Appendix L

Riparian/Nearshore Evaluation

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L1 Introduction

This document presents a conceptual site model (CSM) of the riparian and nearshore environment along 100-K at the Hanford Site, Washington. The 100-K area is located along the Columbia River and includes the 100-KR-1 and 100-KR-2 Source OUs, the 100-KR-4 Groundwater OU and the adjacent surface water, saturated sediment and aquatic biota. This conceptual site model has been developed to further evaluate concentrations of nonradiological substances and radionuclides detected in soil, water, and sediments, and to determine if potential transport pathways exist to these media from Hanford Site sources. The supporting evaluation of analytical data also determines if there is the potential for exposure to aquatic receptors.

L1.1 Background

Remediation of waste sites in the 100-K area has been ongoing since 2002 (DOE/RL-2008-46, ADD2) based on an interim action Record of Decision (ROD) (EPA, 1999) remedial action goals (RAGs) for protection of human health and protection of groundwater and the Columbia River (DOE/RL-96-17). Remediation of contaminated groundwater also has been ongoing at the 100-KR-4 OU under an interim action ROD (EPA, 1996). A key component needed to support development of final remedies is a baseline risk assessment. The River Corridor Baseline Risk Assessment (RCBRA) was initiated in 2004 to characterize current and potential threats to human health and the environment (DOE/RL-2004-37; DOE/RL-2007-21). In addition to waste sites located in upland areas and groundwater, the RCBRA evaluated soil, sediment, and water located in riparian and nearshore areas. The RAGs used in the interim actions addressed risks to human health from direct contact with soil and threats to groundwater from leaching from soil, but did not directly address risks to ecological receptors. The ecological risk assessment conducted as part of the RCBRA addresses residual contaminant concentrations at remediated waste sites in the upland zones and the transport of contaminants from waste sites to the Columbia River riparian and nearshore zones (DOE/RL-2008-46).

The RCBRA evaluated ecological risks at representative riparian study sites located adjacent to, or where they may be directly affected by, known contaminated media (groundwater seeps, soil, or sediment). The RCBRA concluded that six of the 22 contaminants (arsenic, chromium, lead, mercury, zinc, and TPH-diesel) of potential ecological concern (COPECs) identified for the riparian environment may present some level of risk for one or more of the assessment endpoint entities, based on soil bioassays, comparison of COPEC concentrations to plant or terrestrial invertebrate toxicity benchmarks, or the results of wildlife exposure analyses. The RCBRA evaluated ecological risks at nearshore study sites potentially affected by contamination from Hanford Site sources in comparison to reference sites. Study sites were selected in areas where known contaminated groundwater plumes enter the Columbia River and in areas between the plumes. The RCBRA concluded that five of the 22 COPECs (cadmium, chromium, Cr(VI), manganese, and uranium) identified for the nearshore environment might present some level of risk for one or more of the assessment endpoint entities. Risk results that are relevant are the comparisons of COPEC concentrations to toxicity benchmarks or the results of wildlife exposure analyses (DOE/RL-2007-21, Volume 1).

The five contaminants of ecological concern (COECs) identified by the RCBRA in riparian and nearshore media mostly were metals and TPH-diesel. With few exceptions (notably chromium and Cr(VI)), there are ambient sources for the constituents in soil, sediment and water that are unrelated to the Hanford Site. Taking into consideration what is understood to be principal threat constituents in soil and groundwater at the 100-K area, compared with the contaminants identified by the RCBRA as posing ecological risks in riparian and nearshore media, additional work was warranted to better understand the CSM—the

interrelationships between sources, transport mechanisms, exposure pathways and receptors—in the riparian and nearshore environment.

L1.2 Description of the 100-K Area

The 100-K area is situated between 100-BC and 100-N and borders the Columbia River. Topography changes are greatest in the vicinity of the river. Away from the river, the 100-K area is characterized by low relief and gentle slopes. The operational area within the perimeter fence has been disturbed and graded extensively by human activity since reactor construction began in the 1950s through present-day waste site remedial activities (DOE/RL-2008-46, ADD2; PNNL-SA-41467).

The entire River Corridor, which includes the 100-K area, has been divided in three environmental zones for purposes of investigation (DOE/RL-2007-21; DOE/RL-2008-46): the upland, riparian, and nearshore aquatic zones. Summary definitions of these environmental zones are presented in Section L1.4. With the exception of one area of remediated waste sites (includes the 116-K-2 trench) that extends 1.5 km northeast from the perimeter fence; the upland area outside of the fence is relatively undisturbed. Spatial data provided by the Ecological Monitoring and Compliance program shows that vegetation to the east, south and west of the perimeter fence consists primarily of three vegetation types: Sandberg's bluegrass-cheatgrass, gray rabbitbrush/Sandberg's bluegrass-cheatgrass, and small patches of big sagebrush/Sandberg's bluegrass-cheatgrass. Wildlife species observed in this area also are described in the PNNL data summary for the reactor areas along the River Corridor.

The riparian environment adjacent to 100-K extends in a strip along the Columbia River to the north and slightly west of the facility. The strip varies in width from a narrow zone (50 to 75 m) lying north of the eastern end of 100-K to a wider zone (150 to 200 m) at the westernmost portion of the facility near the river (PNNL-SA-41467).

L1.3 Review of Previous Riparian/Nearshore Studies

Investigations, which were historically conducted in the riparian and nearshore areas of the 100-K area, are summarized in PNNL-SA-41467. Most recently, investigations of riparian and nearshore areas were conducted as part of the River Corridor Baseline Risk Assessment (RCBRA) (DOE/RL-2007-21; DOE/RL-2005-42).

McCormack and Carlile, 1984 identified riverbank springs and groundwater seeps along the length of the Hanford Site shoreline. The results of this investigation reported tritium concentrations in 100-K in groundwater, riverbank springs and adjacent surface water at concentrations of 49,000 pCi/L, 5,500 pCi/L, and 300 pCi/L, respectively.

Peterson and Johnson, 1992, conducted sampling of riverbank springs and adjacent surface water in 1991 resulting in detections of chromium, tritium, Sr-90, technetium-99, and total uranium in one or both media types. Riverbank spring sediment samples were also collected from 100-K reporting low concentrations of Sr-90, cesium-137, radium-226, thorium-228, and thorium-232.

Weiss 1993 also collected five sediment samples in 1992 from four locations in the vicinity of 100-K. Concentrations of metals (arsenic, chromium, lead, and zinc) and radionuclides (cesium-137 and europium-152) were detected in a single sample. Investigations, which were historically conducted in the riparian and nearshore areas of the 100-K decision area, are summarized in (PNNL-SA-41467).

L1.3.1 Surface Environmental Surveillance Program

In addition to the historical investigations stated above, other sampling and analytical data have been collected from riparian and nearshore areas as part of the Surface Environmental Surveillance Program (SESP). The SESP is responsible for site-wide and offsite environmental surveillance at Hanford. Surface environmental surveillance at the Hanford Site is a multimedia environmental monitoring effort conducted to assess onsite and offsite human health exposures to radionuclides and chemicals and to evaluate the impact of Hanford Site operations on the environment.

The SESP does not routinely monitor surface water in the vicinity of 100-K. The nearest routinely monitored locations are surface water transects located upriver at the Vernita Bridge and immediately downriver at 100-N. Riverbank spring samples are collected from a range of locations along the shoreline of 100-B/C, 100-K, 100-N, 100-D, 100-H, and 100-F, downstream of the Hanford town site, and at the 300 Area. Groundwater enters the Columbia River at these locations, with some contaminant concentrations higher than background concentrations.

The trends in metals concentrations in spring samples are reported to have been consistent over the past several years. With the exception of chromium, concentrations of metals in spring samples in 100-K were below Washington State chronic ambient surface water quality criteria in WAC 173-201A. Concentrations of radionuclides detected in springs in 2009 were reported to be similar to those in previous years. Potassium-40 (natural background), cesium-137, and uranium isotopes were the only radionuclides reported above minimum detectable concentrations. Concentrations of radionuclides and metals in 100-K sediments were similar to levels detected in previous years (PNNL-19455).

L1.3.2 Groundwater and Aquifer Tube Monitoring Programs

The U.S. Department of Energy monitors groundwater at the Hanford Site to fulfill a variety of state and federal regulations, including the Atomic Energy Act of 1954 (AEA), the Resource Conservation and Recovery Act of 1976, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, and WAC 173-340, “Model Toxics Control Act—Cleanup.” The groundwater monitoring data relevant to the 100-K riparian/nearshore environment are discussed further in Section 3 of this appendix.

DOE monitors groundwater quality along the Columbia River by collecting samples from aquifer tubes and riverbank seeps (springs). The rise and fall of the Columbia River create a zone of interaction that influences contaminant concentrations and groundwater flow patterns. Water samples from aquifer tubes and riverbank seeps nearly always represent a mixture of river water and approaching groundwater. In general, the degree of dilution by river water decreases with depth in the aquifer near the river shoreline. The degree of dilution also varies by location and with seasonal river cycles (PNNL-13674). The aquifer tube and seep data relevant to the 100-K riparian/nearshore environment are discussed further in Section L3 of this appendix.

L1.4 Approach to CSM Development

As described previously, the objective for developing this CSM is to provide a tool for evaluating the potential for contaminants in riparian and nearshore media to be associated with releases from Hanford-related sources. The foundation for developing the CSM begins with the definition of environmental zones presented in the RCBRA (DOE/RL-2007-21). They are:

- **Nearshore aquatic zone:** the nearshore aquatic zone includes the surface water of the Columbia River from the area that is permanently inundated by river water (i.e. the low-water mark, commonly referred to as the “green line,” where the periphyton remain green year-round) up to the riparian zone.

- **Riparian zone:** the riparian zone is a transition area between the aquatic environment in the nearshore zone and the upland zone. The riparian zone extends from the shoreline of the Columbia River to the point on the riverbank where upland vegetation becomes dominant. The riparian zone typically is narrow and varies in width depending on the slope of the riverbank.

- **Upland zone:** the upland zone consists of land that extends inland from the riparian zone and is situated approximately 3 m (10 ft) above the river high-water mark. The upland zone generally is dry and not readily influenced by river flow. Recharge to groundwater in this zone occurs largely from precipitation. The upland zone includes operational areas in the 100 Area decision areas and generally is where waste sites are located.

These environmental zones are depicted in Figures L-1 and L-2.

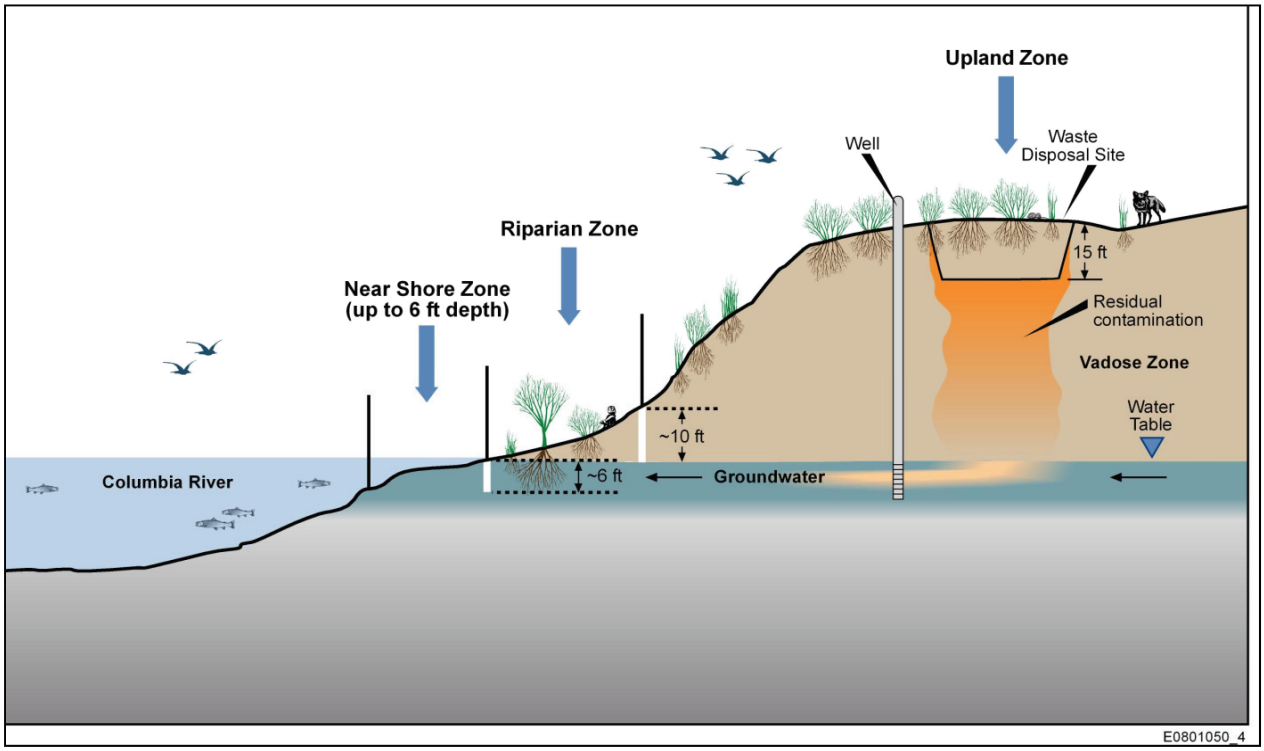

Figure L-1. Environmental Zones in the Riparian/Nearshore Area

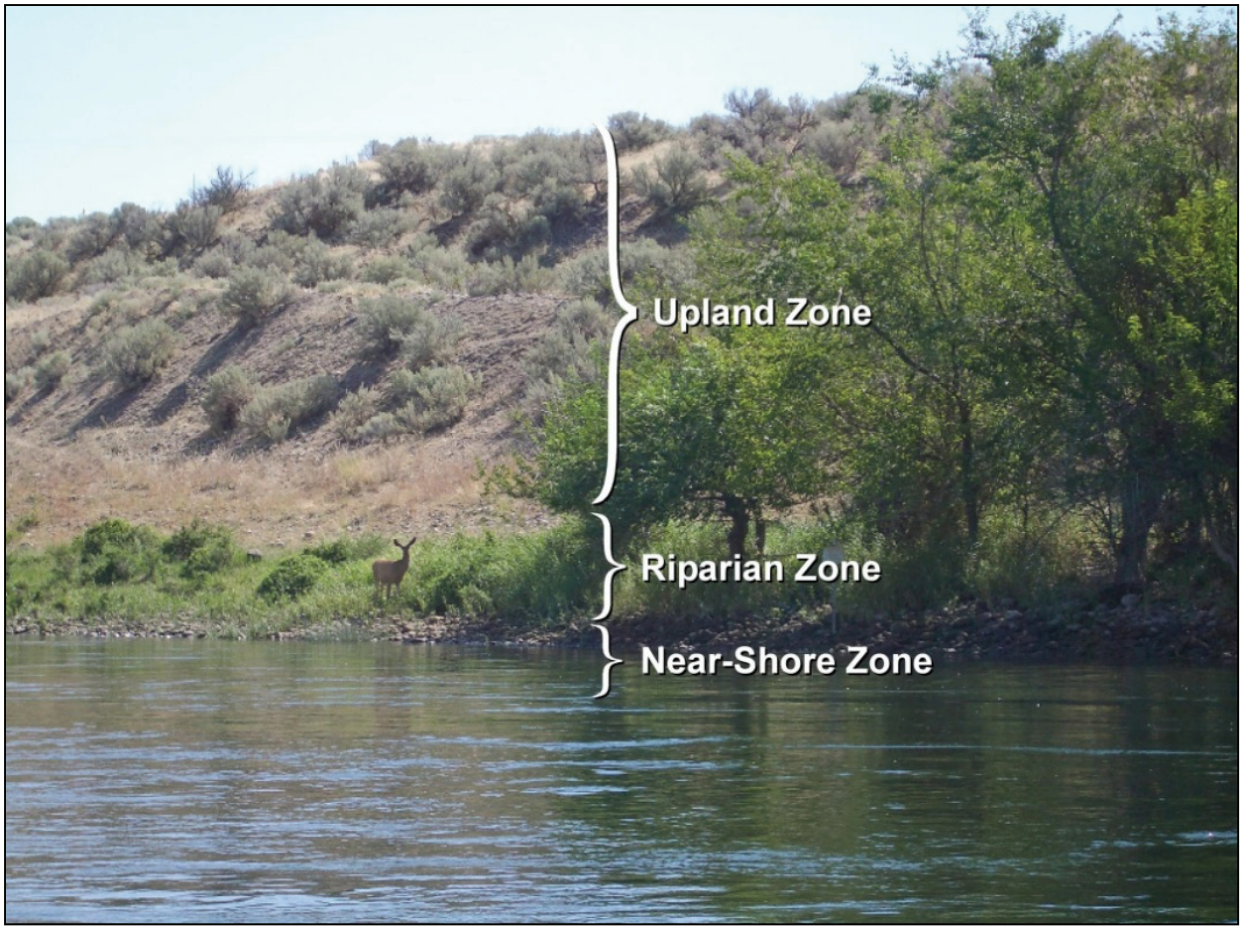

Figure L-2. Photograph Depicting the Environmental Zones

Potential exposure pathways from source OUs and the underlying groundwater OU located in the upland zone have been traced to media in the riparian and nearshore zones. An exposure pathway can be described as the physical course that a contaminant takes from the point of release to a receptor. The route of exposure is the means by which a contaminant comes into contact with a receptor. For an exposure pathway to be complete, all of the following components must be present:

- A source
- A mechanism of contaminant release and transport
- An environmental transport medium
- An exposure point
- An exposure route
- A receptor or exposed population

In the absence of any one of these components, an exposure pathway is considered incomplete and, therefore, creates no risk or hazard.

An additional consideration for contaminants detected in riparian and nearshore zones is a contaminant source, or sources, unrelated to Hanford Site operations that have been transported and deposited via the river. These other sources also are discussed as part of this CSM. Identification of potential exposure pathways in the riparian and nearshore zones is described in Section L2.

Once the potential exposure pathways are identified and described, sampling and analytical data from various media are evaluated. The objectives for this evaluation include depicting the relative concentrations in the various riparian and nearshore media and to evaluate data quality. Media in the riparian and nearshore areas that have been sampled include groundwater, pore water, seeps/springs, surface water, sediments, biota, and soil. The results from this data evaluation are combined with the exposure pathway information (described previously) to determine if contaminant concentrations located at exposure points are potentially associated with Hanford Site activities. The data evaluation is described in Section L3.

An evaluation of potential ecological risks in riparian and nearshore zones was conducted as part of the RCBRA (DOE/RL-2007-21). The results from this evaluation are summarized in Section L4. These results, which identified contaminants of ecological concern (COECs), are compared with the results from the data evaluation in Section L3 to determine if those COECs might be associated with Hanford Site activities.

L2 Evaluation of Riparian and NearShore Exposure Pathways

This section describes the sources, release and transport mechanisms, environmental media through which contaminant transport occurs and exposure points in the riparian and nearshore zones. This section provides the framework for the data evaluation that is presented in Section L3.

L2.1 Sources

A total of 163 waste sites are found in the 100-K area, located principally in the upland zone. As described in PNNL-SA-41467, the riparian environment is a strip along the Columbia River varying in width of 50 to 75 m lying north of the eastern end of 100-K to a width of 150 to 200 m at the westernmost portion of the facility near the river. A limited number of the 100-K waste sites are of interest with regard to the riparian/nearshore CSM. In addition to these waste sites, groundwater in the 100-KR-4 OU is potentially a source for contaminant release to riparian and nearshore media.

L2.1.1 Waste Sites and Soils

The waste sites located close to the riparian zone in the 100-K OU are presented in Figure L-3. Brief descriptions of these sites are presented in the following paragraphs. The nature and extent of contamination has been characterized, or is currently being characterized for these waste sites. While it is not known that there are potential releases or exposure pathways from these sites, their proximity to the riparian area makes them candidates for consideration as potential sources in this evaluation.

128-K-2. The site is located approximately 0.3 kilometers (0.2 miles) southwest of the 100-K area perimeter fence along the old Hanford Irrigation Project Canal. This site has not been covered with fill. A single chain fence with asbestos warning signs marks the area. A wide variety of trash is exposed on the ground surface. There is evidence of burning in many locations. Most of the material on the surface is scrap metal and glass. Office waste, paint, solvents, laboratory waste have also been found. The area is also covered with non-friable and friable asbestos. This site is a candidate for interim action, and is being evaluated in the 100-K RI/FS. Fieldwork is scheduled for this site in 2012.

100-K-63. The site is located along the Columbia River shoreline, north of the 107-KW Basins and received effluents leaked from the 107-KW basins. The site is a large portion of the flood plain, along the shore of the Columbia River, north of 100-K West Reactor Area that is posted as a radiological contamination area. Most of it is posted as an Underground Radioactive Material Area, but there are two sections that remain posted as Soil Contamination Areas. Remediation is in process under an Interim

Action (IAROD) and expected to be completed in 2012. A recent report summarized analytical results, field observations and protectiveness evaluations based on sampling and radiological surveys in the excavated area and potholing locations within the 100-K-63 waste site (RA-00287, Rev. 0). This report identifies constraints to excavation based on the proximity of cultural resources and presents analytical results in soil at the proposed boundaries of excavation, in the riparian area. These results are discussed further in Section L3.

100-K-64. The site is located north of the 107-KE Retention Basins, along the Columbia River shoreline, just west of the 116-K-1 Crib and received effluents from the 100-KW basin. The site is the portion of the flood plain, along the shore of the Columbia River, north of 100-K East Reactor Area. Remediation is in process under an IAROD.

116-K-2. This site was located northeast of 116-KE-4 (107-KE Retention Basins) and ran parallel to the Columbia River. During reactor operation, several washout areas were created along the riverside of the unit. This was due to the unit being at a much higher elevation than the area between it and the Columbia River. The washout areas resulted from extensive seepage through the north side of the unit, which ran along the surface of the ground until reaching the river. Remediation has been performed at this site under an IAROD.

L2.1.2 Groundwater

The 100-KR-4 OU includes groundwater impacted by contaminant releases from facilities and waste sites within 100-K. Most of the facilities and waste sites are associated with former operation of the 100-KE and 100-KW Reactors and their support facilities.

Principal groundwater issues for the 100-KR-4 OU involve (1) a large chromium plume created by past disposal to an infiltration trench located near the Columbia River, (2) localized chromium plumes of uncertain origin near the 100-KE and 100-KW Reactors, (3) radiological contamination associated with past discharges to the ground near the 100-KE and 100-KW Reactor buildings, and (4) loss of shielding water from the fuel storage basins associated with each reactor building. Groundwater beneath 100-K flows generally toward the northwest to the Columbia River. Average rates of flow toward the Columbia River are in the range 0.1 to 0.3 m/d, as estimated from hydraulic gradients, and from migration rates of plumes (PNNL-14031). This suggests a 10 to 12-year travel time for tritium and other dissolved waste constituents to travel from the vicinity of the 100-KE Reactor to the river. Waste constituents that interact with sediment, such as Sr-90, travel more slowly.

Locally, groundwater flow is affected by extraction and injection wells at the three-pump-and-treat systems. Water levels in the Columbia River are controlled by upstream hydroelectric dams. Seasonal high water levels in the spring and summer effectively dam plume migration to the Columbia River by creating a higher inland gradient along the river than the riverward gradient from the center of the Hanford Site. As a result, chromium concentrations typically decline in near river wells during the spring and summer, then rise in the fall. The daily and seasonal water level increases are thought to contribute a subtle flow component that parallels the river in nearshore groundwater and contaminant plumes, and which may have contributed in part to the chromium plume in the downriver from Cr(VI) plumes meeting the Columbia River may be attributable to this effect.

Chromium has been identified as a contaminant of concern that warrants interim remedial action in the 100-KR-4 OU. Other contaminants of interest in the OU include carbon-14, nitrate, Sr-90, technetium-99, trichloroethene, and tritium. These constituents are of interest primarily because their concentrations exceed drinking water standards. The results of Chapter 6 indicate that Cr(VI), nitrate, carbon-14, Sr-90, trichloroethene, and tritium warrant further evaluation in the FS.

L2.2 Contaminant Release and Transport Mechanisms

Release and transport mechanisms potentially most likely associated with the occurrence of Hanford Site contaminants in riparian and nearshore zones are overland transport from waste sites, and contaminant leaching from the vadose zone to underlying groundwater, followed by lateral transport in groundwater.

