	17.3		0.92	ND	17.9	
--	Potassium	4800		5050		5740		7030	
--	Selenium	0.246	ND	0.2315	ND	0.229	ND	0.217	ND
5.4E+07	Silver	0.0101	ND	1.57		1.37		0.0089	ND
--	Sodium	293		1670		459		526	
--	Thallium	0.00228	ND	0.002145	ND	0.00212	ND	0.00201	ND
--	Vanadium	33.6		60.6		45.1		83.8	
--	Zinc	60.1		333		348		104	
--	Phosphate, Total (as P)	291		1420		983		1060	

Notes:
Samples were collected November 2014 to October 2015
All samples analyzed by laboratory as bulk samples.
Results reported as mg/kg
Non-detects are reported at half the detection limit
Duplicate samples have been averaged
Sampling Depth:
0 is a surface sample; collected at 0-2 inches

Key:
-- = no EPA screening value available
ER = OU3 P.C. East Reach
FT = OU3 Floodplain Tailings Reach
ID = Identification
mg/kg = milligrams per kilogram
MR# = OU3 Middle Reach Boring Sample Collected during piezometer installation; See Figure 1-3 for piezometer location
MRL = OU3 Middle Reach Lower
MRU = OU3 Middle Reach Upper
ND = Non-Detect
NR = OU3 State Route 248 North Reach
OU3 = Richardson Flat Tailings Site Operable Unit 3
RBC = risk-based concentration
RME = reasonable maximum exposure
SO = Soil
WR = OU3 P.C. West Reach