L2.2.1 Overland Transport from Waste Sites

Hazardous and radioactive substances that are in surface materials can be transported away from facilities or known waste sites by surface runoff following precipitation events. Overland flow is water flow over the ground surface that occurs from precipitation, either rainfall or snowmelt that is greater than obstraction demands (interception, evapotranspiration, or infiltration). In addition, overland flow can occur from the spillage of process effluent that historically had been discharged into liquid waste disposal units. Overland flow potentially results in the transport of contaminated sediments or water away from a waste site. Factors that affect overland flow include slope of the ground surface, soil texture, and vegetative cover, and frequency of precipitation. The Hanford Site is in a semiarid region and precipitation is more than balanced by evaporation and transpiration such that substantial overland flow from precipitation is an unlikely occurrence. A more likely source for overland flow is spills or releases from liquid waste disposal facilities.

Examples of overland flow at 100-K riparian sites include flows from various retention basins and erosion of the 116-K-2 Trench over time. During reactor operations, the retention basins frequently developed leaks, consisting of cooling water, both in the structure and lines leading to and from the basins. The first noticeable large leaks caused ponding between the basins and the road to the north of the basins, which was diverted via a metal culvert to the 116-K-2 Trench and to the river shoreline. Because of the location of these basins being less than 1,000 ft from the shoreline, effluent leaked into the Columbia River (WHC-SD-EN-TI-239).

More specifically, the overland flow from the 116-K-2 Trench was caused from the trench location being at a much higher elevation than the area between it and the Columbia River. Consequently, during reactor operations, several washout areas were created along the riverside of the trench. These washout areas resulted from extensive seepage through the north side of the trench, causing surface contamination that extended several hundred feet (WHC-SD-EN-TI-239).

L2.2.2 Contaminant Leaching from Waste Site Soils to Groundwater

Contaminated wastes released from reactor support facilities, cooling water processing facilities, underground piping, liquid waste disposal sites, solid waste disposal sites, and surface spills were primary sources of contamination in 100-K during operations and secondary sources may have developed in vadose zone and aquifer materials. The potential for transport of contaminants within the vadose zone and aquifer at 100-K is affected by the impacts of historical high volume liquid waste disposal during operations on vadose zone moisture and the water table, the development of secondary sources of contamination in the vadose zone material, groundwater/surface water interactions, and the effect of Columbia River stage fluctuations on contaminant transport. The fate and transport of contaminants detected in vadose zone and groundwater above applicable criteria is discussed in detail in Chapter 5 of the RI/FS report.

One concept important to understanding contaminant fate and transport in 100-K is the difference between site conditions during Hanford operations (1955 to 1971) and the current site conditions, which have developed since reactor operations ended.

During operations, large volumes of reactor cooling water, containing water treatment chemicals (e.g., Cr(VI), sulfate, aluminum, etc.) and radionuclides (activation and fission products), were temporarily stored in retention basins prior to discharge to the Columbia River. The retention basins began leaking water to the 116-K-2 Trench. The water table beneath 116-K-2 Trench formed a groundwater mound that created an increased hydraulic gradient as the water flowed out from the source area at the trench and, therefore, increased transport of contaminants toward the Columbia River as well as inland. Additional releases of contaminants occurred at other operating areas; burial grounds received wastes containing mobile contaminants that may have leached to groundwater. Reactor cooling gas condensate cribs received condensed gases containing C-14 and other nuclides. Cooling water treatment plants released concentrated sodium dichromate solutions at various times via planned and unplanned releases. Leakage from spent fuel storage basins released radioactive and nonradioactive contaminants to the vadose zone where some migrated to underlying groundwater.

Under current conditions, most of the high volume liquid effluent releases ended when reactor operations ceased in 1971. Secondary sources of contamination may remain at both unremediated and remediated waste sites due to sorption to vadose zone material. The concentrations of residual contaminants at remediated sites were evaluated in their respective cleanup verification package reports and reported to be below the applicable cleanup criteria. A portion of the vadose zone is periodically rewetted with seasonal and daily changes in the water level of the Columbia River. Although the RI/FS samples collected in this periodically rewetted zone did not indicate the presence of a secondary source significantly contributing to the persistence of Cr(VI) in the unconfined aquifer, the potential for secondary sources within the vadose zone cannot be excluded.

L2.2.3 Transport in Groundwater

Groundwater flow and contaminant transport in the unconfined aquifer is also affected by Columbia River stage fluctuations. The increase in the river stage during the spring freshet pushes water inland and causes water table elevation increases throughout 100-K. Consequently, the hydraulic gradient is altered and less water flows into the river from the aquifer. During the low river stage in the fall, groundwater flow toward the river dominates. Depending on the location within 100-K, direction variability in flow occurs because of these competing influences.

The groundwater system is highly dynamic being influenced by regional groundwater conditions, the local site remediation efforts, and the daily and seasonal variations of river stage. The main features of the current conceptual model follow.

- Flow under the site and near the banks is generally assumed to be perpendicular to the river.
- Deeper geologic formations are assumed not to contribute to shallow groundwater or observed river exchanges along the riverbank.
- The daily variability of river stage creates a complex zone of mixing within the near-bank groundwater system.
- Springs observed on the riverbanks are attributed to bank storage of river water and site groundwater discharging to the river when river stage drops.
- Site groundwater generally discharges to the banks via springs and through the bottom of the Columbia River immediately adjacent to the Site.

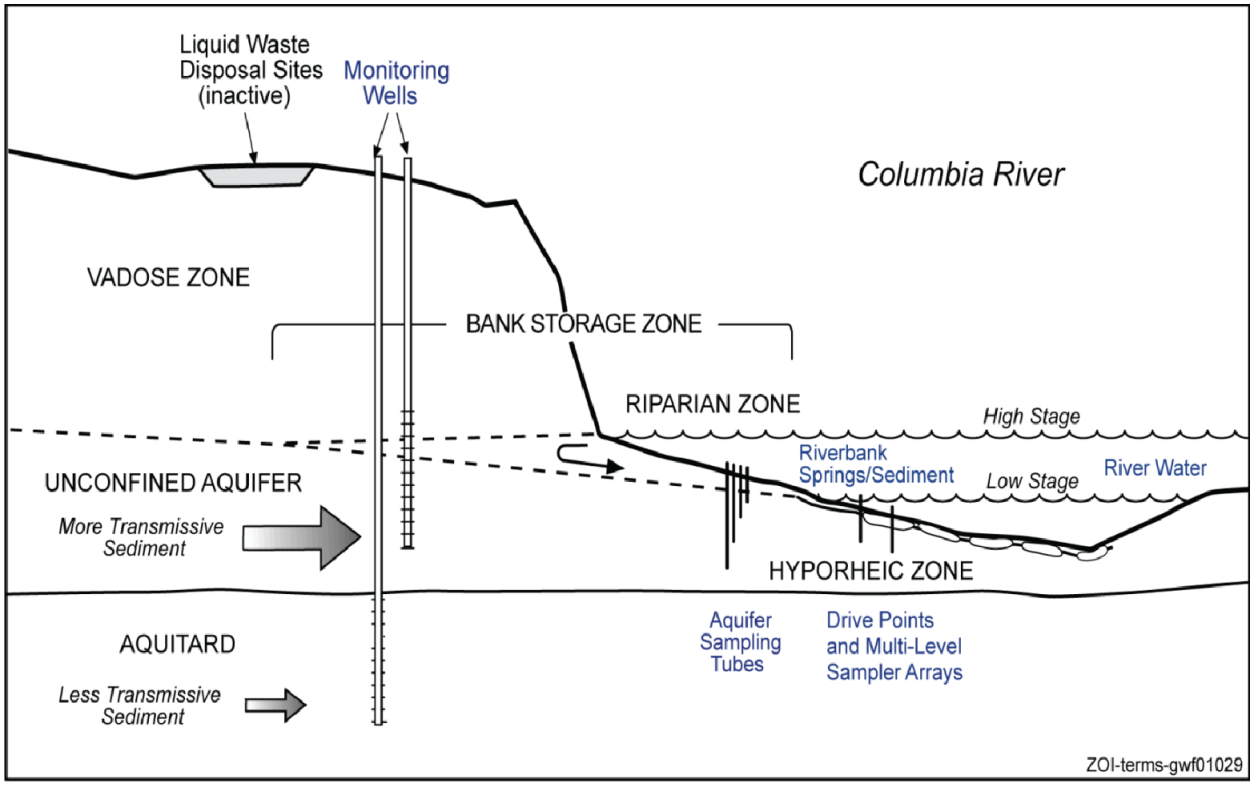

Figure L-4. Conceptual Model of Groundwater-Surface Water Interaction at the Hanford Site

The site conceptual model needs to clearly include the transient nature of water exchange in this setting at multiple time scales (Figure L-4). For example, a daily 3 m change in river levels superimposed with seasonal changes or alterations of site groundwater flows by remediation efforts likely causes seasonal shifts in the regional groundwater flow system that will consequently impact groundwater-surface water exchange locations and rates. The complex geologic setting, aquifer heterogeneity, and transient nature of the surface water and groundwater results in a complex groundwater flow system. During major spring discharge events, river water may enter the banks and the adjacent groundwater system upstream of the Site and move laterally parallel to the river for some distance before discharging back into the river (SGW-39305).

L2.3 Exposure Points in Seeps, Surface Water, Sediments, and Riparian Soils

The RCBRA (DOE/RL-2007-21) showed a cross section of the river which defined the study zones to be the upland zone, the riparian zone, nearshore aquatic zone, and aquatic zone as a vertical panel that extends down from the surface into the subsurface to some undetermined depth when, in reality, they are three-dimensional zones that change size over time. In particular, it is the vertical distribution of the receptors beneath the river and in the deposits adjacent to the river that potentially (i.e., the depth to which they are found, or bottom of the system) have the greatest implications for remedial actions, because the mechanisms of dilution and mixing of groundwater may not be as effective at greater depths and so there is greater potential for exposure to contaminants from groundwater.

In the studies of the Columbia River at the Hanford Site, the term hyporheic zone has been used as a general term to describe the zone of all groundwater and surface water mixing. Receptors in the riverbed and benthic and hyporheic zones can be exposed to contaminated (1) groundwater, (2) groundwater surface-water mixtures, or (3) surface water. These distinctions become important when identifying from

analytical results in groundwater and surface water contaminants of potential ecological concern that are related to Hanford Site operations.

Investigation of riparian area soils was conducted as part of the RCBRA. The riparian assessment evaluated ecological risks at 18 study sites potentially affected by contamination from Hanford Site sources. Eleven study sites were selected from locations that may be adjacent to or directly affected by known contaminated media (groundwater seeps and springs, soil, sediment). These sites were located along the Columbia River shoreline near the operating areas (100-B/C, 100-K, 300 Area, etc.) and included six sites with relatively elevated contaminant concentrations and five sites with relatively low contaminant concentrations. Historic data and radiation surveys were used to determine the general contaminant levels at each site. Two of these riparian study sites were located near the 100-K decision area. Additionally, pothole sampling at the 100-K-63 waste site provided riparian soils data as well. These sites are described as follows:

- **Riparian 2c**. This investigation area was located 100 m downstream of the old Hanford town site water intake (historic pump house) and just upstream of a major peninsula known as Coyote Rapids. Scattered metal debris was common throughout the site, and a small road that had been used extensively by Hanford Site personnel crossed a small portion of the upper end of the investigation area. This site's average dimensions were 30 × 200 m, but the widths varied from 20 to 70 m and encompassed approximately 4,600 m^2 of shoreline habitat. This site was also located in a relatively high depositional environment, and widened substantially near the downriver end. The site consisted of sediment-covered cobbles and a moderate cover of reed canary grass and other associated riparian taxa. Mulberry (*Morus spp.*) trees bounded the upper regions on nearly half of the investigation area. This site is located upstream of the 100-K decision area.

- **Riparian #5**. This site is located 0.5 km downstream of the 100-K East water intake structure. The shoreline boundary consists of a series of small points and bays with lightly scattered vegetation consisting of largely of forbs and a few scattered short-statured mulberry (*Morus spp.*) trees. The substrate is predominantly large cobbles and boulders, with very little sediment/soil matrix visible on the ground surface. The average width of the site was 17 m, and ranged from 9 to 26 m at each end and in the center of the 200 m transect. The site encompassed 4,500 m^2.

Soil samples were collected from study sites and from reference sites using MULTI INCREMENT® sampling (MIS) methodology. This method was designed to obtain representative estimates of the average contaminant concentrations in the study site and control the sampling fundamental error and the grouping and segregation errors associated with measuring soil concentrations. Soil MIS represents surface soils of the 0 to 15 cm (0 to 6 in.) depth interval using a systematic random design across a 200 m (656 ft) long investigation area. The contaminants detected in these soil samples include inorganics (metals), organic compounds including polycyclic aromatic hydrocarbons, phthalates and chlorinated pesticides, and radionuclides. Inorganics in riparian soil in 100-K that had been identified as COPECs in the RCBRA and that were evaluated further were: arsenic, barium, cadmium, chromium, Cr(VI), copper, lead, mercury and zinc. Organic compounds detected in 100-K soils were not identified as COPECs in the RCBRA with the exception of bis-2-ethylhexyl phthalate. Radionuclides were not identified as COPECs, however radionuclides detected in riparian area soils included C-14, Cs-137, Sr-90, Tc-99 (in a single replicate), and uranium isotopes. Biota sampling conducted in these sites is described in detail in the RCBRA (DOE/RL-2007-21). Assessment of ecological risks based on the biota sampling is described further in Section L4 of this appendix.

In addition, analytical chemistry data is available for riparian soils from in process sampling as summarized below:

- **100-K-63**. In process pothole sampling was conducted at the 100-K-63 waste site. Twenty discrete samples were collected from the surface, 1.5, 3, and 4.6 m (5, 10, and 15 ft) bgs. A recent report summarized analytical results, field observations and protectiveness evaluations based on sampling and radiological surveys in the excavated area and potholing locations within the 100-K-63 waste site (RA-00287, Rev. 0). Contaminants reflected in these soil samples include metals and radionuclides.

Nearshore study sites sampled as part of the RCBRA in 2005 were located within three key contaminant plumes originating from Hanford Site operations (Cr(VI) at 100-K and 100-D, Sr-90 at 100-N, and uranium at the 300 Area, DOE RL 2005-42 Rev. 1). Ten additional study sites sampled in 2006 were located in selected regions where Hanford's legacy materials were known or suspected to have been deposited. Study sites located in proximity to 100-K are summarized below:

- **Nearshore Sites Cr1 Through Cr4.** Chromium sites 1 through 4 were located between 100-K and 100-N in permanently inundated areas where groundwater upwelling was also known to persist. The river was relatively symmetric with no adjacent islands or backwater channels there. The substrate consisted of moderately embedded gravels and cobbles. All sites were located in areas with no current when flows were about 70,000 cfs. Chromium site 3 was subjected to slightly more river flow than the other sites described in this area. The low water velocities at this site coupled with highly embedded substrates made it unsuitable as steelhead spawning habitat.

- **Nearshore Site 2c.** This investigation area was located about 100 m downstream of the old Hanford townsite water intake (historic pump house), and just upstream of a major peninsula known as Coyote Rapids. This site was also located in a highly depositional river environment. The substrate generally consisted of gravels that were heavily embedded. A small macrophyte population persisted near this area.

Sediment, porewater and surface water samples were collected from these sites. Further discussion of these data is incorporated into the data evaluation presented below in Section L3. Biota sampling performed at these sites is described in the RCBRA (DOE/RL-2007-21). Assessment of ecological risks based on the biota sampling results is described in Section L4. Contaminants detected principally in the sediment, porewater and surface water samples were inorganics (metals and anions) and radionuclides.

L2.4 Routes of Potential Exposure and Receptors

A range of terrestrial and aquatic plant, invertebrate and wildlife species were considered in the ecological risk assessment conducted as part of the RCBRA (DOE/RL-2007-21), and are discussed in detail in that ecological risk assessment.

L3 Data Evaluation

Analytical data collected from the riparian and nearshore zones were evaluated to focus on the contaminants of potential ecological concern that could be related to Hanford Site operations. This data evaluation encompassed groundwater (characterized by near river wells and aquifer tubes), seeps/springs, surface water, sediments, and riparian soil data, obtained from a range of Hanford Site sources. These sources included groundwater-monitoring activities documented in the Annual Groundwater Monitoring reports, sampling of sediments, seeps and surface water conducted as part of the Surface Environmental Surveillance Program (SESP), and sampling of sediments, pore water, surface water and riparian soils conducted as part of the RCBRA.

These analytical results were compared with ecological benchmarks and criteria to confirm whether or not these should be identified as contaminants of potential ecological concern (COPECs). Analytical data quality, in particular filtered versus unfiltered analyses of water samples, was taken into consideration in making the comparisons with benchmarks and criteria. The spatial relationships of contaminants concentrations in surface water, pore water and groundwater were evaluated to address considerations of whether or not detected contaminants were related to Hanford Site operations (i.e. originated from upland groundwater sources) or reflected ambient background conditions.

L3.1 Data Sources and Data Processing

The data set used in this evaluation consisted of sampling and analysis data collected from 25 nearshore monitoring wells, 69 aquifer tubes, five seep/spring locations, four pore water locations, and five surface water locations within the boundaries of the 100-KR-4 OU. A list of the nearshore wells and aquifer tubes used in this evaluation is provided in L-1 (Tables are located at the end of this appendix). Riparian soil, sediment, seep/spring, pore water and surface water sampling locations are based on sampling locations identified in the RCBRA. Figure L-5 shows the sampling locations for each type of water media, riparian soil, and sediment.

The data set used in this evaluation was obtained from the Hanford Environmental Information System (HEIS) and included the following types of information:

- Analytical results from both unfiltered and filtered samples
- Data qualification and data validation flags, including rejected results
- Results for a given analyte reported by more than one analytical method
- Parent, field duplicate, and field split sample results

The analytical data were processed to eliminate unusable results and thus identify one set of results per sampling location and date of sample collection. The data processing steps are described in the following subsections.

L3.1.1 Laboratory and Data Validation Flags

Analytical data are received from the laboratory with data qualification flags. Validation qualifiers are assigned during the data validation process. The following rules determine how flagged and/or qualified sample results are used in identifying contaminants of interest.

- Sample results flagged with a “U” qualifier, or combination of qualifiers that include a “U,” such as a “UJ,” are considered nondetected results.
- Sample results without a “U” qualifier are considered detected concentrations, including results with no qualifier or with a “J” qualifier.
- Sample results that are rejected and flagged with an “R” qualifier are not used in identifying COPCs.

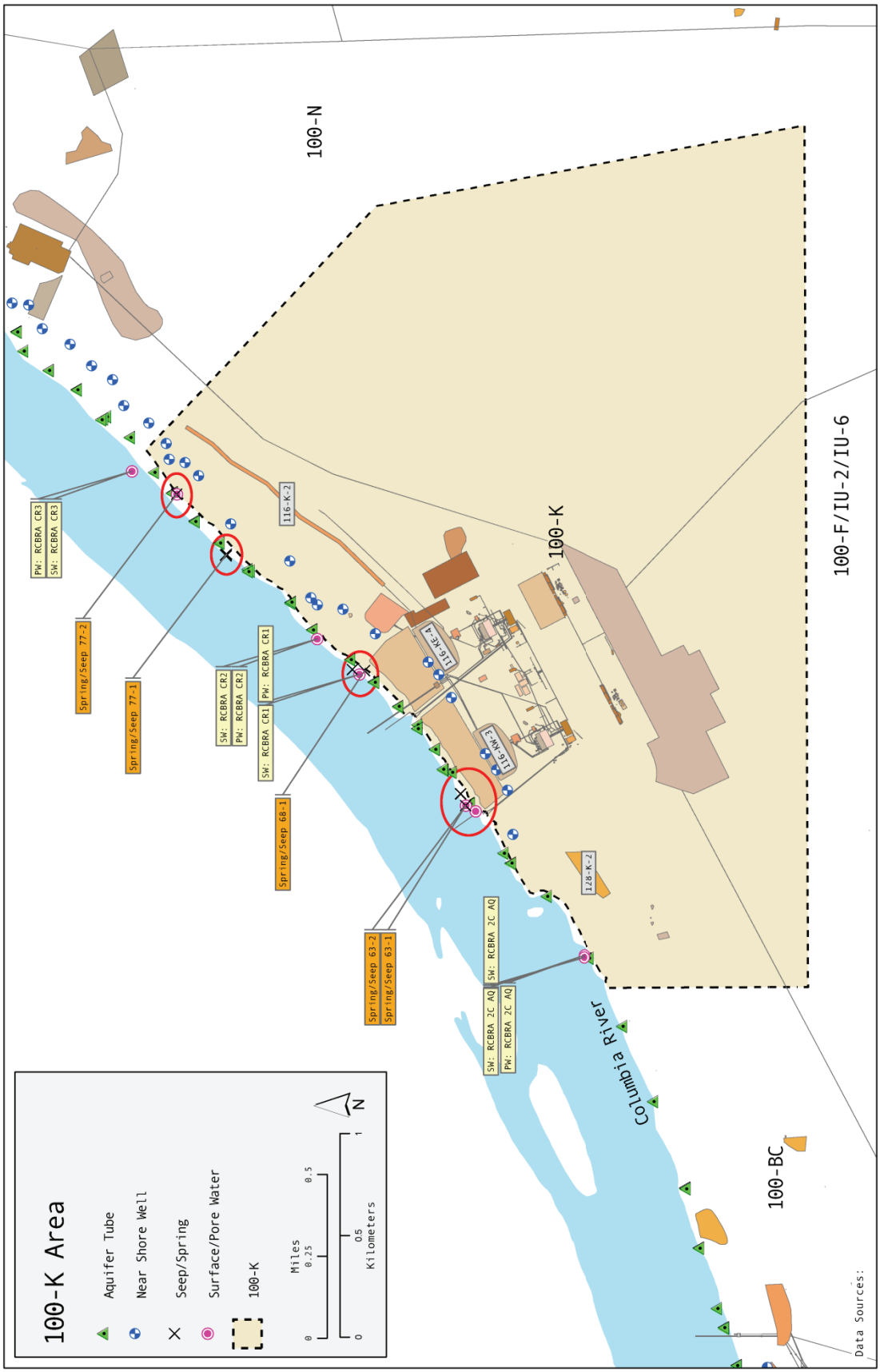

Figure L-5. Sampling Locations Evaluated in the Riparian/NearShore Conceptual Site Model

L3.1.2 Analytes Reported by Numerous Analytical Methods

Often analytes are reported by more than one analytical method, resulting in multiple results for the same analyte from the same location and sample date. When analytes are reported by more than one analytical method for a sample, the set of data that best represents the actual concentration is retained. For example, the gamma spectroscopy method provides concentration results for the uranium isotopes; however, uranium concentrations reported by a uranium-isotope-specific method are preferred.

L3.1.3 Field Duplicate and Field Split Results

Field quality control samples (field duplicates and field splits) are collected in the field and analyzed by the laboratory as unique samples. The parent sample and quality control samples are collected from the same location (i.e., monitoring well) on the same date, resulting in more than one sample per location/date. The following criteria are used to reduce multiple sample results for an individual location/date to a single result:

- If two or more detections exist, the maximum concentration is used.
- If at least one detection and one or more nondetected results exist, the detected concentration is used.
- If only (two or more) nondetected results exist, the lowest detection limit is used.

L3.2 Identification of Ecological Screening Levels

Ecological screening levels (ESLs) were used for comparison with analytical results in water, soil, and sediment to identify COPECs, and were derived from available sources of chemical-specific ARARs, readily available soil screening levels, or site-specific preliminary remediation goals (PRGs) for plants and invertebrates or wildlife. All summary of ESLs for water are listed in Table L-2. A summary of the Tier 1 and Tier 2 plant/invert ESLs are listed in Tables L-3 and L-4. A summary of the Tier 1 and Tier 2 wildlife ESLs are listed in Tables L-5 and L-6. A summary of the sediment ESLs is provided in Table L-7.

L3.2.1 Ecological Screening Levels for Water

The sources of ESLs from federal regulations are listed below:

- National Recommended Water Quality Criteria, aquatic water quality criteria (AWQC) established under Section 304 of the *Clean Water Act of 1977*
- 40 CFR 131 water quality standards for states not complying with Section 303 of the *Clean Water Act of 1977*
- DOE-STD-1153-2002, "A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota"

The sources of the ESLs from Washington State regulations are listed below:

- WAC 173-340-730, "Surface Water Cleanup Standards"
- WAC 173-201A, "Water Quality Standards for Surface Waters of the State of Washington"

Derivation of State of Washington surface water cleanup levels in provided in a separate calculation brief (ECF-100NPL-10-0463, *Environmental Calculation of WAC 173-340-730 Method B Surface Water Cleanup Levels for the 100 Areas and 300 Area*).

The ESL was selected from lowest of the available values for protection of aquatic receptors, as listed above.

L3.2.2 Ecological Screening Levels for Soil

The sources of the plant/invert ESLs and PRGs and wildlife ESLs and PRGs are described below.

Plant/invert ESLs. Ecological Screening Levels (ESLs) for the protection of plants and soil invertebrates have previously been documented in *Tier 1 Risk Based Values Protective of Ecological Receptors at the Hanford Site* (CHPRC-00784). Typically, ESLs represent ecological risk-based concentrations that are developed to reflect site-specific conditions using information obtained from the literature. Insufficient site-specific information for the effects of nonradioactive contaminants to specific plants and insects found at Hanford was available to develop a traditional PRG. Hence, generic screening levels were recommended as ESLs. The ESLs are drawn from the following published sources:

- EPA's Ecological Soil Screening Levels http://www.epa.gov/ecotox/ecossl/ (OSWER Directive 9285.7-55)
- Washington Department of Ecology's (Ecology) Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals (Washington Administrative Code [WAC] 173-340 Table 749-3) http://www.ecy.wa.gov/pubs/wac173340.pdf
- Oak Ridge National Laboratory (ORNL) screening benchmarks:
  - *Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision* (ES/ER/TM-85/R3). Available at: http://www.esd.ornl.gov/programs/ecorisk/benchmark_reports.html
  - *Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision* (ES/ER/TM-126/R2). Available at: http://www.esd.ornl.gov/programs/ecorisk/benchmark_reports.html
- BCGs for radionuclides that are presented in DOE-STD-1153-2002, *A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota*

Plant/invert PRGs. PRGs for plant and invertebrates are documented in *Tier 2 Terrestrial Plant and Invertebrate Preliminary Remediation Goals (PRGs) for Nonradionuclides for Use at the Hanford Site* (ECF-HANFORD-11-0158). When appropriate these represent thresholds of toxicity to plants and invertebrates at Hanford and are reflective of site-specific conditions. The most appropriate value for each COPEC was selected from the following:

- Site-specific NOECs from samples collected in 2011as documented in ECF-HANFORD-11-0158
- Site-specific NOECs from samples collected in 2006 and 2007 as documented in the RCBRA (DOE/RL-2007-21)
- Site-specific PRGs for lead and arsenic presented in *Ecological Soil Screening Levels for Arsenic and Lead in the Tacoma Smelter Plume Footprint and Hanford Site Old Orchards* (Ecology Publication 11-03-006)
- Hanford background:
  - *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes* (DOE/RL-92-24)

- *Hanford Site Background: Part 2, Soil Background for Radionuclides* (DOE/RL-96-12)
- *Hanford Site Background: Evaluation of Existing Soil Radionuclide Data* (DOE/RL-95-55)
- *A Review of Metal Concentrations Measured in Surface Soil Samples Collected on and Around the Hanford Site* (PNNL-18577)
- *Soil Background for Interim use at the Hanford Site* (ECF-HANFORD-11-0038)

- EPA's Ecological Soil Screening Levels http://www.epa.gov/ecotox/ecossl/ (OSWER Directive 9285.7-55)
- Washington Department of Ecology's (Ecology) Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals (Washington Administrative Code [WAC] 173-340 Table 749-3) http://www.ecy.wa.gov/pubs/wac173340.pdf.
- Oak Ridge National Laboratory (ORNL) screening benchmarks:
  - *Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision* (ES/ER/TM-85/R3). Available at: http://www.esd.ornl.gov/programs/ecorisk/benchmark_reports.html.
  - *Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Processes: 1997 Revision (ES/ER/TM-126/R2)*. Available at: http://www.esd.ornl.gov/programs/ecorisk/benchmark_reports.html.

Wildlife ESLs and PRGs. ESLs and PRGs for wildlife both represent sets of site-specific values derived in order to be protective of wildlife that are found or that represent feeding guilds at the Hanford site. Both sets rely on desktop foodchain models that are effectively equivalent to those published by EPA (OSWER Directive 9285.7-55) and Ecology ([WAC] 173-340 Table 749-3). The ESLs use a combination of literature based information for the species specifically found at Hanford, whereas the PRGs rely on the same information while incorporating site-specific tissue data into the foodchain models.

L3.2.3 Ecological Screening Levels for Sediment

ESLs for sediment are the same as those used in the RCBRA and in the *Columbia River Component Risk Assessment Volume 1: Screening Level Ecological Risk Assessment* (DOE/RL-2010-117, Volume 1, Part 1, Draft A) and come from a variety of published sources. When available, preference was given to values published in the *Development of Freshwater Sediment Quality Values for Use in Washington State. Phase II Report: Development and Recommendation of SQVs for Freshwater Sediments in Washington State* (Ecology Publication No. 03-09-088). Other sources were used when a value was not available in this report with preference toward specificity toward datasets from the Pacific Northwest.

L3.3 Identification of Contaminants of Interest - Water

After extracting and processing the 100-KR-4 OU groundwater analytical data set from HEIS, a multi-step screening process was used to identify initial contaminants of interest. The steps were:

- Apply exclusion criteria
- Identify nondetected analytes
- Identify analytes with maximum detected concentrations less than their respective ESLs
- Identify analytes with maximum detected concentrations greater than their respective ESLs

L3.3.1 Apply Exclusion Criteria

The first step in the contaminant of interest identification process is to apply certain exclusion criteria. Analytes that meet the exclusion criteria were eliminated as contaminants of interest. The only exclusion criterion used was the absence of toxicity information for an analyte—if there were no ESLs available as described in Section L3.2.1, that analyte was not carried into the next step of the data evaluation process. Analytes that did not meet any of the exclusion criteria were carried forward into the next step.

The analytes in near-shore groundwater wells, aquifer tubes, pore water samples, seep/spring samples and surface water samples that do not have ESLs are summarized in Tables L-8 through L-12. Sampling dates, minimum and maximum detected concentrations, and minimum and maximum MDLs, are also provided in Tables L-8 through L-12.

L3.3.2 Identify Nondetected Analytes

The next step in the groundwater contaminant of interest identification process was to identify nondetected analytes. Chemicals and radionuclides that have been analyzed for, but not detected in any sample (collected from appropriate locations, with adequate detection limits), are eliminated as contaminants of interest. All analytes detected at least once were carried forward to the next step.

Analytes that were not detected in near-river groundwater wells, aquifer tubes, pore water, seep/spring or surface water samples are summarized in Tables L-13 through L-17.

L3.3.3 Identify Analytes with Maximum Detected Concentrations Less Than ESLs

This step identifies analytes with maximum concentrations less than ESLs. In this screening step, the maximum concentration of each analyte detected in groundwater was compared to its ESL, to identify analytes not likely to contribute significantly to overall risk. If the maximum detected concentration of an analyte was less than its ESL, the analyte was eliminated as an contaminant of interest.

A list of analytes with maximum concentrations less than their ESL is presented in Tables L-18 through L-22. With regard to groundwater, the focus of this analysis has been on analytes that are not identified as the contaminants that have already been identified for remedial alternatives evaluation in the FS, including chromium (and hexavalent chromium), carbon-14, tritium, trichloroethene, nitrate and strontium-90. Further discussion of these contaminants is provided in Section 4.3.2 of the RI/FS Report.

L3.3.4 Identify Analytes with Maximum Detected Concentrations Greater Than ESLs

This step identifies analytes with maximum concentrations greater than their respective ESLs. Such analytes are likely to contribute to overall risk. If the maximum detected concentration of an analyte is greater than its ESL, the analyte is identified as an COPC. Analytes with maximum detected concentrations greater than their respective ESLs are described below. Table L-23 through L-26 provides a summary of the analytes with maximum detected concentrations greater than their respective ESL for each water media. Table L-27 summarizes the results for all water media and all contaminants of interest described below.

L3.3.4.1 Aluminum

Groundwater. Aluminum was detected in 27 of 55 unfiltered groundwater samples (49 percent frequency). Aluminum concentrations in unfiltered samples ranged from 13 to 1,160 µg/L. Of the 27 detected results, 10 samples were reported with concentrations greater than the ESL of 87 µg/L.

Aluminum was detected in 17 of 60 filtered groundwater samples (28 percent frequency). Aluminum concentrations in filtered samples ranged from 5.8 to 695 µg/L. Of the 17 detected results, 4 samples were reported with concentrations greater than the ESL of 87 µg/L. The filtered samples with aluminum

concentrations greater than the ESL were collected from different locations. Additionally, two of the concentrations greater than the ECL have a "C" flag indicating that aluminum was reported in the sample and the laboratory method blank.

All MDLs for the filtered and nonfiltered samples are less than the ESL.

Aquifer Tubes. Aluminum was detected in 17 of 22 unfiltered aquifer tube samples (77 percent frequency). Aluminum concentrations in unfiltered samples ranged from 10 to 957 µg/L. Of the 17 detected results, seven samples were reported with concentrations greater than the ESL of 87 µg/L. All MDLs are less than the ESL.

Pore Water. Aluminum was detected in two of seven unfiltered pore water samples (29 percent frequency). Aluminum concentrations in unfiltered samples ranged from 29 to 164 µg/L. Of the two detected results, one sample was reported a concentration greater than the ESL of 87 µg/L. The concentration greater than the ESL was flagged with a "C" indicating that aluminum was detected in the sample and the laboratory method blank.

Seeps/Springs. Aluminum was detected in all unfiltered seep/spring samples (3 samples). Aluminum concentrations in unfiltered samples ranged from 61 to 4,800 µg/L. Of the three detected results, two samples were reported with concentrations greater than the ESL of 87 µg/L. Aluminum was detected at 100-K Spring (4800 µg/L) and SK-077-1 (343 µg/L).

Surface Water. Aluminum was not reported for surface water samples.

L3.3.4.2 Cadmium

Groundwater. Cadmium was detected in one of 150 unfiltered groundwater samples (0.7 percent frequency). One sample was reported with a cadmium concentration of 1.3 µg/L, which is greater than the ESL of 0.25 µg/L. The MDL concentrations range from 0.1 to 4.0 µg/L. Most MDLs are greater than the ESL of 0.25 µg/L, indicating that the method cannot reliably detect cadmium at concentrations at or below the ESL.

Aquifer Tubes. Cadmium was not reported for aquifer tube samples.

Pore Water. Cadmium was detected in one of seven unfiltered pore water samples (14 percent frequency). Cadmium was detected once at a concentration of 0.72 µg/L in sample J11218. MDL concentrations range from 0.30 to 0.70 µg/L, which are greater than the ESL of 0.25 µg/L. Cadmium in the unfiltered sample is reported at a concentration less than the Hanford Site background level of 0.92 µg/L.

Seeps/Springs. Cadmium was detected in 11 of 14 unfiltered seep/spring samples (79 percent frequency). Cadmium concentrations in unfiltered samples ranged from 0.0082 to 2.0 µg/L. Of the 11 detected results, two samples were reported with concentrations greater than the ESL of 0.25 µg/L. Cadmium was detected at 100-K Spring (2 µg/L) and SK-077-1 (0.36 µg/L).

Surface Water. Cadmium was not reported for surface water samples.

L3.3.4.3 Chromium

Groundwater. Chromium was detected in 124 of 168 unfiltered groundwater samples (74 percent frequency). Chromium concentrations in unfiltered samples ranged from 2.4 to 966 µg/L. Of the 124 detected results, 14 samples were reported with concentrations greater than the ESL of 65 µg/L.

Chromium was detected in 126 of 173 filtered groundwater samples (73 percent frequency). Chromium concentrations in filtered samples ranged from 0.68 to 187 µg/L. Of the 126 detected results, 18 samples were reported with concentrations greater than the ESL of 65 µg/L.

All MDLs for the filtered and nonfiltered samples are less than the ESL.

Aquifer Tubes. Chromium was detected in 39 of 84 unfiltered aquifer tube samples (46 percent frequency). Chromium concentrations in unfiltered samples ranged from 1.0 to 72 µg/L. Of the 39 detected results, two samples were reported with results greater than the ESL of 65 µg/L.

Chromium was detected in 26 of 69 filtered aquifer tube samples (38 percent frequency). Chromium concentrations in filtered samples ranged from 0.51 to 80 µg/L. Of the 26 detected results, three samples were reported with concentrations greater than the ESL of 65 µg/L. All MDLs are less than the ESL.

Pore Water. Chromium was not reported for pore water samples.

Seeps/Springs. Chromium was detected in 13 of 14 unfiltered seep/spring samples (93 percent frequency). Chromium concentrations in unfiltered samples ranged from 1.2 to 66 µg/L. Of the 13 detected results, one sample was reported with a concentration greater than the ESL of 65 µg/L. Chromium was detected at 100-K Spring (66 µg/L).

Surface Water. Chromium was not reported for surface water samples.

L3.3.4.4 Copper

Groundwater. Copper was detected in 36 of 150 unfiltered groundwater samples (24 percent frequency). Copper concentrations in unfiltered samples ranged from 0.28 to 2,030 µg/L. Of the 36 detected results, 11 samples were reported with concentrations greater than the ESL of 9.0 µg/L.

Copper was detected in 32 of 170 filtered groundwater samples (19 percent frequency). Copper concentrations in filtered samples ranged from 0.21 to 63 µg/L. Of the 32 detected results, five samples were reported with concentrations greater than the ESL of 9.0 µg/L. Copper was detected at monitoring well 199-K-138 (11 µg/L), monitoring well 199-K-132 (12 µg/L), and 199-K-20 (9.7 µg/L). Each result was flagged with a "C" qualifier indicating that the analyte was detected in the sample and the laboratory method blank.

All MDLs for the filtered and nonfiltered samples are less than the ESL.

Aquifer Tubes. Copper was not reported for aquifer tube samples.

Pore Water. Copper was not reported for pore water samples.

Seeps/Springs. Copper was detected in 13 of 14 unfiltered seep/spring samples (93 percent frequency). Copper concentrations in unfiltered samples ranged from 0.45 to 37 µg/L. Of the 13 detected results, one sample was reported with a concentration greater than the ESL of 9.0 µg/L. Copper was detected at 100-K Spring (37 µg/L).

Surface Water. Copper was not reported for surface water samples.

L3.3.4.5 Cr(VI)

Groundwater. Cr(VI) was detected in 1,725 of 1,810 unfiltered groundwater samples (95 percent frequency). Cr(VI) concentrations in unfiltered samples ranged from 1 µg/L to 155 µg/L. Of the 1,725 detected results, 1,517 samples were reported with results greater than the ESL of 10 µg/L.

Cr(VI) was detected in 246 of 317 filtered groundwater samples (78 percent frequency). Cr(VI) concentrations in filtered samples ranged from 2 µg/L to 203 µg/L. Of the 246 detected results, 197 samples were reported with concentrations greater than the ESL of 10 µg/L.

All MDLs for the filtered and nonfiltered samples are less than the ESL.

Aquifer Tubes. Cr(VI) was detected in 150 of 219 unfiltered aquifer tube samples (68 percent frequency). Cr(VI) concentrations in unfiltered samples ranged from 2.1 to 82 µg/L. Of the 150 detected results, 86 samples were reported with concentrations greater than the ESL of 10 µg/L.

Cr(VI) was detected in 106 of 158 filtered aquifer tube samples (67 percent frequency). Cr(VI) concentrations in filtered samples ranged from 2.0 to 80 µg/L. Of the 106 detected results, 46 samples were reported with concentrations greater than the ESL of 10 µg/L.

All MDLs for filtered and unfiltered samples are less than the ESL

Pore Water. Cr(VI) was detected in nine of 11 unfiltered pore water samples (82 percent frequency). Cr(VI) concentrations in unfiltered samples ranged from 3.0 µg/L to 42 µg/L. Of the nine detected results, six samples were reported with concentrations greater than the ESL of 10 µg/L.

Seeps/Springs. Cr(VI) was not reported for seep/spring samples.

Surface Water. Cr(VI) was not reported for surface water samples.

L3.3.4.6 Iron

Groundwater. Iron was detected in 63 of 134 unfiltered groundwater samples (47 percent frequency). Iron concentrations in unfiltered samples ranged from 18 to 4,540 µg/L. Of the 63 detected results, six samples were reported with concentrations greater than the ESL of 1,000 µg/L. All MDLs are less than the ESL.

Aquifer Tubes. Iron was detected in 39 of 61 unfiltered aquifer tube samples (64 percent frequency). Iron concentrations in unfiltered samples ranged from 20 µg/L to 10,200 µg/L. Of the 39 detected results, three samples were reported with concentrations greater than the ESL of 1,000 µg/L. Iron concentrations greater than the ESL were reported at 15-M (10,200 µg/L), C6256 (1,620 µg/L), and C7643 (1,380 µg/L).

Iron was detected in 10 of 54 filtered aquifer tube samples (19 percent frequency). Iron concentrations in filtered samples ranged from 9.7 µg/L to 2,324 µg/L. Of the 10 detected results, two samples were reported with concentrations greater than the ESL of 1,000 µg/L. Iron concentrations greater than the ESL were reported at 15-M at concentrations of 2,340 µg/L and 2,160 µg/L.

All MDLs for filtered and unfiltered samples are less than the ESL.

Pore Water. Iron was not reported for pore water samples.

Seeps/Springs. Iron was detected in all unfiltered seep/spring samples (3 samples). Iron concentrations in unfiltered samples ranged from 123 to 9,300 µg/L. Of the three detected results, one sample was reported with a concentration greater than the ESL of 1,000 µg/L. Iron was detected at 100-K Spring (9300 µg/L).

Surface Water. Iron was not reported for surface water samples.

L3.3.4.7 Lead

Groundwater. Lead was detected in three of 42 unfiltered groundwater samples (7.1 percent frequency). Lead concentrations in unfiltered samples ranged from 0.088 to 37 µg/L. Of the three detected results, two samples were reported with concentrations greater than the ESL of 2.1 µg/L. Samples analyzed by Method 6010 have MDLs that range from 1.3 to 42 µg/L, indicating that Method 6010 cannot reliably

detect lead at concentrations at or below the ESL. The two samples reporting concentrations greater than the ESL were analyzed by Method 6010 and both detected concentrations are reported within the range of detection limits for the method. Samples analyzed by Method 200.8 have MDLs that range from 0.1 to 0.2 µg/L. One detection (0.088 µg/L) was reported by Method 200.8 at location 199-K-130, no other rounds were analyzed by this method at this well.

Lead was detected in three of 57 filtered groundwater samples (5.3 percent frequency). Lead concentrations in filtered samples ranged from 0.38 to 34 µg/L. Of the three detected results, two samples reported concentrations greater than the ESL of 2.1 µg/L. Samples analyzed by Method 6010 have MDLs that range from 1.3 to 42 µg/L, indicating that Method 6010 cannot reliably detect lead at concentrations at or below the ESL. One sample reporting a concentration greater than the ESL were analyzed by Method 6010 and the detected concentration (34.3 µg/L) is reported within the range of detection limits for the method. Samples analyzed by Method 200.8 have MDLs that range from 0.1 to 0.2 µg/L. The other detected concentration (2.8 µg/L) greater than the ESL was reported by Method 200.8 at location 199-K-32A, three other rounds were analyzed at this well by Method 200.8 and they were all nondetected concentrations at 0.2 ug/L.

Aquifer Tubes. Lead was not reported for aquifer tube samples.

Pore Water. Lead was not reported for pore water samples.

Seeps/Springs. Lead was detected in all unfiltered seep/spring samples (11 samples). Lead concentrations in unfiltered samples ranged from 0.0078 to 5.7 µg/L. Of the 11 detected results, one sample was reported with a concentration greater than the ESL of 2.1 µg/L. Lead was detected at 100-K Spring 77-1 (5.7 µg/L).

Surface Water. Lead was not reported for surface water samples.

L3.3.4.8 Mercury

Groundwater. Mercury was detected in one of 36 filtered groundwater samples (2.8 percent frequency). Mercury was detected once at a concentration greater than the ESL of 0.012 µg/L. Mercury was reported at monitoring well 199-K-117A at a concentration of 0.075 µg/L and flagged with a "B", indicating the analyte was detected at the contract required detection limit but the measured concentration is below the practical quantitation limit (PQL). Three other sampling rounds were reported at monitoring well 199-K-117A, and all samples were reported as nondetect concentrations at 0.1 µg/L. MDLs concentrations range from 0.050 to 0.1 µg/L. All MDLs are greater than the ESL.

Aquifer Tubes. Mercury was not reported for aquifer tube samples.

Pore Water. Mercury was not reported for pore water samples.

Seeps/Springs. Mercury was detected in all unfiltered seep/spring samples (nine samples). Mercury concentrations in unfiltered samples ranged from 0.00074 µg/L to 0.014 µg/L. Of the nine detected results, one sample was reported with a concentration greater than the ESL of 0.012 µg/L. Mercury was detected at 100-K Spring 77-1 (0.014 µg/L).

Surface Water. Mercury was not reported for surface water samples.

L3.3.4.9 Methoxychlor

Groundwater. Methoxychlor was not reported for groundwater samples.

Aquifer Tubes. Methoxychlor was not reported for aquifer tube samples.

Pore Water. Methoxychlor was detected in one of six unfiltered pore water samples (17 percent frequency). Methoxychlor was detected once at a concentration of 1.0 µg/L, which is greater than the ESL of 0.030 µg/L. MDL concentrations range from 0.050 to 0.62 µg/L, which are greater than the ESL of 0.030 µg/L.

Seeps/Springs. Methoxychlor was not reported for seep/spring samples.

Surface Water. Methoxychlor was not reported for surface water samples.

L3.3.4.10 Nickel

Groundwater. Nickel was detected in 29 of 133 unfiltered groundwater samples (22 percent frequency). Nickel concentrations in unfiltered samples ranged from 0.58 to 96 µg/L. Of the 29 detected results, 2 samples were reported with concentrations greater than the ESL of 52 µg/L. Nickel was detected at monitoring well 199-K-132 at a concentration of 96 µg/L; nickel was reported in 17 other sampling rounds with seven detected concentrations that range from 4 to 18 µg/L (less than the ESL) and 10 nondetects (less than the ESL). Nickel was detected at monitoring well 199-K-144 at a concentration of 83 µg/L; nickel was reported in two other sampling rounds with nondetect concentrations less than the ESL.

Aquifer Tubes. Nickel was not reported for aquifer tube samples.

Pore Water. Nickel was not reported for pore water samples.

Seeps/Springs. Nickel was not reported for seep/spring samples.

Surface Water. Nickel was not reported for surface water samples.

L3.3.4.11 Selenium

Groundwater. Selenium was detected in 30 of 56 filtered groundwater samples (54 percent frequency). Selenium concentrations in filtered samples ranged from 0.48 to 52 µg/L. Of the 30 detected results, one sample was reported at a concentration greater than the ESL of 5.0 µg/L. Selenium was detected at monitoring well 199-K-117A at a concentration of 52 µg/L by Method 6010. MDLs for Method 6010 range from 2.7 to 45 µg/L. Selenium was reported in three other sampling rounds at monitoring well 199-K-117A by Method 6010 as nondetects or a concentration below the ESL. Selenium was reported in six other sampling rounds at monitoring well 199-K-117A by Method 200.8 as nondetects or a concentration below the ESL. MDLs for Method 200.8 range from 0.3 to 0.6 µg/L.

Aquifer Tubes. Selenium was not reported for aquifer tube samples.

Pore Water. Selenium was not reported for pore water samples.

Seep/Spring. Selenium was not reported for seep/spring samples.

Surface Water. Selenium was not reported for surface water samples.

L3.3.4.12 Silver

Groundwater. Silver was detected in 10 of 150 unfiltered groundwater samples (6.7 percent frequency). Silver concentrations in unfiltered samples ranged from 0.056 to 26 µg/L. Of the 10 detected results, nine samples were reported with concentrations greater than the ESL of 2.6 µg/L. Detected concentrations greater than the ESL were reported by Method 6010. MDLs for Method 6010 range from 1.4 µg/L to 11 µg/L; most MDLs are greater than the ESL indicating that Method 6010 cannot reliably detect silver at concentrations at or below the ESL of 2.6 µg/L.

Silver was detected in 9 of 170 filtered groundwater samples (5.3 percent frequency). Silver concentrations in filtered samples ranged from 5.6 to 28 µg/L. All samples were reported with concentrations greater than the ESL of 2.6 µg/L and were analyzed by Method 6010. MDLs for Method 6010 range from 2.2 to 11 µg/L; most MDLs are greater than the ESL indicating that Method 6010 cannot reliably detect silver at concentrations at or below the ESL of 2.6 µg/L.

Aquifer Tubes. Silver was detected in one of 69 filtered aquifer tube samples (1.5 percent frequency). Silver was detected once at 19-D at a concentration of 7.2 µg/L, which is greater than the ESL of 2.6 µg/L. All MDLs are less than the ESL.

Pore Water. Silver was not reported for pore water samples.

Seep/Spring. Silver was not reported for seep/spring samples.

Surface Water. Silver was not reported for surface water samples.

L3.3.4.13 Zinc

Groundwater. Zinc was detected in 70 of 133 unfiltered groundwater samples (53 percent frequency). Zinc concentrations in unfiltered samples ranged from 0.68 to 916 µg/L. Of the 70 detected results, seven samples were reported with concentrations greater than the ESL of 91 µg/L.

Zinc was detected in 77 of 153 filtered groundwater samples (50 percent frequency). Zinc concentrations in filtered samples ranged from 1.8 to 547 µg/L. Of the 77 detected results, one sample reported a concentration greater than the ESL of 91 µg/L. Zinc was detected at a concentration of 547 µg/L at monitoring well 199-K-146. Two other sampling rounds were analyzed at monitoring well 199-K-146 and reported concentrations were less than the ESL.

All MDLs for the filtered and nonfiltered samples are less than the ESL.

Aquifer Tubes. Zinc was detected in 18 of 63 aquifer tube unfiltered samples (29 percent frequency). Zinc concentrations in unfiltered samples ranged from 1.7 to 94 µg/L. Of the 18 detected results, one sample was reported with a concentration greater than the ESL of 91 µg/L. Zinc was detected at a concentration of 94 µg/L at 15-M. All MDLs are less than the ESL.

Pore Water. Zinc was not reported for pore water samples.

Seeps/Springs. Zinc was detected in all unfiltered seep/spring samples (14 samples). Zinc concentrations in unfiltered samples ranged from 1.3 to 410 µg/L. Of the 14 detected results, one sample was reported with a concentration of 410 µg/L, which is greater than the ESL of 91 µg/L. Zinc was detected at 100-K Spring (410 µg/L).

Surface Water. Zinc was not reported for surface water samples.

L3.4 Identification of Contaminants of Interest – Riparian Soil

Contaminants of interest were identified using the same process that was used for water.

L3.4.1 Apply Exclusion Criteria

The analytes in riparian soil that do not have plant/invert screening level are summarized in Tables L-28 and analytes that do not have a wildlife screening level are summarized in Table L-29. Sampling dates, minimum and maximum detected concentrations, and minimum and maximum MDLs, are also provided in Tables L-28 and L-29.

L3.4.2 Identify Nondetected Analytes

Analytes that were not detected in riparian soil samples and have a plant/invertebrate soil screening level are summarized in Table L-30. Analytes that were not detected in riparian soil samples but have a wildlife soil screening level are summarized in Table L-31. Sampling dates, minimum and maximum detected concentrations, and minimum and maximum MDLs, are also provided in Tables L-30 and L-31.

L3.4.3 Identify Analytes with Maximum Detected Concentrations Less Than ESLs

A summary of the riparian soil analytes that do not exceed the lowest Plant/Invertebrate ESLs is provided in Table L-32. A summary of the riparian soil analytes that do not exceed the lowest wildlife ESLs is provided in Table L-33. Sampling dates, minimum and maximum detected concentrations, and minimum and maximum MDLs, are also provided in Tables L-32 and L-33.

L3.4.4 Identify Analytes with Maximum Detected Concentrations Greater Than ESLs

This step identifies analytes with maximum concentrations greater than their plant/invert or wildlife ESLs. A summary of the riparian soil analytes that exceed the lowest Plant/Invertebrate ESLs is provided in Table L-34. Table L-34 shows that concentrations of eight metals are greater than their respective plant/invertebrate ESL. The following metals had at least one sample result greater than the screening value:

- Boron, chromium, lead, lithium, manganese, selenium, vanadium, and zinc.

The metals listed above that exceed the plant/invertebrate ESL are subsequently compared to the plant/invertebrate PRGs, the results of this comparison are shown in Table L-35. As shown in Table L-35, no metals concentrations are greater than the plant/invertebrate PRG values.

A summary of the riparian soil analytes that exceed the lowest wildlife ESLs is provided in Table L-36. Table L-36 shows that concentrations of five metals and one radioisotope are greater than their respective wildlife ESL. The following analytes had at least one sample result greater than the screening value:

- Cadmium, carbon-14, chromium, lead, vanadium, and zinc.

The analytes listed above that exceed the wildlife ESL are subsequently compared to the wildlife PRGs, the results of this comparison are shown in Table L-37. As shown in Table L-37, vanadium and carbon-14 are greater than the wildlife PRG values.

Vanadium was measured in ten riparian soil samples with concentrations ranging between 37 mg/kg and 46 mg/kg. Vanadium concentrations measured in riparian soil are less than the Hanford Site 90th percentile background value of 85 mg/kg.

Carbon-14 was detected in three of 10 soil samples at concentrations that range between 12 pCi/g and 112 pCi/g. Carbon-14 was detected above the wildlife PRG of 32 pCi/g at the Riparian #5 sample location. A discussion of the ecological risk considerations associated with this result is presented in Section L4.

L3.5 Identification of Contaminants of Interest – Nearshore Sediment

Contaminants of interest were identified using the same process that was used for water.

L3.5.1 Apply Exclusion Criteria

The analytes in sediment that do not have ecological screening level are summarized in Table L-38. Sampling dates, minimum and maximum detected concentrations, and minimum and maximum MDLs, are also provided in Table L-38.

L3.5.2 Identify Nondetected Analytes

Analytes that were not detected in sediment samples are summarized in Table L-39. Sampling dates and minimum and maximum MDLs, are also provided in Table L-39.

L3.5.3 Identify Analytes with Maximum Detected Concentrations Less Than ESLs

A summary of the sediment analytes that do not exceed the sediment screening levels is provided in Table L-40. Sampling dates, minimum and maximum detected concentrations, and minimum and maximum MDLs, are also provided in Table L-40.

L3.5.4 Identify Analytes with Maximum Detected Concentrations Greater Than ESLs

This step identifies analytes with maximum concentrations greater than sediment screening levels. A summary of the sediment analytes that exceed the sediment screening levels is provided in Table L-41. Table L-41 shows that concentrations of five analytes are greater than their sediment screening value and are listed below:

- Antimony, cadmium, endosulfan I, total petroleum hydrocarbons-diesel range, and zinc.

In at least one sediment sample, there were concentrations of one chlorinated pesticide (endosulfan I), TPH-diesel, and metals (antimony, cadmium, and zinc) detected at concentrations higher than an ecological screening level. The presence of endosulfan I is not a contaminant associated with Hanford Site operations, and is not likely to be associated with overland flow from upland waste site areas; in addition, chlorinate pesticides generally are not mobile in soil. Antimony was detected once and this concentration (2.3 mg/kg) is higher than the ecological screening value of 0.4 mg/kg. Cadmium was detected in five of 11 samples with concentrations ranging between 0.43 mg/kg and 1.6 mg/kg. Three of the 11 sediment samples were reported with cadmium concentrations greater than the ecological screening value of 0.6 mg/kg. Zinc was detected in all 11 samples with concentrations ranging between 38 mg/kg and 378 mg/kg. Six of the 11 sediment samples were reported with zinc concentrations greater than the ecological screening value of 140 mg/kg . A discussion of the ecological risk considerations associated with this result is presented in Section L4.

L3.6 Data Evaluation Summary

A range of inorganic and radionuclide contaminants were detected in near-river groundwater samples collected from the 100-KR-4 OU. In many cases, these contaminants also could be detected in aquifer tube, pore water, spring/seep and surface water samples. In most cases, the analytical results that were most relevant to assessing aquatic water quality (i.e. from filtered analyses) were at concentrations below aquatic criteria. In other cases where concentrations higher than aquatic criteria were observed, these

results were associated with analytical data quality issues such as presence of contamination in blank samples, or elevated detection limits relative to the criteria.

The analytical results addressed in this evaluation did not provide evidence that contaminants from Hanford Site soils or groundwater or associated with Hanford Site operations evaluated in this appendix have potentially been discharged to riparian or nearshore media, or to the Columbia River. A more detailed discussion of potential ecological risks in the context of abiotic and biotic media evaluations and potential contributions to these risks from the Hanford Site is presented in Section L.4.

L4 Summary of Ecological Risks

Ecological risks in riparian and nearshore areas were assessed as part of the RCBRA (DOE/RL-2007-21). This risk assessment chapter incorporates the results from the assessment of ecological risks in the riparian and nearshore areas based on the data evaluation and calculations performed in the RCBRA.

The RCBRA evaluated risks to an array of assessment endpoints using multiple measures of exposure, effect, and ecosystem/receptor characteristics at representative nearshore study sites. The study sites were selected to represent locations that may be adjacent to or directly affected by known contaminated media (groundwater seeps and springs, soil, sediment).

L4.1 Risks to Terrestrial Plants

Concentrations of some COPECs in riparian soil exceeded literature-based plant benchmark concentrations (i.e., ESLs), indicating that effects in plants might occur. Soil concentrations for arsenic, chromium, lead, vanadium, and zinc were greater than benchmarks, suggesting a potential for adverse effects. However, none of the concentrations exceed Hanford Site-specific PRGs. Also, other lines of evidence obtained through seven different measures in bioassay testing indicate that COPECs may not adversely affect riparian plants, including those at the rare plant sites which performed better than bioassays from reference soils. Bioassays showed no differences in plant growth between study sites and reference sites. Some COPECs were detected in plant tissues, but the concentrations of the COPECs did not differ between study sites and reference sites. Similar to the upland plant data, COPEC concentrations found in riparian plant tissues did not correlate to those in riparian soil. Therefore, although soil concentrations are greater than plant benchmark for some COPECs, the weight attributed to this line of evidence is low and benchmark HQ results do not overwhelm the conclusions of the other lines of evidence. Based on this analysis, there are no COPECs in riparian soils that warrant further evaluation in the FS, based on risks to terrestrial plants.

L4.2 Risks to Aquatic Plants

Potential effects on aquatic plants were evaluated through results of a bioassay in sediment and comparison of sediment and pore water concentrations to benchmarks. For the River Corridor as a whole, sediment concentrations were greater than benchmarks for eight COPECs (antimony, barium, cadmium, chromium, manganese, phosphorous, selenium, and zinc), and this information suggests a potential for adverse effects. Pore water concentrations at study sites were greater than the water standards or criteria for five COPECs (aluminum, cadmium, chromium, Cr(VI), and lead). Risks to aquatic plants based on toxicity testing showed some relationships with confounding factors and some COPECs. Nevertheless, there were clear measures of exposure (i.e. accumulation into plants), primarily for inorganic COPECs that were detected in pore water and sediment. Of the key plume contaminants, only Cr(VI) had concentrations of ecological relevance in the nearshore environment. Laboratory bioassays (i.e., toxicity tests) were conducted with field-collected sediments. No risks to aquatic plants were noted based on

toxicity testing. Cr(VI) in groundwater in 100-K, which represents a potential source for pore water concentrations that exceed water quality criteria, warrants further evaluation in the FS.

L4.3 Risks to Terrestrial Invertebrates

Concentrations of some COPECs in riparian soil exceeded literature-based benchmarks protective of terrestrial invertebrates (i.e., ESLs); in 100-K, concentrations of zinc were higher than the benchmark value for protection of terrestrial invertebrates. However, none of the concentrations exceed Hanford Site-specific PRGs. Terrestrial invertebrate tissue concentrations, which provide an indication of contaminant uptake and bioavailability, were measured at River Corridor study sites and reference locations. Statistical differences in tissue concentrations of zinc in terrestrial organisms were noted between River Corridor and reference study sites; this relationship is based on data across the entire River Corridor, and should not be inferred as a relationship that is specific for 100-K. However, there is insufficient evidence for COPECs in general of a correlation between tissue concentrations in terrestrial invertebrates and concentrations in soil (DOE/RL-2007-21). Based on this analysis, there are no COPECs in riparian soil for terrestrial invertebrates warranting further evaluation in the FS based on risks to terrestrial invertebrates.

L4.4 Risks to Aquatic Invertebrates

The primary lines of evidence used to evaluate risks to aquatic invertebrates are field surveys, the results of bioassays, and comparison of sediment and water concentrations to benchmarks.

L4.4.1 Abiotic Media Concentrations Compared to Literature Values

For the River Corridor as a whole, sediment concentrations were greater than ESLs for eight COPECs (antimony, barium, cadmium, chromium, manganese, phosphorous, selenium, and zinc), and this information suggests a potential for adverse effects. For sediment sites collected within the 100-K nearshore, concentrations were greater than ESLs for five COECS (antimony, cadmium, endosulfan I, total petroleum hydrocarbon-diesel, and zinc). Pore water concentrations at study sites were greater than the water standards or criteria for five COPECs (aluminum, cadmium, chromium, Cr(VI), and lead). However, there are significant uncertainties relative to any of the conclusions based on pore water sampling. Further, all of these abiotic measurements represent a single point measurement within a dynamic river system with daily and seasonal fluctuations and flow volumes that can shift the composition of the substrates that were sampled. Thus, exceedances should not be ignored. The interpretation of pore water results as an indication of adverse affects to aquatic invertebrates is the same as that for aquatic plants, given that the ESLs are protective of both plants and aquatic invertebrates; Cr(VI) in groundwater in 100-K, which represents a potential source for pore water concentrations that exceed water quality criteria, warrants further evaluation in the FS.

Given the uncertainty with representativeness mentioned above, a more detailed discussion of each of these 5 COECs in 100-K nearshore sediment is presented below. I

Antimony – Antimony was detected in one of 11 samples within the 100-K nearshore sediments. The one detected concentration exceeds the ESL. The groundwater/seep/porewater analysis showed no substantial concentrations of antimony, thus concentrations were not likely from suspended solids in groundwater. However, Table 5-29 of the RCBRA indicates that antimony concentrations across the Hanford Site riparian soils were not statistically different from riparian reference soil concentrations. The one sediment sample exceeding the ESL is closest to the K-63 basin. Recent sampling at 18 locations and two to three sample depths per location reveal only 2 detects (0.316 and 0.746 mg/kg) out of 58 samples, both at 5 feet bgs and both lower than the maximum sediment reference concentration (0.98, non detect) presented in

Table 6-40 of the RCBRA. With these detections being at depth and no groundwater contribution being identified, there is no complete pathway for observed antimony concentrations in sediment from the 100-K riparian area.

Cadmium – Three 100-K riparian sediment samples exceed the cadmium ESL. Two in the vicinity of riparian soil sample Rip-5 and one near the K-63 basin. The groundwater/seep/porewater analysis showed no substantial concentrations of cadmium, thus concentrations were not likely from suspended solids in groundwater. Table 5-29 of the RCBRA indicates that cadmium concentrations across the Hanford Site riparian areas are greater than riparian reference soil concentrations. From the recent sampling in the K-63 basin, none of the samples are above the maximum sediment reference in Table 6-40 of the RCBRA (2.2 mg/kg). The cadmium concentration at Rip-5 (2.1 mg/kg) near the other two sediment samples exceeding the cadmium ESL is also below the maximum reference sediment concentration of 2.2 mg/kg and below the riparian soil concentration of 2.5 mg/kg just upstream of the 100- K riparian area. There is no complete or significant pathway for observed cadmium concentrations in sediment from the 100-K riparian area.

Endosulfan I – Endosulfan I was detected in two of four samples in 100-K riparian sediments. One detected concentration exceeds the ESL. The groundwater/seep/porewater analysis showed no substantial concentrations of endosulfan I, which is not mobile in soil or groundwater. The one sediment sample exceeding the ESL is closest to the Rip-5 soil sample. The soil concentration at Rip-5 (0.0019 mg/kg) was below the maximum sediment reference concentration (0.0027 mg/kg) in Table 6-40 of the RCBRA. The RCBRA concluded Hanford Site nearshore sediments were not statistically different from reference sediment concentrations. Further, the value used as an ESL, a value published by the Dutch Ministry of Housing, Spatial Planning, and the Environment, is not specifically derived based on toxicity to species of the northwest and is only appropriate in this case for the purposes of screening. While the exact source of the endosulfan I is unclear, with no known Hanford operation use, and lower concentrations than upstream, and no clear North American or pacific northwest ESL available, the exceedance does not warrant further consideration. There is no complete or significant pathway for observed endosulfan I concentrations in sediment from the 100-K riparian area.

TPH-Diesel – TPH diesel was detected in two of four samples in 100-K riparian sediments. The detection limits of the non-detects and the two detected concentrations all exceed the ESL of 1.75 mg/kg. Three of the samples were flagged with a B for having the analyte also detected in the blank. The detection of 7.9 mg/kg with no associated detection in blanks was collected at station 2c Aq, an upstream sediment sample. Since the only detect was at the upstream sediment location, there is no indication of a complete exposure pathway for TPH-diesel from the 100-K area to aquatic invertebrates in nearshore sediments.

Zinc – Six 100-K riparian sediment samples exceed the zinc ESL, two in the vicinity of riparian soil sample Rip-5 and one near the K-63 basin. Samples exceeding the ESL are located in the vicinity of the K-63 basin and the Rip 5 soil sampling location. The groundwater/seep/porewater analysis showed no substantial concentrations of zinc, thus concentrations were not likely from suspended solids in groundwater. Table 6-40 of the RCBRA indicates that zinc sediment concentrations across the Hanford Site riparian areas are not statistically different from sediment reference concentrations. From the recent sampling in the K-63 basin, 1sample out 58 at 5 feet bgs (494 mg/kg) is above the maximum sediment reference concentration in the RCBRA (358 mg/kg). The zinc concentration at Rip-5 (316 mg/kg) is also below the maximum reference sediment concentration of 358 mg/kg and the riparian soil maximum concentration of 389 mg/kg. It should also be noted that this is a highly mineralized area and there are no clearly defined sources of zinc. Given the concentrations of zinc observed in the riparian soils and that the the only concentration above background is at depth but no groundwater contribution has been identified,

there is no complete or significant pathway for observed zinc concentrations in sediment from the 100-K riparian area.

L4.4.2 Direct Toxicity Measures

Risks to aquatic macroinvertebrates based on toxicity testing showed some relationships with confounding factors and some COPECs. Histopathology measures differed in study sites compared to reference sites; these measures also showed some negative relationships with COPECs. However, sediment bioassays at site 2c selected to represent 100-K showed no difference in amphipod (*hyalella azteca*) growth relative to reference sites, and the survival at Site 2c was higher than that for the reference sites. Likewise, survival and reproduction tests on water fleas in pore water showed no difference at five sites representing 100-K (2c, Cr1, Cr2, and Cr4) relative to reference sites. Clams were also monitored for survival. There was a statistical decrease in survival at study sites compared to reference sites, but there was no correlation of clam survival with COPECs. Together these measures do not indicate substrate concentrations were toxic. However, they do represent only a snapshot in time and do not represent all seasonal conditions and river stage fluctuations.

L4.4.3 Community Structure Measures

Key community metrics do not suggest that contaminant-related impacts to benthic macroinvertebrates are evident in aquatic study sites as a group, as evident by the comparison of EPT data form study sites relative to reference sites. Most of the aquatic community measures did not differ between the study sites and reference sites. There were exceptions among the large number of aquatic community measures evaluated, but the agreement among measures was weak and the biological significance to populations is not evident.

L4.4.4 Measures of Exposure

There were clear measures of exposure (accumulation), primarily for inorganic COPECs that were detected in water, sediment, and tissues. There were no statistically significant correlations between COPEC concentrations in pore water or sediment with tissues of aquatic organisms, indicating a lack of significant COPEC bioaccumulation. Further, no tissue effect levels for COPECs in invertebrate tissue were exceeded.

Most histopathology measures of clams and mussels showed no significant differences between study sites and reference. However, there were some exceptions, COPEC concentrations generally did not correlate with differences in histopathology measures.

L4.4.5 Weight of Evidence

As stated previously, both the abiotic and biotic measures collected for the RCBRA represent only a snapshot in time and do not represent all seasonal conditions and river stage fluctuations. Abiotic measurements do exceed literature based screening values for some COPECs, and this line of evidence is generally given the lowest weight given the lack of site-specificity in the literature-based values. Though biological measures give a different perspective than the chemistry, given the limited data set and the uncertainty with full representation of seasonal measurements, the results of the chemistry cannot be ignored.

Of the key groundwater plume contaminants investigated, only Cr(VI) had concentrations of ecological relevance in the nearshore environment for 100-K area. Cr(VI) in groundwater in 100-K, which represents a potential ongoing source for porewater concentrations that exceed water quality criteria, and therefore warrants further evaluation in the FS. This conclusion is applicable to both aquatic invertebrates and amphibians.

Risk to Wildlife. For riparian soils, field ecological measures of the small mammal community were developed as qualitative information on the status of these populations. Estimated dietary contaminant exposures and biological concentrations in bird or small mammal tissues are compared to ecological effects levels established for dietary ingestion or related to tissue residues. For selected COPECs (cadmium, chromium, lead, selenium, and PCBs), measured tissue concentrations in small mammals trapped in River Corridor study sites were not greater than reference areas, and were less than available tissue effect levels. Dietary exposure to terrestrial birds and mammals estimated using wildlife exposure models, estimated for riparian concentrations across the River Corridor indicated potential exposure higher than LOAEL-based benchmark values for copper, selenium, vanadium, and zinc. However, with the exception of zinc, concentrations of these metals in soil in 100-K fall within Hanford Site wide background, and therefore should not warrant further evaluation in the FS. PRGs for wildlife exposure to zinc presented in the RI/FS report were compared with the highest zinc concentration in 100-K riparian soil. The results from this comparison show that zinc concentrations fall below the PRG. Therefore, zinc concentrations in riparian soil do not warrant further evaluation in the FS based on risks to wildlife.

Most concentrations detected in riparian soils within the 100-K fell below ecological screening levels (ESLs, in this case specifically soil screening levels [SSLs] described earlier) and all but one were below PRGs, and do not warrant further evaluation in the FS. Carbon-14 was not identified as a COPC in the RCBRA based on comparison with the BCG. However, development of the Tier 1 concentrations for wildlife for radionuclides relied on more current bioaccumulation data, which resulted in lower concentrations compared with BCGs (CHPRC-00784). The carbon-14 concentration, analyzed using MULTI INCREMENT® sampling results reflects an average concentration of 112 pCi/g collected throughout a one hectare plot. This concentration is above the site-specific thresholds for developed for Hanford for seven of eight wildlife species. The one hectare plot is a small area compared with the home range of these wildlife receptors. However, the exposure concentration represents an average of nearly one hundred samples indicating that a potential source may exist in the area. Therefore, carbon-14 is a COEC for the riparian soils in the100-K and should be addressed further in the FS

Within the RCBRA, information on dietary contaminant exposures were also compared to ecological effects levels for diet to assess risks to birds or mammals potentially exposed to contaminants in nearshore sediments, biota, and water. Only chromium was considered a final COEC. However, the single study site with which this risk was associated is not within the 100-K nearshore environment.

L4.5 Risk to Fish

Pore water concentrations at study sites were greater than the water standards or criteria for five COPECs (aluminum, cadmium, chromium, Cr(VI), and lead). However, most other lines of evidence suggest that risk to fish in the Columbia River is not unacceptable. In general across the River Corridor, fish were smaller (in length and mass) at study sites relative to reference sites. There were no strong trends in fish histopathological observations between those collected at study sites and those from reference site locations. No tissue COPECs were correlated with histopathological endpoints associated with adverse effects at study sites. There were no exceedances of tissue effects levels for nearshore aquatic COPECs measured in fish tissue. In addition, evidence of greater contaminant uptake in fish from study sites was not apparent for most COPECs and tissues. For 100-K, Cr(VI) in groundwater, which represents a potential source for porewater concentrations that exceed water quality criteria, warrants further evaluation in the FS. Cr(VI) concentrations in multiple nearshore wells and aquifer tubes exceed ambient water quality criteria suggesting an ongoing source. Other COPECs detected in pore water above ambient water criteria do not appear to be issues in groundwater or aquifer tubes suggesting that 100-K is not the source of observed elevated concentrations.

L5 Conclusions

The purpose for preparing this CSM was to address, on a reactor decision area basis, the potential for Hanford Site contaminants in soil or groundwater to migrate to riparian or nearshore areas at concentrations that could be of concern for ecological receptors. This CSM supplements the analysis of River Corridor-wide ecological risks presented in the ecological risk assessment of the RCBRA (DOE/RL-2007-21). The RCBRA identified on a site-wide basis some contaminants of ecological concern that warranted further evaluation. Based on the results of the further evaluation contained in this CSM, with the exception of Cr(VI), detected concentrations of contaminants in riparian or nearshore groundwater, seeps/springs, aquifer tubes, and pore water are not reliably detectable at levels of ecological concern, or are not associated with contaminanted groundwater resulting from Hanford Site operations. The concentration of Carbon-14 across a one hectare MULTI INCREMENT® sample exposure area may pose a risk to wildlife and requires further delineation. For purposes of alternatives evaluation in the 100-K FS, Cr(VI) in groundwater and carbon-14 in soil should be considered the only COECs.

There are uncertainties in this evaluation related to analytical data quality. With the exception of most recently collected analytical data in groundwater, analytical either methods had MDLs that were close to or higher than aquatic criteria; when methods with adequate detection limits are used, the results show that contaminant concentrations are less than aquatic criteria. In many cases where analytical results were higher than aquatic criteria, it was determined that the results were based on unfiltered samples. Unfiltered analytical results are inappropriate for comparison with aquatic criteria; in general, filtered analytical results were less than aquatic criteria. In some cases where concentrations were reported higher than aquatic criteria, further evaluation of the data revealed it was qualified because of the presence of blank contamination. The analytical detection limit considerations and data quality issues further support the conclusion that contaminants concentrations in water were not reliably detected above levels of ecological significance.

L6 References

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Table L-1. Summary of Near Shore Wells and Aquifer Tubes for the 100-KR-4 Groundwater Operable Unit.

Near Shore Wells				
199-K-31	199-K-178	199-K-199	199-K-114A	199-K-130
199-K-138	199-K-32A	199-K-20	199-K-113A	199-K-148
199-K-132	199-K-144	199-K-117A	199-K-146	199-K-131
199-K-185	199-K-145	199-K-115A	199-K-129	199-K-149
199-K-181	199-K-198	199-K-161	199-K-147	199-K-150
Aquifer Tubes				
B8151	C7641	C6246	B8212	C6261
B8149	C7642	C6247	C6254	C4335
B8154	C7643	B8206	C6255	C4331
B8153	C6239	B8205	C6256	C4330
B8152	C6240	C4344	C6257	B8526
C6236	C6241	C4343	C6258	B8527
C6237	C6242	C4342	C6259	B8223
C6238	C6243	C6248	B8215	C4333
B8156	C6244	C6249	B8214	C4334
C4341	B8204	C6250	C4338	C4332
C4340	C4329	C6251	C4337	B8228
C4339	C4327	C6252	C4336	B8227
B8162	C4328	C6253	B8218	B8226
B8161	C6245	B8213	C6260	

Table L-2. Summary of Ecological Screening Values for Surface Water

CAS #	Analyte Name	Alternate Analyte Name	Units	National Recommended Water Quality Criteria[a]		40 CFR 131 Water Quality Standards[b]		WAC 173-201A[c]	DOE-STD-1153-2002[d]	Final Surface Water Cleanup Level	Final Surface Water Cleanup Level Basis
				Freshwater CMC (Acute)	Freshwater CCC (Chronic)	Freshwater CMC (Acute)	Freshwater CCC (Chronic)	Water Quality Standards for Surface Waters of WA	RESRAD Biota Calculator - Level 1		
71-55-6	1,1,1-Trichloroethane	Trichloroethane;1,1,1-	--	--	--	--	--	--	--	--	--
79-34-5	1,1,2,2-Tetrachloroethane	tetrachloroethane;1,1,2,2-	--	--	--	--	--	--	--	--	--
79-00-5	1,1,2-Trichloroethane	trichloroethane;1,1,2-	--	--	--	--	--	--	--	--	--
75-34-3	1,1-Dichloroethane	dichloroethane;1,1-	--	--	--	--	--	--	--	--	--
75-35-4	1,1-Dichloroethene	Dichloroethene;1,1-	--	--	--	--	--	--	--	--	--
120-82-1	1,2,4-Trichlorobenzene	trichlorobenzene;1,2,4-	--	--	--	--	--	--	--	--	--
95-50-1	1,2-Dichlorobenzene	dichlorobenzene;1,2- (ortho-Dichlorobenzene)	--	--	--	--	--	--	--	--	--
107-06-2	1,2-Dichloroethane	dichloroethane;1,2-	--	--	--	--	--	--	--	--	--
540-59-0	1,2-Dichloroethene (Total)	dichloroethylene,1,2- (mixed isomers)	--	--	--	--	--	--	--	--	--
78-87-5	1,2-Dichloropropane	dichloropropane;1,2-	--	--	--	--	--	--	--	--	--
541-73-1	1,3-Dichlorobenzene	dichlorobenzene;1,3	--	--	--	--	--	--	--	--	--
106-46-7	1,4-Dichlorobenzene	dichlorobenzene;1,4- (para-Dichlorobenzene)	--	--	--	--	--	--	--	--	--
93-76-5	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	Trichlorophenoxyacetic Acid, 2,4,5-	--	--	--	--	--	--	--	--	--
93-72-1	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	Trichlorophenoxypropionic acid, -2,4,5	--	--	--	--	--	--	--	--	--
95-95-4	2,4,5-Trichlorophenol	Trichlorophenol;2,4,5-	--	--	--	--	--	--	--	--	--
88-06-2	2,4,6-Trichlorophenol	Trichlorophenol2,4,6-	--	--	--	--	--	--	--	--	--
94-82-6	2,4-DB(4-(2,4-Dichlorophenoxy)butanoic acid)	Dichlorophenoxy)butyric Acid, 4-(2,4-	--	--	--	--	--	--	--	--	--
120-83-2	2,4-Dichlorophenol	dichlorophenol;2,4-	--	--	--	--	--	--	--	--	--
94-75-7	2,4-Dichlorophenoxyacetic acid	Dichlorophenoxy Acetic Acid, 2,4-	--	--	--	--	--	--	--	--	--
105-67-9	2,4-Dimethylphenol	dimethylphenol;2,4-	--	--	--	--	--	--	--	--	--
51-28-5	2,4-Dinitrophenol	dinitrophenol;2,4-	--	--	--	--	--	--	--	--	--
121-14-2	2,4-Dinitrotoluene	dinitrotoluene;2,4-	--	--	--	--	--	--	--	--	--
606-20-2	2,6-Dinitrotoluene	dinitrotoluene;2,6-	--	--	--	--	--	--	--	--	--
78-93-3	2-Butanone	methyl ethyl ketone (MEK; 2-butanone)	--	--	--	--	--	--	--	--	--
91-58-7	2-Chloronaphthalene	beta-chloronaphthalene	--	--	--	--	--	--	--	--	--
95-57-8	2-Chlorophenol	Chlorophenol;2-	--	--	--	--	--	--	--	--	--
591-78-6	2-Hexanone	HEXANONE;2- [MBK, methyl butyl ketone]	--	--	--	--	--	--	--	--	--
91-57-6	2-Methylnaphthalene	methylnapthalene;2-	--	--	--	--	--	--	--	--	--
95-48-7	2-Methylphenol (cresol, o-)	cresol;o-	--	--	--	--	--	--	--	--	--
88-74-4	2-Nitroaniline	nitroaniline, 2-	--	--	--	--	--	--	--	--	--
88-75-5	2-Nitrophenol	nitrophenol;2-	--	--	--	--	--	--	--	--	--
91-94-1	3,3'-Dichlorobenzidine	dichlorobenzidine;3,3'-	--	--	--	--	--	--	--	--	--
65794-96-9	3+4 Methylphenol (cresol, m+p)	methylphenol,3+4 (cresol, m+p)	--	--	--	--	--	--	--	--	--
99-09-2	3-Nitroaniline	nitroaniline, 3-	--	--	--	--	--	--	--	--	--
72-54-8	4,4'-DDD (Dichlorodiphenyldichloroethane)	ddd	--	--	--	--	--	--	--	--	--
72-55-9	4,4'-DDE (Dichlorodiphenyldichloroethylene)	dde	--	--	--	--	--	--	--	--	--
50-29-3	4,4'-DDT (Dichlorodiphenyltrichloroethane)	ddt	µg/L	1.1	0.0010	1.1	0.0010	0.0010	--	0.0010	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
534-52-1	4,6-Dinitro-2-methylphenol	dinitro-2-methylphenol;4,6-	--	--	--	--	--	--	--	--	--
101-55-3	4-Bromophenylphenyl ether	bromodiphenyl ether;4-	--	--	--	--	--	--	--	--	--
59-50-7	4-Chloro-3-methylphenol	chloro-3-methylphenol;4-	--	--	--	--	--	--	--	--	--
106-47-8	4-Chloroaniline	chloroaniline;p-	--	--	--	--	--	--	--	--	--
7005-72-3	4-Chlorophenylphenyl ether	chlorodiphenyl ether;4-	--	--	--	--	--	--	--	--	--
108-10-1	4-Methyl-2-pentanone	methyl isobutyl ketone	--	--	--	--	--	--	--	--	--
106-44-5	4-Methylphenol (cresol, p-)	cresol;p-	--	--	--	--	--	--	--	--	--
100-01-6	4-Nitroaniline	nitroaniline, 4-	--	--	--	--	--	--	--	--	--
100-02-7	4-Nitrophenol	nitrophenol;4-	--	--	--	--	--	--	--	--	--
83-32-9	Acenaphthene	acenaphthene	--	--	--	--	--	--	--	--	--
208-96-8	Acenaphthylene	acenaphthylene (Not in CLARC database tables; use acenaphthene as surrogate)	--	--	--	--	--	--	--	--	--
67-64-1	Acetone	Acetone	--	--	--	--	--	--	--	--	--
309-00-2	Aldrin	aldrin	µg/L	3.0	--	3.0		0.0019	--	0.0019	WAC 173-201A-Water Quality Standards for Surface Waters of WA
319-84-6	Alpha-BHC	hexachlorocyclohexane;alpha (alpha-BHC, HCH)	--	--	--	--	--	--	--	--	--
5103-71-9	Alpha-Chlordane	Alpha-Chlordane	µg/L	2.4	0.0043	2.4	0.0043	--	--	0.0043	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
7429-90-5	Aluminum	Aluminum (soluable)	µg/L	750	87	--	--	--	--	87	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
120-12-7	Anthracene	anthracene	--	--	--	--	--	--	--	--	--
7440-36-0	Antimony	antimony	--	--	--	--	--	--	--	--	--
12674-11-2	Aroclor-1016	aroclor 1016 (PCB)	µg/L	--	0.014	--	0.014	0.014	--	0.014	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
11104-28-2	Aroclor-1221	aroclor 1221 [PCB]	µg/L	--	0.014	--	0.014	0.014	--	0.014	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
11141-16-5	Aroclor-1232	aroclor 1232 [PCB]	µg/L	--	0.014	--	0.014	0.014	--	0.014	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
53469-21-9	Aroclor-1242	aroclor 1242 [PCB]	µg/L	--	0.014	--	0.014	0.014	--	0.014	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
12672-29-6	Aroclor-1248	aroclor 1248 [PCB]	µg/L	--	0.014	--	0.014	0.014	--	0.014	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
11097-69-1	Aroclor-1254	aroclor 1254 (PCB)	µg/L	--	0.014	--	0.014	0.014	--	0.014	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
11096-82-5	Aroclor-1260	aroclor 1260 (PCB)	µg/L	--	0.014	--	0.014	0.014	--	0.014	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
7440-38-2	Arsenic	arsenic, inorganic	µg/L	340	150	360	190	190	--	150	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
7440-39-3	Barium	Barium	--	--	--	--	--	--	--	--	--
71-43-2	Benzene	Benzene	--	--	--	--	--	--	--	--	--
56-55-3	Benzo(a)anthracene	Benzo(a)anthracene	--	--	--	--	--	--	--	--	--
50-32-8	Benzo(a)pyrene	Benzo(a)pyrene	--	--	--	--	--	--	--	--	--
205-99-2	Benzo(b)fluoranthene	Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--
191-24-2	Benzo(ghi)perylene	BENZO(g,h,i)PERYLENE (using pyrene as a surrogate)	--	--	--	--	--	--	--	--	--

Table L-2. Summary of Ecological Screening Values for Surface Water

CAS #	Analyte Name	Alternate Analyte Name	Units	National Recommended Water Quality Criteria[a]		40 CFR 131 Water Quality Standards[b]		WAC 173-201A[c]	DOE-STD-1153-2002[d]	Final Surface Water Cleanup Level	Final Surface Water Cleanup Level Basis
				Freshwater CMC (Acute)	Freshwater CCC (Chronic)	Freshwater CMC (Acute)	Freshwater CCC (Chronic)	Water Quality Standards for Surface Waters of WA	RESRAD Biota Calculator - Level 1		
207-08-9	Benzo(k)fluoranthene	Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--
7440-41-7	Beryllium	beryllium	--	--	--	--	--	--	--	--	--
319-85-7	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	hexachlorocyclohexane;beta-	--	--	--	--	--	--	--	--	--
108-60-1	Bis(2-chloro-1-methylethyl)ether	bis(2-chloro-1-methyl-ethyl)ether	--	--	--	--	--	--	--	--	--
111-91-1	Bis(2-Chloroethoxy)methane	bis(2-chloroethoxyl)methane	--	--	--	--	--	--	--	--	--
111-44-4	Bis(2-chloroethyl) ether	bis(2-chloroethyl)ether	--	--	--	--	--	--	--	--	--
117-81-7	Bis(2-ethylhexyl) phthalate	bis(2-ethylhexyl) phthalate	--	--	--	--	--	--	--	--	--
7440-69-9	Bismuth	Bismuth	--	--	--	--	--	--	--	--	--
7440-42-8	Boron	Boron	--	--	--	--	--	--	--	--	--
24959-67-9	Bromide	Bromide	--	--	--	--	--	--	--	--	--
75-27-4	Bromodichloromethane	bromodichloromethane	--	--	--	--	--	--	--	--	--
75-25-2	Bromoform	bromoform	--	--	--	--	--	--	--	--	--
74-83-9	Bromomethane	bromomethane	--	--	--	--	--	--	--	--	--
85-68-7	Butylbenzylphthalate	butyl benzyl phthalate	--	--	--	--	--	--	--	--	--
7440-43-9	Cadmium	cadmium	µg/L	2.0	0.25	3.7	1.0	0.91	--	0.25	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
7440-70-2	Calcium	Calcium	--	--	--	--	--	--	--	--	--
86-74-8	Carbazole	carbazole	--	--	--	--	--	--	--	--	--
75-15-0	Carbon disulfide	carbon disulfide	--	--	--	--	--	--	--	--	--
56-23-5	Carbon tetrachloride	carbon tetrachloride	--	--	--	--	--	--	--	--	--
57-74-9	Chlordane	chlordane	µg/L	2.4	0.0043	2.4	0.0043	0.0043	--	0.0043	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
16887-00-6	Chloride	chloride	µg/L	860,000	230,000	--	--	230,000	--	230,000	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
108-90-7	Chlorobenzene	chlorobenzene	--	--	--	--	--	--	--	--	--
75-00-3	Chloroethane	ethyl chloride	--	--	--	--	--	--	--	--	--
67-66-3	Chloroform	chloroform	--	--	--	--	--	--	--	--	--
74-87-3	Chloromethane	chloromethane	--	--	--	--	--	--	--	--	--
7440-47-3	Chromium	chromium (total)	µg/L	570	65	550	180	156	--	65	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
218-01-9	Chrysene	Chrysene	--	--	--	--	--	--	--	--	--
156-59-2	cis-1,2-Dichloroethylene	dichloroethylene;1,2-,cis	--	--	--	--	--	--	--	--	--
10061-01-5	cis-1,3-Dichloropropene	dichloropropene;1,2-,cis	--	--	--	--	--	--	--	--	--
7440-48-4	Cobalt	Cobalt	--	--	--	--	--	--	--	--	--
10198-40-0	Cobalt-60	Cobalt-60	pCi/L	--	--	--	--	--	2.70E+09	2.70E+09	RESRAD Biota Calculator - Level 1
PCB1242/1016	Co-elution of Aroclor 1242 and Aroclor 1016	Co-elution of Aroclor 1242 and Aroclor 1017	--	--	--	--	--	--	--	--	--
7440-50-8	Copper	copper	µg/L	--	9.0	17	11	--	--	9.0	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
57-12-5	Cyanide	cyanide	µg/L	22	5.2	22	5.2	5.2	--	5.2	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
75-99-0	Dalapon	Dalapon	--	--	--	--	--	--	--	--	--
319-86-8	Delta-BHC	hexachlorocyclohexane;delta-	--	--	--	--	--	--	--	--	--
53-70-3	Dibenz[a,h]anthracene	Dibenz[a,h]anthracene	--	--	--	--	--	--	--	--	--
132-64-9	Dibenzofuran	dibenzofuran	--	--	--	--	--	--	--	--	--
124-48-1	Dibromochloromethane	chlorodibromomethane [dibromochloromethane]	--	--	--	--	--	--	--	--	--
1918-00-9	Dicamba	Dicamba	--	--	--	--	--	--	--	--	--
120-36-5	Dichloroprop	Dichloroprop	--	--	--	--	--	--	--	--	--
60-57-1	Dieldrin	dieldrin	µg/L	0.24	0.056	2.5	0.0019	0.0019	--	0.0019	40 CFR 131 Water Quality Standards-Freshwater CCC (Chronic)
84-66-2	Diethylphthalate	diethyl phthalate	--	--	--	--	--	--	--	--	--
131-11-3	Dimethyl phthalate	dimethyl phthalate	--	--	--	--	--	--	--	--	--
84-74-2	Di-n-butylphthalate	di-butyl phthalate	--	--	--	--	--	--	--	--	--
117-84-0	Di-n-octylphthalate	di-n-octyl phthalate	--	--	--	--	--	--	--	--	--
88-85-7	Dinoseb(2-secButyl-4,6-dinitrophenol)	Dinoseb	--	--	--	--	--	--	--	--	--
959-98-8	Endosulfan I	Endosulfan I	µg/L	0.22	0.056	0.22	0.056	--	--	0.056	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
33213-65-9	Endosulfan II	Endosulfan II	µg/L	0.22	0.056	0.22	0.056	--	--	0.056	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
1031-07-8	Endosulfan sulfate	Endosulfan sulfate	--	--	--	--	--	--	--	--	--
72-20-8	Endrin	endrin	µg/L	0.086	0.036	0.18	0.0023	0.0023	--	0.0023	40 CFR 131 Water Quality Standards-Freshwater CCC (Chronic)
7421-93-4	Endrin aldehyde	Endrin aldehyde	--	--	--	--	--	--	--	--	--
53494-70-5	Endrin ketone	Endrin ketone	--	--	--	--	--	--	--	--	--
107-21-1	Ethelyne glycol	Ethelyne glycol	--	--	--	--	--	--	--	--	--
100-41-4	Ethylbenzene	ethylbenzene	--	--	--	--	--	--	--	--	--
15585-10-1	Europium-154	Europium-154	pCi/L	--	--	--	--	--	2.16E+10	2.16E+10	RESRAD Biota Calculator - Level 1
14391-16-3	Europium-155	Europium-155	pCi/L	--	--	--	--	--	2.70E+11	2.70E+11	RESRAD Biota Calculator - Level 1
206-44-0	Fluoranthene	fluoranthene	--	--	--	--	--	--	--	--	--
86-73-7	Fluorene	fluorene	--	--	--	--	--	--	--	--	--
16984-48-8	Fluoride	fluoride (using fluorine)	--	--	--	--	--	--	--	--	--
58-89-9	Gamma-BHC (Lindane)	lindane [gamma-BHC] (see hexachlorocyclohexane)	µg/L	0.95	--	2.0	0.080	0.080	--	0.080	40 CFR 131 Water Quality Standards-Freshwater CCC (Chronic)
12587-46-1	Gross alpha	Gross alpha	--	--	--	--	--	--	--	--	--
12587-47-2	Gross beta	Gross beta	--	--	--	--	--	--	--	--	--
76-44-8	Heptachlor	heptachlor	µg/L	0.52	0.0038	0.52	0.0038	0.0038	--	0.0038	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
1024-57-3	Heptachlor epoxide	Heptachlor epoxide	µg/L	0.52	0.0038	0.52	0.0038	--	--	0.0038	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
118-74-1	Hexachlorobenzene	hexachlorobenzene	--	--	--	--	--	--	--	--	--
87-68-3	Hexachlorobutadiene	hexachlorobutadiene	--	--	--	--	--	--	--	--	--
77-47-4	Hexachlorocyclopentadiene	hexachlorocyclopentadiene	--	--	--	--	--	--	--	--	--
67-72-1	Hexachloroethane	hexachloroethane	--	--	--	--	--	--	--	--	--

Table L-2. Summary of Ecological Screening Values for Surface Water

CAS #	Analyte Name	Alternate Analyte Name	Units	National Recommended Water Quality Criteria[a]		40 CFR 131 Water Quality Standards[b]		WAC 173-201A[c]	DOE-STD-1153-2002[d]	Final Surface Water Cleanup Level	Final Surface Water Cleanup Level Basis
				Freshwater CMC (Acute)	Freshwater CCC (Chronic)	Freshwater CMC (Acute)	Freshwater CCC (Chronic)	Water Quality Standards for Surface Waters of WA	RESRAD Biota Calculator - Level 1		
18540-29-9	Hexavalent Chromium	chromium(VI)	µg/L	16	11	15	10	10	--	10	40 CFR 131 Water Quality Standards-Freshwater CCC (Chronic)
193-39-5	Indeno(1,2,3-cd)pyrene	Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--
15046-84-1	Iodine-129	Iodine-129	pCi/L	--	--	--	--	--	1.08E+12	1.08E+12	RESRAD Biota Calculator - Level 1
7439-89-6	Iron	Iron	µg/L	--	1,000	--	--	--	--	1,000	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
78-59-1	Isophorone	isophorone	--	--	--	--	--	--	--	--	--
7439-92-1	Lead	lead	µg/L	65	2.5	65	2.5	2.1	--	2.1	WAC 173-201A-Water Quality Standards for Surface Waters of WA
7439-93-2	Lithium	Lithium	--	--	--	--	--	--	--	--	--
7439-95-4	Magnesium	Magnesium (Not in CLARC database Tables)	--	--	--	--	--	--	--	--	--
7439-96-5	Manganese	manganese	--	--	--	--	--	--	--	--	--
7439-97-6	Mercury	mercury	µg/L	1.4	0.77	2.1	0.012	0.012	--	0.012	40 CFR 131 Water Quality Standards-Freshwater CCC (Chronic)
72-43-5	Methoxychlor	methoxychlor	µg/L	--	0.030	--	--	--	--	0.030	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
75-09-2	Methylene chloride	methylene chloride	--	--	--	--	--	--	--	--	--
7439-98-7	Molybdenum	molybdenum	--	--	--	--	--	--	--	--	--
108-38-3	m-Xylene	Xylene, m-	--	--	--	--	--	--	--	--	--
91-20-3	Naphthalene	naphthalene	--	--	--	--	--	--	--	--	--
7440-02-0	Nickel	nickel soluble salts	µg/L	470	52	1,400	160	137	--	52	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
14797-55-8	Nitrate	Nitrate	--	--	--	--	--	--	--	--	--
14797-65-0	Nitrite	Nitrite	--	--	--	--	--	--	--	--	--
98-95-3	Nitrobenzene	Nitrobenzene	--	--	--	--	--	--	--	--	--
NO3-N	Nitrogen in Nitrate	Nitrogen in Nitrate	--	--	--	--	--	--	--	--	--
NO2-N	Nitrogen in Nitrite	Nitrogen in Nitrite	--	--	--	--	--	--	--	--	--
NO2+NO3-N	Nitrogen in Nitrite and Nitrate	Nitrogen in Nitrite and Nitrate	--	--	--	--	--	--	--	--	--
621-64-7	n-Nitrosodi-n-dipropylamine	nitroso-di-n-propylamine;N-	--	--	--	--	--	--	--	--	--
86-30-6	n-Nitrosodiphenylamine	nitrosodiphenylamine;N-	--	--	--	--	--	--	--	--	--
95-47-6	o-Xylene	xylene,o-	--	--	--	--	--	--	--	--	--
87-86-5	Pentachlorophenol	pentachlorophenol	µg/L	19	15	20	13	--	--	13	40 CFR 131 Water Quality Standards-Freshwater CCC (Chronic)
%MOISTURE	Percent moisture (wet sample)	Percent moisture (wet sample)	--	--	--	--	--	--	--	--	--
PH	pH Measurement	pH Measurement	--	--	--	--	--	--	--	--	--
85-01-8	Phenanthrene	Phenanthrene	--	--	--	--	--	--	--	--	--
108-95-2	Phenol	Phenol	--	--	--	--	--	--	--	--	--
14265-44-2	Phosphate	Phosphate	--	--	--	--	--	--	--	--	--
7723-14-0	Phosphorus	phosphorus	--	--	--	--	--	--	--	--	--
PO4-P	Phosphorus in phosphate	Phosphorus in phosphate	--	--	--	--	--	--	--	--	--
13981-16-3	Plutonium-238	Plutonium-238	--	--	--	--	--	--	--	--	--
PU-239/240	Plutonium-239/240	Plutonium-239/240	--	--	--	--	--	--	--	--	--
7440-09-7	Potassium	Potassium	--	--	--	--	--	--	--	--	--
129-00-0	Pyrene	pyrene	--	--	--	--	--	--	--	--	--
7782-49-2	Selenium	selenium and compounds	µg/L	--	5.0	20	5.0	5.0	--	5.0	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
7440-21-3	Silicon	Silicon	--	--	--	--	--	--	--	--	--
7440-22-4	Silver	silver	µg/L	3.2	--	3.4	--	2.6	--	2.6	WAC 173-201A-Water Quality Standards for Surface Waters of WA
7440-23-5	Sodium	Sodium	--	--	--	--	--	--	--	--	--
7440-24-6	Strontium	strontium	--	--	--	--	--	--	--	--	--
10098-97-2	Strontium-90	Strontium-90	pCi/L	--	--	--	--	--	5.41E+10	5.41E+10	RESRAD Biota Calculator - Level 1
100-42-5	Styrene	styrene	--	--	--	--	--	--	--	--	--
14808-79-8	Sulfate	sulfate	--	--	--	--	--	--	--	--	--
12597-04-5	Sulfide	Sulfide	--	--	--	--	--	--	--	--	--
14133-76-7	Technetium-99	Technetium-99	pCi/L	--	--	--	--	--	2.43E+12	2.43E+12	RESRAD Biota Calculator - Level 1
127-18-4	Tetrachloroethene	tetrachloroethylene	--	--	--	--	--	--	--	--	--
7440-28-0	Thallium	Thallium, soluable salts	--	--	--	--	--	--	--	--	--
7440-29-1	Thorium	Thorium	--	--	--	--	--	--	--	--	--
7440-31-5	Tin	tin	--	--	--	--	--	--	--	--	--
108-88-3	Toluene	Toluene	--	--	--	--	--	--	--	--	--
TPH	Total petroleum hydrocarbons	Total petroleum hydrocarbons	--	--	--	--	--	--	--	--	--
TPHDIESEL	Total petroleum hydrocarbons - diesel range	Total petroleum hydrocarbons - diesel range	--	--	--	--	--	--	--	--	--
TPHGASOLINE	Total petroleum hydrocarbons - gasoline range	Total petroleum hydrocarbons - gasoline range	--	--	--	--	--	--	--	--	--
TPH/OILH	Total petroleum hydrocarbons - motor oil (high boiling)	Total petroleum hydrocarbons - motor oil (high boiling)	--	--	--	--	--	--	--	--	--
8001-35-2	Toxaphene	toxaphene	µg/L	0.73	2.00E-04	0.73	2.00E-04	2.00E-04	--	2.00E-04	National Recommended Water Quality Criteria-Freshwater CCC (Chronic)
156-60-5	trans-1,2-Dichloroethylene	dichloroethylene;1,2-,trans	--	--	--	--	--	--	--	--	--
10061-02-6	trans-1,3-Dichloropropene	dichloropropene;1,3-,trans	--	--	--	--	--	--	--	--	--
79-01-6	Trichloroethene	trichloroethylene (TCE)	--	--	--	--	--	--	--	--	--
10028-17-8	Tritium	Tritium	pCi/L	--	--	--	--	--	5.41E+15	5.41E+15	RESRAD Biota Calculator - Level 1
7440-61-1	Uranium	Uranium	--	--	--	--	--	--	--	--	--
U-233/234	Uranium-233/234	Uranium-233/234	--	--	--	--	--	--	--	--	--
13966-29-5	Uranium-234	Uranium-234	pCi/L	--	--	--	--	--	1.89E+08	1.89E+08	RESRAD Biota Calculator - Level 1
15117-96-1	Uranium-235	Uranium-235	pCi/L	--	--	--	--	--	2.16E+08	2.16E+08	RESRAD Biota Calculator - Level 1
13982-70-2	Uranium-236	Uranium-236	--	--	--	--	--	--	--	--	--
U-238	Uranium-238	Uranium-238	pCi/L	--	--	--	--	--	2.16E+08	2.16E+08	RESRAD Biota Calculator - Level 1
7440-62-2	Vanadium	vanadium	--	--	--	--	--	--	--	--	--
75-01-4	Vinyl chloride	vinyl chloride [chloroethene; 1-]	--	--	--	--	--	--	--	--	--
1330-20-7	Xylenes (total)	Xylenes (total)	--	--	--	--	--	--	--	--	--

Table L-2. Summary of Ecological Screening Values for Surface Water

CAS #	Analyte Name	Alternate Analyte Name	Units	National Recommended Water Quality Criteria[a]		40 CFR 131 Water Quality Standards[b]		WAC 173-201A[c]	DOE-STD-1153-2002[d]	Final Surface Water Cleanup Level	Final Surface Water Cleanup Level Basis
				Freshwater CMC (Acute)	Freshwater CCC (Chronic)	Freshwater CMC (Acute)	Freshwater CCC (Chronic)	Water Quality Standards for Surface Waters of WA	RESRAD Biota Calculator - Level 1		
7440-66-6	Zinc	zinc	µg/L	120	120	110	100	91	--	91	WAC 173-201A-Water Quality Standards for Surface Waters of WA

a. Water quality criteria published under Section 304(a) of the *Clean Water Act of 1977* .
b. Water quality criteria published in 40 CFR 131.36, "Water Quality Standards, Toxics Criteria for Those States Not Complying with Clean Water Act Section 303(c)(2)(B)."
c. WAC 173-201A, "Water Quality Standards for Surface Waters of the State of Washington."
d. DOE-STD-1153-2002, "a GRADED Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota."
CMC = criteria maximum concentration.
CCC = criteria continuous concentration.

Table L-3. Summary of Tier 1 Plant and Soil Invertebrate Ecological Screening Levels

Constituent Group	Soil Constituent	Units	EPA EcoSSLs			ORNL - ES/ER/TM-85/R3, ES/ER/TM-126/R2		DOE BCGs		Washington Dept. of Ecology - MTCA (WAC 173-340, Table 749-3)		Lowest Screening Benchmark by Receptor Type			Background Soil Concentrations [a]	SSL for Plants and Soil Invertebrates [b]	Basis
			Plants	Invertebrate	Reference	Plants	Invertebrate	Terrestrial Plant	Terrestrial Animal	Plant	Soil Biota	Plant	Inverts	Overall Lowest Screening Benchmark			
Radionuclides	Americium-241	pCi/g	---	---	---	---	---	21,500	3,890	---	---	21,500	---	21,500	---	21,500	Benchmark
	Antimony-125	pCi/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Carbon-14	pCi/g	---	---	---	---	---	60,700	4,760	---	---	60,700	---	60,700	---	60,700	Benchmark
	Cesium-134	pCi/g	---	---	---	---	---	1,090	11	---	---	1,090	---	1,090	---	1,090	Benchmark
	Cesium 137	pCi/g	---	---	---	---	---	2,210	21	---	---	2,210	---	2,210	1.1	2,210	Benchmark
	Cobalt-60	pCi/g	---	---	---	---	---	6,130	692	---	---	6,130	---	6,130	0.0084	6,130	Benchmark
	Curium-244	pCi/g	---	---	---	---	---	153,000	4,060	---	---	153,000	---	153,000	---	153,000	Benchmark
	Europium-152	pCi/g	---	---	---	---	---	14,700	1,520	---	---	14,700	---	14,700	---	14,700	Benchmark
	Europium-154	pCi/g	---	---	---	---	---	12,500	1,290	---	---	12,500	---	12,500	0.033	12,500	Benchmark
	Europium-155	pCi/g	---	---	---	---	---	153,000	15,800	---	---	153,000	---	153,000	0.054	153,000	Benchmark
	Hydrogen-3 (tritium)	pCi/g	---	---	---	---	---	1.68E+06	174,000	---	---	1.68E+06	---	1.68E+06	---	1.68E+06	Benchmark
	Neptunium-237	pCi/g	---	---	---	---	---	8,150	3,860	---	---	8,150	---	8,150	---	8,150	Benchmark
	Nickel-63	pCi/g	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Plutonium-238	pCi/g	---	---	---	---	---	17,500	5,270	---	---	17,500	---	17,500	0.0038	17,500	Benchmark
	Plutonium-239/240	pCi/g	---	---	---	---	---	12,700	6,110	---	---	12,700	---	12,700	0.025	12,700	Benchmark
	Radium-226	pCi/g	---	---	---	---	---	288	51	---	---	288	---	288	0.82	288	Benchmark
	Radium-228	pCi/g	---	---	---	---	---	245	44	---	---	245	---	245	---	245	Benchmark
	Strontium 90	pCi/g	---	---	---	---	---	3,580	23	---	---	3,580	---	3,580	0.18	3,580	Benchmark
	Technetium-99	pCi/g	---	---	---	---	---	21,900	4,490	---	---	21,900	---	21,900	---	21,900	Benchmark
	Thorium-232	pCi/g	---	---	---	---	---	23,500	1,510	---	---	23,500	---	23,500	1.3	23,500	Benchmark
	Uranium-234	pCi/g	---	---	---	---	---	51,600	5,130	---	---	51,600	---	51,600	1.1	51,600	Benchmark
	Uranium-235	pCi/g	---	---	---	---	---	27,400	2,770	---	---	27,400	---	27,400	0.11	27,400	Benchmark
	Uranium-238	pCi/g	---	---	---	---	---	15,700	1,580	---	---	15,700	---	15,700	1.1	15,700	Benchmark
Metals	Aluminum	mg/kg	Narrative Statement		OSWER Dir. 9285.7-60	50	---	---	---	50	---	50	---	50	11,800	11,800	Background
	Antimony	mg/kg	---	78	OSWER Dir. 9285.7-61	5.0	---	---	---	5.0	---	5.0	78	5.0	5.2	5.2	Background
	Arsenic, Total all valence states	mg/kg	18	---	OSWER Dir. 9285.7-62	10	60	---	---	---	---	10	60	10	6.5	10	Benchmark
	Arsenic (III)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Arsenic (V)	mg/kg	---	---	---	---	---	---	---	10	60	10	60	10	---	10	Benchmark
	Barium	mg/kg	---	330	OSWER Dir. 9285.7- 63	500	---	---	---	500	---	500	330	330	132	330	Benchmark
	Beryllium	mg/kg	---	40	OSWER Dir. 9285.7- 64	10	---	---	---	10	---	10	40	10	1.5	10	Benchmark
	Bismuth	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Boron	mg/kg	---	---	---	0.50	---	---	---	0.50	---	0.50	---	0.50	---	0.50	Benchmark
	Cadmium	mg/kg	32	140	OSWER Dir. 9285.7-65	4.0	20	---	---	4.0	20	4.0	20	4.0	0.78	4.0	Benchmark
	Chromium (total) [c,d]	mg/kg	---	---	OSWER Dir. 9285.7- 66	1.0	0.40	---	---	42	42	1.0	0.40	0.40	19	19	Background
	Chromium (+3)	mg/kg	---	---	OSWER Dir. 9285.7- 66	1.0	0.40	---	---	42	42	1.0	0.40	0.40	---	0.40	Benchmark
	Chromium (+6)	mg/kg	---	---	OSWER Dir. 9285.7- 66	---	---	---	---	---	---	---	---	---	---	---	---
	Cobalt	mg/kg	13	---	OSWER Dir. 9285.7-67	20	---	---	---	20	---	13	---	13	16	16	Background
	Copper	mg/kg	70	80	OSWER Dir. 9285.7-68	100	50	---	---	100	50	70	50	50	22	50	Benchmark
	Lead	mg/kg	120	1700	OSWER Dir. 9285.7-70	50	500	---	---	50	500	50	500	50	10	50	Benchmark
	Lithium [d]	mg/kg	---	---	---	2.0	---	---	---	35	---	2.0	---	2.0	34	34	Background
	Manganese [d]	mg/kg	220	450	OSWER Dir. 9285.7-71	500	---	---	---	1,100	---	220	450	220	512	512	Background
	Mercury	mg/kg	---	---	---	0.30	0.10	---	---	0.30	0.10	0.30	0.10	0.10	0.33	0.33	Background
	Molybdenum	mg/kg	---	---	---	2.0	---	---	---	2.0	---	2.0	---	2.0	6.0	6.0	Background
	Nickel	mg/kg	38	280	OSWER Dir. 9285.7-76	30	200	---	---	30	200	30	200	30	19	30	Benchmark
	Selenium	mg/kg	0.52	4.1	OSWER Dir. 9285.7-72	1.0	70	---	---	1.0	70	0.52	4.1	0.52	0.78	0.78	Background
	Silver	mg/kg	560	---	OSWER Dir. 9285.7-77	2.0	---	---	---	2.0	---	2.0	---	2.0	0.73	2.0	Benchmark
	Strontium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Thallium	mg/kg	---	---	---	1.0	---	---	---	1.0	---	1.0	---	1.0		1.0	Benchmark
	Tin	mg/kg	---	---	---	50	---	---	---	50	---	50	---	50	---	50	Benchmark
	Uranium	mg/kg	---	---	---	5.0	---	---	---	5.0	---	5.0	---	5.0	3.2	5.0	Benchmark
	Vanadium	mg/kg	---	---	OSWER Dir. 9285.7-75	2.0	---	---	---	2.0	---	2.0	---	2.0	85	85	Background
	Zinc [d]	mg/kg	160	120	OSWER Dir. 9285.7-73	50	200	---	---	86	200	50	120	50	68	68	Background
General	Ammonia/Ammonium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	9.23	9.23	Background

Table L-3. Summary of Tier 1 Plant and Soil Invertebrate Ecological Screening Levels

Constituent Group	Soil Constituent	Units	EPA EcoSSLs			ORNL - ES/ER/TM-85/R3, ES/ER/TM-126/R2		DOE BCGs		Washington Dept. of Ecology - MTCA (WAC 173-340, Table 749-3)		Lowest Screening Benchmark by Receptor Type			Background Soil Concentrations [a]	SSL for Plants and Soil Invertebrates [b]	Basis
			Plants	Invertebrate	Reference	Plants	Invertebrate	Terrestrial Plant	Terrestrial Animal	Plant	Soil Biota	Plant	Inverts	Overall Lowest Screening Benchmark			
Inorganics	Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	100	100	Background
	Cyanide	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Fluoride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	2.81	2.81	Background
	Iodine	mg/kg	---	---	---	4	---	---	---	4	---	4	---	4	---	4	Benchmark
	Nitrate/Nitrite	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	52	52	Background
	Phosphate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	0.785	0.785	Background
	Sulfate/Sulfite	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	237	237	Background
	Total Organic Carbon	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Volatile Organics	1,1-dichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,1-dichloroethene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,1,1-trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,1,2-trichloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,1,2,2-tetrachloroethane	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,2-dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,2-dichloroethane (DCA)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	1,3-dichlorobenzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2-butanone (Methyl Ethyl Ketone/MEK)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2-hexanone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Butanol	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Carbon Tetrachloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Chlorobenzene	mg/kg	---	---	---	---	40	---	---	---	40	---	40	40	---	40	Benchmark
	Chloroform	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Cis-1,2-dichloroethylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Dichloromethane (Methylene Chloride)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Ethyl Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Methyl Isobutyl Ketone	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	n-butyl Benzene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Tetrachloroethylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Toluene	mg/kg	---	---	---	200	---	---	---	200	---	200	---	200	---	200	Benchmark
	Trans-1,2-dichloroethylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Trichloroethylene (TCE)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Xylene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	---	29	OSWER Dir. 9285.7-75	20	---	---	---	20	---	20	29	20	---	20	Benchmark
	Acenaphthylene	mg/kg	---	29	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	29	29	---	29	Benchmark
	Anthracene	mg/kg	---	29	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	29	29	---	29	Benchmark
	Benzo(a)pyrene	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
	Benzo(a)anthracene	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
	Benzo(b)fluoranthene	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
	Benzo(ghi)perylene	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
	Benzo[k]fluoranthene	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
	Chrysene	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
	Dibenz(ah)anthracene	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
	Fluoranthene	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
	Fluorene	mg/kg	---	29	OSWER Dir. 9285.7-75	---	30	---	---	---	30	---	29	29	---	29	Benchmark
	Indeno[1,2,3-cd]pyrene	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
	2-Methylnaphthalene	mg/kg	---	29	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	29	29	---	29	Benchmark
	Naphthalene	mg/kg	---	29	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	29	29	---	29	Benchmark
	Phenanthrene	mg/kg	---	29	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	29	29	---	29	Benchmark
	Pyrene	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
	Total PAHs	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Low MW PAHs [e]	mg/kg	---	29	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	29	29	---	29	Benchmark

Table L-3. Summary of Tier 1 Plant and Soil Invertebrate Ecological Screening Levels

Constituent Group	Soil Constituent	Units	EPA EcoSSLs			ORNL - ES/ER/TM-85/R3, ES/ER/TM-126/R2		DOE BCGs		Washington Dept. of Ecology - MTCA (WAC 173-340, Table 749-3)		Lowest Screening Benchmark by Receptor Type			Background Soil Concentrations [a]	SSL for Plants and Soil Invertebrates [b]	Basis
			Plants	Invertebrate	Reference	Plants	Invertebrate	Terrestrial Plant	Terrestrial Animal	Plant	Soil Biota	Plant	Inverts	Overall Lowest Screening Benchmark			
	High MW PAHs [f]	mg/kg	---	18	OSWER Dir. 9285.7-75	---	---	---	---	---	---	---	18	18	---	18	Benchmark
Petroleum	Gasoline Range Organics	mg/kg	---	---	---	---	---	---	---	---	100	---	100	100	---	100	Benchmark
	TPH - diesel	mg/kg	---	---	---	---	---	---	---	---	200	---	200	200	---	200	Benchmark
	TPH - kerosene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Semivolatile Organics	Normal paraffin hydrocarbons	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Phenol	mg/kg	---	---	---	70	30	---	---	70	30	70	30	30	---	30	Benchmark
	2-methylphenol (ocresol)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	4-methylphenol (pcresol)	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2,4-dinitrotoluene	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Bis[2-ethylhexyl] phthalate [g]	mg/kg	---	---	---	100	---	---	---	100	---	100	---	100	---	100	Benchmark
	Polychlorinated Biphenyls (PCB) [h,i]	mg/kg	---	---	---	40	---	---	---	40	---	40	---	40	---	40	Benchmark
	Aroclor 1016 [h,i]	mg/kg	---	---	---	40	---	---	---	40	---	40	---	40	---	40	Benchmark
	Aroclor 1221 [h,i]	mg/kg	---	---	---	40	---	---	---	40	---	40	---	40	---	40	Benchmark
	Aroclor 1232 [h,i]	mg/kg	---	---	---	40	---	---	---	40	---	40	---	40	---	40	Benchmark
	Aroclor 1242 [h,i]	mg/kg	---	---	---	40	---	---	---	40	---	40	---	40	---	40	Benchmark
	Aroclor 1248 [h,i]	mg/kg	---	---	---	40	---	---	---	40	---	40	---	40	---	40	Benchmark
	Aroclor 1254 [h,i]	mg/kg	---	---	---	40	---	---	---	40	---	40	---	40	---	40	Benchmark
	Aroclor 1260 [h,i]	mg/kg	---	---	---	40	---	---	---	40	---	40	---	40	---	40	Benchmark
	Aroclor-1262 [h,i, j]	mg/kg	---	---	---	40	---	---	---	40	---	40	---	40	---	40	Benchmark
Herbicide	Dichloroprop	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticide	Aldrin	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	beta-1,2,3,4,5,6-Hexachlorocyclohexane [k, l]	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	alpha-Chlordane [m]	mg/kg	---	---	---	---	---	---	---	---	1	---	1	1	---	1	Benchmark
	gamma-Chlordane [m]	mg/kg	---	---	---	---	---	---	---	---	1	---	1	1	---	1	Benchmark
	Dichlorodiphenyldichloroethylene [n, o]	mg/kg	---	---	OSWER Dir. 9285.7-57	---	---	---	---	---	---	---	---	---	---	---	---
	Dichlorodiphenyltrichloroethane [o]	mg/kg	---	---	OSWER Dir. 9285.7-57	---	---	---	---	---	---	---	---	---	---	---	---
	Dieldrin	mg/kg	---	---	OSWER Dir. 9285.7-56	---	---	---	---	---	---	---	---	---	---	---	---
	Endosulfan I	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Endosulfan II	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Endosulfan sulfate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Endrin aldehyde [p]	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Methoxychlor	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:

a. Background soil concentrations are selected according to the following hierarchy: the 90th percentile of Hanford Site background; Washington state-wide background. See the text for further discussion of sources.
b. The selected PRG is the higher of either the background in soil or the Overall Lowest Screening Value between plants and soil invertebrates.
c. When Cr (total) not available, the lower of either Cr+3 or Cr+6 as available were used as a surrogate.
d. MTCA plant and soil biota benchmarks were replaced by Washington state natural background concentration.
e. The Low MW PAHs screening values from EPA (OSWER Directive 9285.7-78) represents the sum of the low molecular weight polyaromatic hydrocarbons (PAHs). For the purposes of this assessment, the benchmark was also applied to the individual low molecular weight PAHs.
f. The High MW PAHs screening values from EPA (OSWER Directive 9285.7-78) represents the sum of the high molecular weight polyaromatic hydrocarbons (PAHs). For the purposes of this assessment, the benchmark was also applied to the individual high molecular weight PAHs.
g. values for diethyl phthalate were used as a surrogate for bis[2-ethylhexyl] phthalate.
h. Aroclor 1254 value was used as surrogate.
i. MTCA values represent screening value for PCB mixtures.
j. MTCA Aroclor 1260 values used as surrogate for Aroclor 1262.
k. Form of HCB not identified in S/ER/TM-126/R2
l. MTCA value based on benzene hexachloride, including lindane.
m. MTCA values based on chlordane.
n. DDT values used as a surrogate for DDE.
o. MTCA value based on total DDT/DDE/DDD.
p. MTCA endrin aldehyde values based on endrin.
Acronyms:
--- = Value not available
DOE BCG = United States Department of Energy biota concentration guide. Summary of media screening values (BCGs) for radionuclides at the former McClellan Air Force Base. All values extracted from DOE/EH-0676 or DOE-STD-1153-2002.
Ecology = WA State Department of Ecology

Table L-3. Summary of Tier 1 Plant and Soil Invertebrate Ecological Screening Levels

Constituent Group	Soil Constituent	Units	EPA EcoSSLs			ORNL - ES/ER/TM-85/R3, ES/ER/TM-126/R2		DOE BCGs		Washington Dept. of Ecology - MTCA (WAC 173-340, Table 749-3)		Lowest Screening Benchmark by Receptor Type			Background Soil Concentrations [a]	SSL for Plants and Soil Invertebrates [b]	Basis
			Plants	Invertebrate	Reference	Plants	Invertebrate	Terrestrial Plant	Terrestrial Animal	Plant	Soil Biota	Plant	Inverts	Overall Lowest Screening Benchmark			

EcoSSL = Ecological soil screening level
EPA = United States Environmental Protection Agency
High MW PAHs = High molecular weight polycyclic aromatic hydrocarbons
Low MW PAHs = Low molecular weight polycyclic aromatic hydrocarbons
mg/kg = Milligram per kilogram
MTCA = Model Toxic Control Act
ORNL = Oakridge National Laboratory
pCi/g = Pico Curie per gram
SSL = Soil screening level
TPH = Total petroleum hydrocarbons

Table L-4. Summary of Tier 2 Plant and Soil Invertebrate Ecological Screening Levels

Constituent	Units	Plant NOEC	Invertebrate NOEC
Antimony	mg/kg	842	842
Arsenic	mg/kg	128	128
Barium	mg/kg	500	358
Beryllium	mg/kg	10	40
Boron	mg/kg	29.6	58
Cadmium	mg/kg	9.84	20
Chromium	mg/kg	259	149
Cobalt	mg/kg	15.7	15.7
Copper	mg/kg	70	58
Lead	mg/kg	9090	1700
Manganese	mg/kg	1260	1260
Mercury	mg/kg	0.33	12.5
Molybdenum	mg/kg	2	28
Nickel	mg/kg	38	280
Selenium	mg/kg	2.02	4.1
Silver	mg/kg	560	2.99
Thallium	mg/kg	1	0.459
Tin	mg/kg	838	838
Uranium	mg/kg	250	100
Vanadium	mg/kg	89.4	116
Zinc	mg/kg	621	8980

Table L-5. Summary of Tier 1 Wildlife Ecological Screening Levels

			NOAEL-based site-specific SSLs									LOAEL-based site-specific SSLs								
Analyte Group	Soil ConstituentAnalyte Name	Units	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	NOAEL Lowest	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	LOAEL Lowest
Radionuclides	Americium-241	pCi/g	---	---	---	---	---	---	---	---	---	28,900	25,000	11,900	17,800	72,100	48,700	41,400	4,840	4,840
	Carbon-14	pCi/g	---	---	---	---	---	---	---	---	---	54	60	56	50	61	60	135	32	32
	Curium-244	pCi/g	---	---	---	---	---	---	---	---	---	389,000	252,000	105,000	207,000	2.30E+06	722,000	499,000	50,800	50,800
	Cobalt-60	pCi/g	---	---	---	---	---	---	---	---	---	805	805	805	863	805	805	806	1,000	805
	Cesium-134	pCi/g	---	---	---	---	---	---	---	---	---	1,140	1,190	1,200	854	1,160	1,180	1,270	562	562
	Cesium 137	pCi/g	---	---	---	---	---	---	---	---	---	2,390	2,700	2,800	1,430	2,510	2,630	3,280	924	924
	Europium-152	pCi/g	---	---	---	---	---	---	---	---	---	1,740	1,740	1,740	1,880	1,740	1,740	1,740	2,220	1,740
	Europium-154	pCi/g	---	---	---	---	---	---	---	---	---	1,610	1,610	1,610	1,740	1,610	1,610	1,610	2,060	1,610
	Europium-155	pCi/g	---	---	---	---	---	---	---	---	---	33,400	33,400	33,400	37,300	33,400	33,400	33,400	48,600	33,400
	Hydrogen-3 (tritium)	pCi/g	---	---	---	---	---	---	---	---	---	1,430	1,280	936	1,130	3,270	2,290	2,830	420	420
	Neptunium-237	pCi/g	---	---	---	---	---	---	---	---	---	8,190	8,140	7,880	9,150	8,250	8,170	8,180	11,200	7,880
	Nickel-63	pCi/g	---	---	---	---	---	---	---	---	---									
	Plutonium-238	pCi/g	---	---	---	---	---	---	---	---	---	36,300	56,200	20,900	26,800	291,000	161,000	161,000	5,980	5,980
	Plutonium-239/240	pCi/g	---	---	---	---	---	---	---	---	---	38,800	60,300	22,300	28,400	324,000	175,000	176,000	6,270	6,270
	Radium-226	pCi/g	---	---	---	---	---	---	---	---	---	168	142	58	377	285	165	199	193	58
	Radium-228	pCi/g	---	---	---	---	---	---	---	---	---	169	140	55	418	306	165	203	193	55
	Antimony-125	pCi/g	---	---	---	---	---	---	---	---	---	4,580	4,580	4,580	5,040	4,580	4,580	4,580	6,130	4,580
	Strontium 90	pCi/g	---	---	---	---	---	---	---	---	---	521	302	151	112	706	519	413	91	91
	Technetium-99	pCi/g	---	---	---	---	---	---	---	---	---	5,360	11,500	137,000	280,000	8,670	12,100	412,000	128,000	5,360
	Thorium-232	pCi/g	---	---	---	---	---	---	---	---	---	5,070	12,900	5,340	12,400	34,400	32,500	86,200	4,560	4,560
	Uranium-234	pCi/g	---	---	---	---	---	---	---	---	---	12,700	21,800	6,370	40,900	30,300	24,800	51,600	14,200	6,370
	Uranium-235	pCi/g	---	---	---	---	---	---	---	---	---	6,340	7,810	4,360	10,200	8,600	8,130	9,630	8,060	4,360
	Uranium-238	pCi/g	---	---	---	---	---	---	---	---	---	8,020	10,400	5,150	22,100	11,900	11,000	13,900	13,400	5,150
Metals	Aluminum	mg/kg	22,020	18,602	4,921	61,782	687	271	380	710	271	---	---	---	---	6,872	2,708	3,799	7,101	2,708
	Antimony	mg/kg	---	---	---	---	8.8	0.66	0.60	17	0.60	---	---	---	---	97	6.6	6.0	167	6.0
	Arsenic, Total all valence states	mg/kg	1,800	1,981	425	10,344	265	105	171	549	105	8,104	10,559	2,132	45,439	459	190	318	881	190
	Arsenic (III)	mg/kg	1,800	1,981	425	10,344	265	105	171	549	105	8,104	10,559	2,132	45,439	459	190	318	881	190
	Arsenic (V)	mg/kg	1,800	1,981	425	10,344	265	105	171	549	105	8,104	10,559	2,132	45,439	459	190	318	881	190
	Barium	mg/kg	1,229	1,271	660	14,442	2,082	1,889	4,605	18,843	660	2,464	2,548	1,323	28,954	3,470	3,148	7,676	31,405	1,323
	Beryllium	mg/kg	---	---	---	---	14	18	101	283	14	---	---	---	---	---	---	---	---	---
	Bismuth	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Boron	mg/kg	64	86	140	797	40	50	284	767	40	222	300	485	2,766	133	167	949	2,563	133
	Cadmium	mg/kg	151	2.8	0.89	1,375	76	1.5	1.3	455	0.89	278	5.1	1.6	2,335	2,065	28	24	5,228	1.6
	Chromium (total)	mg/kg	334	97	37	1,286	320	75	78	752	37	349	101	38	1,355	1,284	299	313	3,536	38
	Chromium (+3)	mg/kg	334	97	37	1,286	320	75	78	752	37	349	101	38	1,355	1,284	299	313	3,536	38
	Chromium (+6)	mg/kg	---	---	---	---	1,233	288	300	3,380	288	---	---	---	---	5,340	1,245	1,300	16,583	1,245
	Cobalt	mg/kg	1,425	305	109	1,601	2,174	261	250	1,346	109	1,461	313	111	1,633	3,233	388	372	1,869	111

Table L-5. Summary of Tier 1 Wildlife Ecological Screening Levels

			NOAEL-based site-specific SSLs									LOAEL-based site-specific SSLs								
Analyte Group	**Soil ConstituentAnalyte Name**	**Units**	**California Quail**	**Meadow-lark**	**Killdeer**	**Red-tailed Hawk**	**Great Basin Pocket Mouse**	**Deer Mouse**	**Grass-hopper Mouse**	**Badger**	**NOAEL Lowest**	**California Quail**	**Meadow-lark**	**Killdeer**	**Red-tailed Hawk**	**Great Basin Pocket Mouse**	**Deer Mouse**	**Grass-hopper Mouse**	**Badger**	**LOAEL Lowest**
	Copper	mg/kg	485	85	36	3,728	873	100	109	2,640	36	1,914	272	107	13,021	1,894	176	182	4,672	107
	Lead	mg/kg	247	49	16	979	1,204	151	153	2,005	16	537	115	36	2,433	2,544	332	336	4,108	36
	Lithium	mg/kg	---	---	---	---	3,189	1,258	1,749	257	257	---	---	---	---	6,379	2,517	3,498	515	515
	Manganese	mg/kg	16,369	24,184	9,588	113,951	4,227	4,115	18,430	20,464	4,115	31,823	48,820	19,636	221,536	5,828	5,798	27,720	28,213	5,798
	Mercury	mg/kg	3.1	0.35	0.036	25	0.49	0.030	0.029	8.7	0.029	36	21	3.6	134	8.0	1.9	3.2	43	1.9
	Molybdenum	mg/kg	35	27	18	98	1.7	1.4	2.8	7.1	1.4	345	270	179	977	17	14	28	71	14
	Nickel	mg/kg	1,081	79	31	6,037	303	18	16	637	16	1,912	136	53	11,078	676	36	33	1,438	33
	Selenium	mg/kg	5.6	3.7	1.7	158	2.1	1.2	1.8	32	1.2	10	8.2	4.3	417	3.0	1.9	3.2	60	1.9
	Silver	mg/kg	345	13	5.0	2,044	1,442	35	30	3,097	5.0	3,453	128	50	20,437	14,418	346	300	30,969	50
	Strontium	mg/kg	---	---	---	---	9,442	4,849	6,476	4,228	4,228	---	---	---	---	---	---	---	---	---
	Thallium	mg/kg	---	---	---	---	5.1	1.8	2.4	2.6	1.8	---	---	---	---	25	9.2	12	13	9.2
	Tin	mg/kg	82	128	231	1,852	187	252	2,691	5,107	82	204	318	575	4,603	279	377	4,025	7,639	204
	Uranium	mg/kg	2,502	2,691	785	18,730	610	393	748	1,694	393	---	---	---	---	1,217	786	1,494	3,383	786
	Vanadium	mg/kg	67	58	16	268	1,363	577	835	1,864	16	134	116	31	537	2,723	1,153	1,668	3,723	31
	Zinc	mg/kg	4,973	714	67	70,825	4,612	633	794	38,590	67	5,015	726	68	71,294	4,661	644	810	38,866	68
General Inorganics	Ammonia/Ammonium	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Chloride	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Cyanide	mg/kg	---	---	---	---	27,971	20,693	78,123	38,061	20,693	---	---	---	---	---	---	---	---	---
	Fluoride (fluorine)	mg/kg	1,492	2,812	556	9,206	9,825	8,216	35,673	17,379	556	6,123	11,539	2,281	37,771	16,521	13,816	59,985	29,224	2,281
	Iodine	mg/kg	---	---	---	---	159	183	1,558	759	159	---	---	---	---	1,594	1,834	15,579	7,590	1,594
	Nitrate/Nitrite	mg/kg	---	---	---	---	206,422	152,711	576,537	280,885	152,711	---	---	---	---	460,073	340,361	1.28E+06	626,035	340,361
	Phosphate	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Sulfate/Sulfite	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Total Organic Carbon	%	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table L-5. Summary of Tier 1 Wildlife Ecological Screening Levels

			NOAEL-based site-specific SSLs									LOAEL-based site-specific SSLs								
Analyte Group	Soil ConstituentAnalyte Name	Units	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	NOAEL Lowest	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	LOAEL Lowest
Volatile Organics	1,1-dichloroethane	mg/kg	3,615	217	83	13,955	20,357	574	502	22,894	83	7,230	435	165	27,909	---	---	---	---	165
	1,1-dichloroethene	mg/kg	3,615	217	83	11,433	12,214	344	301	12,238	83	7,230	434	165	22,866	---	---	---	---	165
	1,1,1-trichloroethane	mg/kg	3,615	217	82	8,936	407,144	11,444	10,016	349,074	82	7,230	433	165	17,871	---	---	---	---	165
	1,1,2-trichloroethane	mg/kg	3,615	217	83	12,031	407,144	11,472	10,041	420,572	83	7,230	434	165	24,063	---	---	---	---	165
	1,1,2,2-tetrachloroethane	mg/kg	3,615	217	82	9,549	3,636	102	89	3,255	82	7,230	433	165	19,098	36,358	1,022	894	32,554	165
	1,2-dichlorobenzene	mg/kg	88	91	82	4,343	282	294	854	17,612	82	176	182	164	8,687	---	---	---	---	164
	1,2-dichloroethane (DCA)	mg/kg	3,615	222	84	16,084	20,357	586	513	24,710	84	7,230	444	169	32,168	---	---	---	---	169
	1,3-dichlorobenzene	mg/kg	96	96	82	4,051	310	314	854	16,652	82	192	192	164	8,103	---	---	---	---	164
	2-butanone (Methyl Ethyl Ketone/MEK)	mg/kg	2,102	1,041	312	11,538	721,052	159,713	176,661	970,851	312	21,017	10,406	3,123	115,382	1.86E+06	412,224	455,968	2.51E+06	3,123
	2-hexanone	mg/kg	2,102	548	186	9,653	2,036	244	237	2,512	186	21,017	5,483	1,856	96,532	14,698	1,759	1,708	18,135	1,708
	Benzene	mg/kg	8,554	513	195	27,053	285	8.0	7.0	286	7.0	---	---	---	---	2,850	80	70	2,856	70
	Butanol	mg/kg	---	---	---	---	50,893	2,906	2,626	67,049	2,626	---	---	---	---	203,572	11,625	10,503	268,194	10,503
	Carbon Tetrachloride	mg/kg	3,615	216	82	7,382	6,514	183	160	4,904	82	7,230	433	165	14,765	---	---	---	---	165
	Chlorobenzene	mg/kg	3,615	216	82	6,672	7,939	223	195	5,561	82	7,230	433	165	13,345	15,756	442	387	11,036	165
	Chloroform	mg/kg	3,615	217	83	13,003	6,107	172	151	6,600	83	7,230	434	165	26,006	16,693	470	412	18,041	165
	Cis-1,2-dichloroethylene	mg/kg	3,615	217	83	13,446	18,403	518	453	20,271	83	7,230	434	165	26,892	---	---	---	---	165
	Dichloromethane (Methylene Chloride)	mg/kg	3,615	218	83	17,281	2,382	67	59	2,999	59	7,230	436	166	34,562	20,357	576	504	25,632	166
	Ethyl Benzene	mg/kg	159	183	194	12,721	342	384	1,357	33,025	159	---	---	---	---	1,027	1,151	4,075	99,076	1,027
	Methyl Isobutyl Ketone	mg/kg	2,102	573	193	10,211	721,052	90,040	87,996	915,292	193	21,017	5,729	1,927	102,114	1.86E+06	232,395	227,119	2.36E+06	1,927
	n-butyl Benzene	mg/kg	301	263	193	7,857	530	485	1,092	18,135	193	---	---	---	---	1,589	1,454	3,275	54,406	1,454
	Tetrachloroethylene	mg/kg	3,615	216	82	7,733	570	16	14	443	14	7,230	431	164	15,467	2,850	80	70	2,216	70
	Toluene	mg/kg	8,554	512	195	17,200	21,171	594	520	15,763	195	---	---	---	---	211,715	5,944	5,202	157,633	5,202
	Trans-1,2-dichloroethylene	mg/kg	3,615	217	83	11,881	18,403	518	453	18,869	83	7,230	434	165	23,763	---	---	---	---	165

Table L-5. Summary of Tier 1 Wildlife Ecological Screening Levels

			NOAEL-based site-specific SSLs									LOAEL-based site-specific SSLs								
Analyte Group	Soil ConstituentAnalyte Name	Units	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	NOAEL Lowest	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	LOAEL Lowest
	Trichloroethylene (TCE)	mg/kg	3,615	217	82	7,498	285	8.0	7.0	217	7.0	7,230	434	165	14,996	2,850	80	70	2,169	70
	Xylene	mg/kg	149	175	194	13,419	422	481	1,787	45,266	149	---	---	---	---	826	940	3,494	88,509	826
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/kg	6,831	285	110	38,362	71,250	1,396	1,211	96,952	110	68,306	2,849	1,096	383,617	142,500	2,793	2,422	193,905	1,096
	Acenaphthylene	mg/kg	3,506	19	7.4	38,362	24,321	91	78	96,952	7.4	43,766	186	74	383,617	54,132	183	156	193,905	74
	Anthracene	mg/kg	3,405	170	68	38,362	178,811	4,784	4,213	554,013	68	43,405	1,716	678	383,617	---	---	---	---	678
	Benzo(a)pyrene	mg/kg	47	6.0	2.4	767	60	8.1	7.6	554	2.4	---	---	---	---	635	81	76	5,540	76
	Benzo(a)anthracene	mg/kg	118	5.2	2.0	767	307	7.3	6.4	554	2.0	---	---	---	---	3,636	73	64	5,540	64
	Benzo(b)fluoranthene	mg/kg	22	3.0	1.3	767	25	4.1	3.9	554	1.3	---	---	---	---	247	41	39	5,540	39
	Benzo(ghi)perylene	mg/kg	12	2.6	1.1	767	13	3.5	3.5	554	1.1	---	---	---	---	89	32	35	5,540	32
	Benzo[k]fluoranthene	mg/kg	136	3.2	1.3	767	406	4.6	3.9	554	1.3	---	---	---	---	4,069	46	39	5,540	39
	Chrysene	mg/kg	118	3.6	1.4	767	307	5.1	4.5	554	1.4	---	---	---	---	3,636	51	45	5,540	45
	Dibenz(ah)anthracene	mg/kg	44	3.5	1.4	767	54	4.9	4.4	554	1.4	---	---	---	---	543	49	44	5,540	44
	Fluoranthene	mg/kg	15	2.5	1.1	767	1,957	421	420	69,252	1.1	---	---	---	---	3,915	841	839	138,503	839
	Fluorene	mg/kg	6,831	45	18	38,362	50,893	157	134	69,252	18	68,306	446	175	383,617	101,786	313	267	138,503	175
	Indeno[1,2,3-cd]pyrene	mg/kg	49	2.9	1.2	767	63	4.0	3.6	554	1.2	---	---	---	---	626	40	36	5,540	36
	2-Methylnaphthalene	mg/kg	5.0	5.7	155	38,362	5.0	5.5	500	27,867	5.0	8.4	9.5	1,547	383,617	6.0	6.5	1,132	63,047	6.0
	Naphthalene	mg/kg	34	37	416	38,362	33	36	116	27,701	33	340	369	378	383,617	100	109	348	83,102	100
	Phenanthrene	mg/kg	4,329	236	94	38,362	301,134	6,731	5,919	554,013	94	56,061	2,406	943	383,617	---	---	---	---	943
	Pyrene	mg/kg	11	3.9	1.9	767	825	360	436	41,551	1.9	---	---	---	---	1,375	600	727	69,252	600
	Total PAHs	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Low MW PAHs	mg/kg	6,592	12,623	2,316	38,362	25,369	19,170	74,597	36,343	2,316	67,600	128,679	23,165	383,617	130,652	97,560	372,987	181,716	23,165
	High MW PAHs	mg/kg	40	72	46	767	29	39	699	341	29					157	209	3,491	1,701	157
Petro-leum	Gasoline Range Organics	mg/kg																		

Table L-5. Summary of Tier 1 Wildlife Ecological Screening Levels

			NOAEL-based site-specific SSLs									LOAEL-based site-specific SSLs								
Analyte Group	Soil ConstituentAnalyte Name	Units	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	NOAEL Lowest	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	LOAEL Lowest
	TPH - diesel	mg/kg	105,086	199,535	35,638	590,179	407,144	301,205	1.14E+06	554,013	35,638	1.05E+06	2.00E+06	356,382	5.90E+06	610,716	451,807	1.71E+06	831,020	356,382
	TPH - kerosene	mg/kg	105,086	199,535	35,638	590,179	407,144	301,205	1.14E+06	554,013	35,638	1.05E+06	2.00E+06	356,382	5.90E+06	610,716	451,807	1.71E+06	831,020	356,382
Semivolatile Organics	Normal paraffin hydrocarbons	mg/kg	170,870	324,445	57,948	959,632	407,144	301,205	1.14E+06	554,013	57,948	---	---	---	---	610,716	451,807	1.71E+06	831,020	451,807
	Phenol	mg/kg	---	---	---	---	4,886	526	504	5,919	504	---	---	---	---	14,657	1,578	1,511	17,756	1,511
	2-methylphenol (ocresol)	mg/kg	---	---	---	---	127,436	10,038	9,293	134,503	9,293	---	---	---	---	---	---	---	---	---
	4-methylphenol (pcresol)	mg/kg	---	---	---	---	127,436	10,102	9,358	136,361	9,358	---	---	---	---	---	---	---	---	---
	2,4-dinitrotoluene	mg/kg	0.29	0.30	0.20	7.2	14	13	36	286	0.20	38	39	26	932	29	28	74	597	26
	Bis[2-ethylhexyl] phthalate	mg/kg	111	0.35	0.14	263	1,733	5.4	4.6	3,599	0.14	---	---	---	---	17,332	54	45	35,994	45
	Polychlorinated Biphenyls (PCB) [b]	mg/kg	10	0.65	0.33	25	2.9	0.30	0.27	8.5	0.27	100	3.6	1.8	251	29	1.6	1.5	85	1.5
	Aroclor 1016 [b]	mg/kg	6.4	0.64	0.33	22	35	2.8	2.5	150	0.33	64	3.6	1.8	218	88	5.3	4.8	377	1.8
	Aroclor 1221 [b]	mg/kg	2.7	0.61	0.33	24	0.69	0.25	0.27	8.2	0.25	27	3.4	1.8	240	6.9	1.5	1.5	82	1.5
	Aroclor 1232 [b]	mg/kg	2.2	0.59	0.33	26	0.55	0.24	0.27	8.8	0.24	22	3.4	1.8	262	5.5	1.4	1.5	88	1.4
	Aroclor 1242 [b]	mg/kg	10	0.65	0.33	26	3.1	0.30	0.27	8.7	0.27	104	3.6	1.8	256	31	1.6	1.5	87	1.5
	Aroclor 1248 [b]	mg/kg	9.4	0.65	0.33	24	0.35	0.060	0.060	1.1	0.060	94	3.6	1.8	243	3.5	0.35	0.32	11	0.32
	Aroclor 1254	mg/kg	12	0.65	0.33	27	3.5	0.30	0.27	9.1	0.27	115	3.6	1.8	273	35	1.6	1.5	91	1.5
	Aroclor 1260 [b]	mg/kg	20	0.66	0.33	51	7.7	0.30	0.27	15	0.27	204	3.6	1.8	515	77	1.6	1.5	154	1.5
	Aroclor-1262 [b]	mg/kg	38	72	13	212	28	20	77	38	13	378	718	128	2,125	277	205	773	377	128
Herbicide	Dichloroprop	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pesticide	Aldrin	mg/kg	0.45	0.080	0.033	1.1	10	2.0	2.0	27	0.033	2.2	0.40	0.16	5.3	51	9.9	9.8	134	0.16
	beta-1,2,3,4,5,6-Hexachlorocyclohexane	mg/kg	4.1	3.6	2.7	112	1.9	1.7	4.0	67	1.7	6.2	5.5	4.1	168	9.4	8.7	20	335	4.1
	alpha-Chlordane	mg/kg	122	24	10	302	93	21	21	264	10	608	121	50	1,508	925	205	207	2,641	50
	gamma-Chlordane	mg/kg	122	24	10	302	93	20	21	264	10	608	121	50	1,508	925	204	206	2,641	50
	Dichlorodiphenyldichloroethane (DDD) [c]	mg/kg	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Dichlorodiphenyldichloroethylene (DDE) [c]	mg/kg	30	0.21	0.072	0.062	20	0.11	0.095	0.032	0.032	300	2.3	0.80	1.7	136	0.71	0.59	0.40	0.40

Table L-5. Summary of Tier 1 Wildlife Ecological Screening Levels

			NOAEL-based site-specific SSLs									LOAEL-based site-specific SSLs								
Analyte Group	Soil ConstituentAnalyte Name	Units	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	NOAEL Lowest	California Quail	Meadow-lark	Killdeer	Red-tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grass-hopper Mouse	Badger	LOAEL Lowest
	Dichlorodiphenyltrichloroethane	mg/kg	30	0.30	0.10	2.5	20	0.16	0.14	1.4	0.10	300	3.5	1.2	46	136	1.0	0.88	13	0.88
	Dieldrin	mg/kg	1.9	0.062	0.025	1.6	0.28	0.012	0.010	0.35	0.010	6.1	0.20	0.079	5.2	0.57	0.024	0.021	0.69	0.021
	Endosulfan I	mg/kg	93	66	41	1,671	0.92	0.71	1.3	22	0.71	---	---	---	---	---	---	---	---	---
	Endosulfan II	mg/kg	93	66	41	1,671	0.92	0.71	1.3	22	0.71	---	---	---	---	---	---	---	---	---
	Endosulfan sulfate	mg/kg	63	55	41	2,160	0.61	0.56	1.3	27	0.56	---	---	---	---	---	---	---	---	---
	Endrin aldehyde	mg/kg	2.6	0.52	0.23	53	0.51	0.14	0.14	14	0.14	---	---	---	---	5.1	1.4	1.4	140	1.4
	Methoxychlor	mg/kg	---	---	---	---	60	11	11	441	11	---	---	---	---	120	22	22	882	22

a Values for diethyl phthalate and di-n-butyl phthalate were used as a surrogate for bis(2)ethylhexyl phthalate
b Aroclor 1254 value was used as surrogate.
c DDT values used as a surrogate for DDE and DDD.
High MW PAHs = High molecular weight polycyclic aromatic hydrocarbons
Low MW PAHs = Low molecular weight polycyclic aromatic hydrocarbons
mg/kg = Milligram per kilogram
pCi/g = Pico Curie per gram
SSL = Soil screening level
TPH = Total petroleum hydrocarbons
--- = Value not available

Table L-6. Summary of Tier 2 Wildlife Ecological Screening Levels

Analyte Group	Analyte Name	Units	California Quail	Western Meadowlark	Killdeer	Red-Tailed Hawk	Great Basin Pocket Mouse	Deer Mouse	Grasshopper Mouse	Badger	Lowest PRG
Metal	Silver	mg/kg	4,238	3,973	983	20,186	24,465	9,806	14,362	30,778	983
Metal	Aluminum	mg/kg	19,217	31,220	7,214	74,599	4,883	3,988	13,059	7,811	3,988
Metal	Arsenic	mg/kg	4,776	7,403	2,284	40,102	201	127	302	847	127
Metal	Boron	mg/kg	248	144	91	2,714	122	91	170	2,516	91
Metal	Barium	mg/kg	1,721	2,335	1,687	8,101	2,265	2,617	11,873	12,430	1,687
Metal	Beryllium	mg/kg	NTD	NTD	NTD	NTD	18	22	181	NBD	18
Metal	Cadmium	mg/kg	294	103	29	1,711	2,203	624	858	4,704	29
Metal	Cobalt	mg/kg	1,397	2,050	484	4,798	2,901	2,136	5,610	4,234	484
Metal	Chromium	mg/kg	193	221	109	2,595	544	517	1,424	4,918	109
Metal	Copper	mg/kg	2,020	1,532	213	12,881	2,176	579	1,217	4,631	213
Metal	Mercury	mg/kg	36	4.7	2	92	7.9	1.6	1.8	33	1.6
Metal	Lithium	mg/kg					1664	1797	8347	6,522	1,664
Metal	Manganese	mg/kg	20,746	26,026	14,407	150,899	3,322	3,467	11,780	21,916	3,322
Metal	Molybdenum	mg/kg	125	117	95	515	5.9	5.7	14	38	5.7
Metal	Nickel	mg/kg	2,051	1,127	361	11,625	711	247	342	1,520	247
Metal	Lead	mg/kg	559	664	156	2,300	2,672	1,578	3,807	3,966	156
Metal	Antimony	mg/kg	NTD	NTD	NTD	NTD	231	146	366	NBD	146
Metal	Selenium	mg/kg	10	4.9	2.4	24	2.7	1.4	1.9	8.8	1.4
Metal	Strontium (Elemental)	mg/kg	NTD	NTD	NTD	NTD	1,214	1,449	6,540	8,256	1,214
Metal	Tin	mg/kg	97	98	84	335	130	133	365	693	84
Metal	Thallium	mg/kg	NTD	NTD	NTD	NTD	8.7	6.2	12	25	6.2
Metal	Uranium (Calculated Total)	mg/kg	2,002	339	139	82	812	123	119	40	40
Metal	Vanadium	mg/kg	81	107	43	505	260	297	4,531	3,596	43
Metal	Zinc	mg/kg	6,289	4,662	856	906	6,711	3,331	12,666	1,037	856

Table L-7. Summary of Sediment Ecological Screening Levels

Analyte Name	Units	ESL	Source of Value
4,4'-DDD (Dichlorodiphenyldichloroethane)	ug/kg	8	OMOE 1993
4,4'-DDE (Dichlorodiphenyldichloroethylene)	ug/kg	3.16	TEC
Acetone	ug/kg	8.7	ORNL 1997
Alpha-BHC	ug/kg	6	OMOE 1993
Alpha-Chlordane	ug/kg	0.03	Dutch -target
Aluminum	ug/kg	14000000	ERL
Americium-241	pCi/g	5150	BCG
Antimony	ug/kg	400	Michelsen 2003
Arsenic	ug/kg	20000	Michelsen, 2003
Barium	ug/kg	300000	Buchman 2008
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	ug/kg	5	LEL
Bis(2-ethylhexyl) phthalate	ug/kg	230	Michelsen, 2003
Cadmium	ug/kg	600	Michelsen, 2003
Carbon-14	pCi/g	59000	USDOE 2006
Cesium-137	pCi/g	3120	USDOE 2006
Chromium	ug/kg	95000	Michelsen 2003
Cobalt	ug/kg	50000	LEL
Cobalt-57	pCi/g	1460	USDOE 2006
Cobalt-60	pCi/g	1460	USDOE 2006
Copper	ug/kg	80000	Michelsen, 2003
Delta-BHC	ug/kg	120	ORNL 1997
Di-n-butylphthalate	ug/kg	7000	Dutch -target
Endosulfan I	ug/kg	0.01	Dutch -target
Endrin	ug/kg	2.22	TEC
Endrin aldehyde	ug/kg	2.22	TEC
Europium-152	pCi/g	3040	USDOE 2006
Europium-154	pCi/g	2570	USDOE 2006
Europium-155	pCi/g	31600	BCG
Gamma-BHC (Lindane)	ug/kg	2.37	TEC
gamma-Chlordane	ug/kg	0.03	Dutch -target
Heptachlor epoxide	ug/kg	2.5	MacDonald et al. 2000
Iron	ug/kg	20000000	LEL
Lead	ug/kg	335000	Michelsen 2003
Manganese	ug/kg	460000	LEL
Mercury	ug/kg	500	Michelsen 2003
Molybdenum	ug/kg	250000	Crommentuijn 2000
Nickel	ug/kg	60000	Michelsen, 2003
Phosphorus	ug/kg	600000	OMOE 1993
Plutonium-238	pCi/g	5730	BCG
Plutonium-239/240	pCi/g	5860	USDOE 2006

Table L-7. Summary of Sediment Ecological Screening Levels

Analyte Name	Units	ESL	Source of Value
Selenium	ug/kg	4000	Van Derveer and Canton 1997
Silver	ug/kg	2000	Michelsen 2003
Strontium-90	pCi/g	582	USDOE 2006
Technetium-99	pCi/g	42200	USDOE 2006
Thallium	ug/kg	2600	Crommentuijn 2000
Tin	ug/kg	239000	Crommentuijn, 2000
Toluene	ug/kg	50	ORNL 1997
Total High Mol Weight PAHs	ug/kg	31000	Michelsen 2003
Total Low Mol Weight PAHs	ug/kg	6600	Michelsen 2003
Total PCBs	ug/kg	60	Michelsen 2003
Total Petroleum Hydrocarbons - diesel range	ug/kg	1750	Battelle 2007
Total Petroleum Hydrocarbons - motor oil (high boiling)	ug/kg	9880	Battelle 2007
Tritium	pCi/g	374000	USDOE 2006
Uranium	ug/kg	100000	Sheppard et al., 2005
Uranium-233/234	pCi/g	5270	USDOE 2006
Uranium-234	pCi/g	5270	USDOE 2006
Uranium-235	pCi/g	3730	USDOE 2006
Uranium-238	pCi/g	2490	USDOE 2006
Zinc	ug/kg	140000	Michelsen, 2003
Zirconium-95	pCi/g	2330	BCG

Table L-8. Summary of Groundwater Analytes Without Ecological Screening Levels

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
1,1,1,2-Tetrachloroethane	630-20-6	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.090	0.090	--	--	--	--	--	--
1,1,1-Trichloroethane	71-55-6	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.035	1.0	--	--	--	--	--	--
1,1,1-Trichloroethane	71-55-6	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	N	10/22/2009	6/16/2010	15	0	0	0.098	1.0	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.063	1.0	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.046	1.0	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.045	1.0	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
1,2,3-Trichloropropane	96-18-4	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.15	0.15	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.41	0.41	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.13	0.13	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.050	1.0	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
1,2-Dichloroethene (Total)	540-59-0	ug/L	N	10/22/2009	6/16/2010	15	0	0	0.13	1.0	--	--	--	--	--	--
1,2-Dichloroethene (Total)	540-59-0	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	ug/L	N	10/22/2009	6/16/2010	15	0	0	0.097	1.0	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	ug/L	N	1/10/2006	11/22/2010	34	0	0	0.047	10	--	--	--	--	--	--
1,4-Dioxane	123-91-1	ug/L	N	4/12/2007	6/16/2010	15	0	0	7.0	45	--	--	--	--	--	--
1-Butanol	71-36-3	ug/L	N	4/12/2007	11/22/2010	31	0	0	8.1	100	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	ug/L	N	1/10/2006	1/17/2006	3	0	0	25	26	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	ug/L	N	1/10/2006	1/17/2006	3	0	0	25	26	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
2-Butanone	78-93-3	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.52	1.8	--	--	--	--	--	--
2-Butanone	78-93-3	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
2-Chlorophenol	95-57-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
2-Hexanone	591-78-6	ug/L	N	10/22/2009	6/16/2010	15	0	0	0.22	1.0	--	--	--	--	--	--
2-Hexanone	591-78-6	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
2-Methylphenol (cresol, o-)	95-48-7	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
2-Nitroaniline	88-74-4	ug/L	N	1/10/2006	1/17/2006	3	0	0	25	26	--	--	--	--	--	--
2-Nitrophenol	88-75-5	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
3,3'-Dichlorobenzidine	91-94-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
3+4 Methylphenol (cresol, m+p)	65794-96-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
3-Nitroaniline	99-09-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	25	26	--	--	--	--	--	--
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	--	--	--	--
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	25	26	--	--	--	--	--	--

Table L-8. Summary of Groundwater Analytes Without Ecological Screening Levels

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
4-Bromophenylphenyl ether	101-55-3	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
4-Chloro-3-methylphenol	59-50-7	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
4-Chloroaniline	106-47-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
4-Chlorophenylphenyl ether	7005-72-3	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
4-Methyl-2-pentanone	108-10-1	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.12	1.0	--	--	--	--	--	--
4-Methyl-2-pentanone	108-10-1	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
4-Nitroaniline	100-01-6	ug/L	N	1/10/2006	1/17/2006	3	0	0	25	26	--	--	--	--	--	--
4-Nitrophenol	100-02-7	ug/L	N	1/10/2006	1/17/2006	3	0	0	25	26	--	--	--	--	--	--
Acenaphthene	83-32-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Acenaphthylene	208-96-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Acetone	67-64-1	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.34	1.0	--	--	--	--	--	--
Acetone	67-64-1	ug/L	Y	7/2/2010	7/20/2010	19	1	5.3	1.0	1.0	1.3	1.3	--	--	--	--
Acetonitrile	75-05-8	ug/L	N	3/5/2010	6/16/2010	10	0	0	2.0	2.0	--	--	--	--	--	--
Acrolein	107-02-8	ug/L	N	3/5/2010	6/16/2010	10	0	0	2.8	2.8	--	--	--	--	--	--
Alkalinity	ALKALINITY	ug/L	N	3/7/2006	1/20/2011	46	46	100	--	--	78,000	130,000	--	--	147,127	--
Allyl chloride	107-05-1	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.091	0.11	--	--	--	--	--	--
Alpha-BHC	319-84-6	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	--	--	--	--
Americium-241	14596-10-2	pCi/L	N	1/10/2006	1/17/2006	3	0	0	55	110	--	--	--	--	7.70E-05	--
Anthracene	120-12-7	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Antimony	7440-36-0	ug/L	N	1/10/2006	2/24/2011	150	0	0	0.30	72	--	--	--	--	55	--
Antimony	7440-36-0	ug/L	Y	1/17/2006	2/24/2011	170	11	6.5	0.30	72	0.94	33	--	--	55	--
Antimony-125	14234-35-6	pCi/L	N	1/10/2006	1/31/2011	49	0	0	-2.10E+01	33	--	--	--	--	--	--
Barium	7440-39-3	ug/L	N	1/10/2006	2/24/2011	150	150	100	--	--	10	158	--	--	105	1
Barium	7440-39-3	ug/L	Y	1/17/2006	2/24/2011	170	170	100	--	--	10	58	--	--	105	--
Benzene	71-43-2	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.032	1.0	--	--	--	--	--	--
Benzene	71-43-2	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Benzo(ghi)perylene	191-24-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Beryllium	7440-41-7	ug/L	N	1/10/2006	2/24/2011	141	1	0.71	0.10	4.0	0.088	0.088	--	--	2.3	--
Beryllium	7440-41-7	ug/L	Y	1/17/2006	2/24/2011	170	1	0.59	0.050	4.0	0.19	0.19	--	--	2.3	--
Beryllium-7	13966-02-4	pCi/L	N	1/10/2006	1/31/2011	49	0	0	-7.10E+01	150	--	--	--	--	8.6	--
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	--	--	--	--
Bis(2-chloro-1-methylethyl)ether	108-60-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Bis(2-Chloroethoxy)methane	111-91-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Bis(2-chloroethyl) ether	111-44-4	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Bis(2-ethylhexyl) phthalate	117-81-7	ug/L	N	1/10/2006	1/17/2006	3	3	100	--	--	1.5	5.0	--	--	--	--
Bismuth	7440-69-9	ug/L	N	1/10/2006	6/16/2010	16	0	0	6.1	105	--	--	--	--	--	--
Bismuth	7440-69-9	ug/L	Y	8/14/2009	7/2/2010	14	2	14	20	105	23	23	--	--	--	--
Boron	7440-42-8	ug/L	N	1/10/2006	1/17/2011	17	8	47	10	19	13	36	--	--	36	1
Boron	7440-42-8	ug/L	Y	8/14/2009	1/17/2011	15	5	33	11	19	11	45	--	--	36	1
Bromide	24959-67-9	ug/L	N	1/10/2006	7/26/2010	22	3	14	24	1,250	78	430	--	--	124	1
Bromide	24959-67-9	ug/L	Y	7/2/2010	7/20/2010	19	7	37	90	90	102	432	--	--	124	5
Bromodichloromethane	75-27-4	ug/L	N	10/22/2009	6/16/2010	15	2	13	0.082	1.0	0.13	0.16	--	--	--	--
Bromodichloromethane	75-27-4	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Bromoform	75-25-2	ug/L	N	10/22/2009	6/16/2010	15	0	0	0.094	1.0	--	--	--	--	--	--
Bromoform	75-25-2	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--

Table L-8. Summary of Groundwater Analytes Without Ecological Screening Levels

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Bromomethane	74-83-9	ug/L	N	10/22/2009	6/16/2010	15	3	20	0.084	2.0	0.95	1.1	--	--	--	--
Bromomethane	74-83-9	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Butylbenzylphthalate	85-68-7	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Calcium	7440-70-2	ug/L	N	1/10/2006	1/31/2011	134	134	100	--	--	19,200	101,000	--	--	52,644	28
Calcium	7440-70-2	ug/L	Y	1/17/2006	1/31/2011	134	134	100	--	--	20,100	95,300	--	--	52,644	30
Carbazole	86-74-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Carbon disulfide	75-15-0	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.029	1.0	--	--	--	--	--	--
Carbon disulfide	75-15-0	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Carbon tetrachloride	56-23-5	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.039	1.0	--	--	--	--	--	--
Carbon tetrachloride	56-23-5	ug/L	Y	7/2/2010	7/20/2010	19	1	5.3	1.0	1.0	1.9	1.9	--	--	--	--
Carbon-14	14762-75-5	pCi/L	N	1/10/2006	5/9/2011	151	86	57	-1.00E+01	32	8.5	5,670	--	--	--	--
Carbon-14	14762-75-5	pCi/L	Y	8/14/2009	5/10/2011	24	19	79	-4.40E-01	38	174	2,390	--	--	--	--
Cesium-134	13967-70-9	pCi/L	N	1/10/2006	1/31/2011	49	0	0	-2.10E+01	18	--	--	--	--	1.1	--
Cesium-137	10045-97-3	pCi/L	N	1/10/2006	1/31/2011	49	0	0	-9.99E+00	15	--	--	--	--	8.6	--
Chlorobenzene	108-90-7	ug/L	N	10/24/2007	11/22/2010	26	0	0	0.15	1.0	--	--	--	--	--	--
Chlorobenzene	108-90-7	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Chloroethane	75-00-3	ug/L	N	10/22/2009	6/16/2010	15	0	0	0.085	1.0	--	--	--	--	--	--
Chloroethane	75-00-3	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Chloroform	67-66-3	ug/L	N	4/12/2007	11/22/2010	31	14	45	0.10	1.0	0.28	2.3	--	--	--	--
Chloroform	67-66-3	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Chloromethane	74-87-3	ug/L	N	10/22/2009	6/16/2010	15	1	6.7	0.077	1.0	0.11	0.11	--	--	--	--
Chloromethane	74-87-3	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Chloroprene	126-99-8	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.086	0.097	--	--	--	--	--	--
Chrysene	218-01-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
cis-1,2-Dichloroethylene	156-59-2	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.048	1.0	--	--	--	--	--	--
cis-1,2-Dichloroethylene	156-59-2	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	ug/L	N	10/22/2009	6/16/2010	15	0	0	0.073	1.0	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Cobalt	7440-48-4	ug/L	N	1/10/2006	2/24/2011	150	12	8.0	0.10	7.0	0.11	19	--	--	0.92	4
Cobalt	7440-48-4	ug/L	Y	1/17/2006	2/24/2011	170	35	21	0.10	7.0	0.12	26	--	--	0.92	13
Delta-BHC	319-86-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	--	--	--	--
Dibenz[a,h]anthracene	53-70-3	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Dibenzofuran	132-64-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Dibromochloromethane	124-48-1	ug/L	N	10/22/2009	6/16/2010	15	0	0	0.057	1.0	--	--	--	--	--	--
Dibromochloromethane	124-48-1	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Dibromomethane	74-95-3	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.21	0.21	--	--	--	--	--	--
Dichlorodifluoromethane	75-71-8	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.070	0.084	--	--	--	--	--	--
Diethylphthalate	84-66-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Di-n-butylphthalate	84-74-2	ug/L	N	1/10/2006	1/17/2006	3	3	100	--	--	0.72	3.0	--	--	--	--
Di-n-octylphthalate	117-84-0	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Dissolved oxygen	DO	ug/L	N	1/10/2006	4/13/2011	89	89	100	--	--	300	11,270	--	--	--	--
Dissolved oxygen	DO	ug/L	Y	8/14/2009	4/25/2011	21	21	100	--	--	5,690	8,240	--	--	--	--
Endosulfan sulfate	1031-07-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	--	--	--	--
Endrin ketone	53494-70-5	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	--	--	--	--
Ethyl cyanide	107-12-0	ug/L	N	4/12/2007	11/22/2010	31	0	0	1.2	4.7	--	--	--	--	--	--
Ethyl methacrylate	97-63-2	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.11	0.11	--	--	--	--	--	--
Ethylbenzene	100-41-4	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.061	1.0	--	--	--	--	--	--

Table L-8. Summary of Groundwater Analytes Without Ecological Screening Levels

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Ethylbenzene	100-41-4	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Europium-152	14683-23-9	pCi/L	N	1/10/2006	1/31/2011	49	0	0	-3.00E+01	40	--	--	--	--	222	--
Fluoranthene	206-44-0	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Fluorene	86-73-7	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Fluoride	16984-48-8	ug/L	N	1/10/2006	2/24/2011	144	81	56	20	600	21	370	--	--	1,047	--
Fluoride	16984-48-8	ug/L	Y	7/2/2010	7/20/2010	19	13	68	60	60	67	162	--	--	1,047	--
Gross alpha	12587-46-1	pCi/L	N	1/10/2006	1/31/2011	107	33	31	-2.60E+02	3.6	1.3	1,100	--	--	--	--
Gross beta	12587-47-2	pCi/L	N	1/10/2006	1/31/2011	106	102	96	1.2	5.0	1.8	1,700	--	--	3.1	100
Hexachlorobenzene	118-74-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Hexachlorobutadiene	87-68-3	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Hexachloroethane	67-72-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Iodomethane	74-88-4	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.092	0.092	--	--	--	--	--	--
Isobutyl alcohol	78-83-1	ug/L	N	3/5/2010	6/16/2010	10	0	0	8.7	8.7	--	--	--	--	--	--
Isophorone	78-59-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Lithium	7439-93-2	ug/L	N	1/10/2006	6/16/2010	16	13	81	4.0	9.6	4.0	17	--	--	11,321	--
Lithium	7439-93-2	ug/L	Y	8/14/2009	7/2/2010	14	11	79	4.0	9.6	4.1	17	--	--	11,321	--
Magnesium	7439-95-4	ug/L	N	1/10/2006	1/31/2011	134	134	100	--	--	3,970	17,000	--	--	24,816	--
Magnesium	7439-95-4	ug/L	Y	1/17/2006	1/31/2011	134	134	100	--	--	4,110	15,500	--	--	24,816	--
Manganese	7439-96-5	ug/L	N	1/10/2006	1/31/2011	135	39	29	0.20	6.0	0.32	752	--	--	39	10
Manganese	7439-96-5	ug/L	Y	1/17/2006	1/31/2011	153	38	25	0.20	6.0	0.23	539	--	--	39	19
Methacrylonitrile	126-98-7	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.050	0.50	--	--	--	--	--	--
Methyl methacrylate	80-62-6	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.26	0.26	--	--	--	--	--	--
Methylene chloride	75-09-2	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.091	1.0	--	--	--	--	--	--
Methylene chloride	75-09-2	ug/L	Y	7/2/2010	7/20/2010	19	2	11	1.0	1.0	1.1	6.0	--	--	--	--
Molybdenum	7439-98-7	ug/L	N	1/10/2006	2/24/2011	34	25	74	1.3	5.0	0.17	11	--	--	3.2	7
Molybdenum	7439-98-7	ug/L	Y	8/14/2009	2/24/2011	32	28	88	4.0	5.0	0.20	85	--	--	3.2	11
Naphthalene	91-20-3	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Nickel-63	13981-37-8	pCi/L	N	3/25/2010	7/26/2010	5	0	0	-2.02E-01	0.74	--	--	--	--	--	--
Nitrate	14797-55-8	ug/L	N	1/10/2006	4/13/2011	176	176	100	--	--	376	94,300	--	--	26,871	30
Nitrate	14797-55-8	ug/L	Y	8/14/2009	4/25/2011	23	23	100	--	--	8,280	116,000	--	--	26,871	8
Nitrite	14797-65-0	ug/L	N	1/10/2006	2/24/2011	146	6	4.1	9.9	2,500	17	1,580	--	--	94	4
Nitrite	14797-65-0	ug/L	Y	7/2/2010	7/20/2010	19	1	5.3	118	118	503	503	--	--	94	1
Nitrobenzene	98-95-3	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
n-Nitrosodi-n-dipropylamine	621-64-7	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
n-Nitrosodiphenylamine	86-30-6	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Oxidation Reduction Potential	EH	mV	N	1/10/2006	4/13/2011	57	57	100	--	--	-3.55E+02	477	--	--	--	--
Oxidation Reduction Potential	EH	mV	Y	8/14/2009	4/25/2011	14	14	100	--	--	-1.84E+02	193	--	--	--	--
pH Measurement	PH	unitless	N	1/3/2006	4/22/2011	353	353	100	--	--	6.5	9.9	--	--	8.2	12
pH Measurement	PH	unitless	Y	8/13/2007	4/25/2011	27	27	100	--	--	7.5	18	--	--	8.2	2
Phenanthrene	85-01-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Phenol	108-95-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Phosphate	14265-44-2	ug/L	N	1/10/2006	7/26/2010	21	1	4.8	38	1,250	797	797	--	--	162	1
Phosphate	14265-44-2	ug/L	Y	7/2/2010	7/20/2010	19	0	0	429	429	--	--	--	--	162	--
Phosphorus	7723-14-0	ug/L	N	1/10/2006	6/16/2010	16	4	25	8.3	55	91	574	--	--	--	--
Phosphorus	7723-14-0	ug/L	Y	8/14/2009	7/2/2010	14	2	14	42	55	75	145	--	--	--	--
Potassium	7440-09-7	ug/L	N	1/10/2006	1/31/2011	134	132	99	1,650	1,650	1,310	14,400	--	--	9,122	1
Potassium	7440-09-7	ug/L	Y	1/17/2006	1/31/2011	134	131	98	1,650	1,650	1,300	6,380	--	--	9,122	--

Table L-8. Summary of Groundwater Analytes Without Ecological Screening Levels

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Potassium-40	13966-00-2	pCi/L	N	1/10/2006	1/31/2011	49	8	16	-1.10E+02	270	44	280	--	--	203	3
Pyrene	129-00-0	ug/L	N	1/10/2006	1/17/2006	3	0	0	10	10	--	--	--	--	--	--
Radium-226	13982-63-3	pCi/L	N	1/10/2006	1/17/2006	6	0	0	0.047	28	--	--	--	--	1.1	--
Radium-228	15262-20-1	pCi/L	N	1/10/2006	1/17/2006	6	0	0	-1.00E-02	63	--	--	--	--	--	--
Ruthenium-106	13967-48-1	pCi/L	N	1/10/2006	1/31/2011	49	0	0	-9.20E+01	130	--	--	--	--	128	--
Silicon	7440-21-3	ug/L	N	1/10/2006	1/17/2011	17	17	100	--	--	6,980	16,700	--	--	33,949	--
Silicon	7440-21-3	ug/L	Y	8/14/2009	1/17/2011	15	15	100	--	--	7,260	16,600	--	--	33,949	--
Silver-108 metastable	14391-65-2	pCi/L	N	1/10/2006	1/10/2006	1	0	0	9.0	9.0	--	--	--	--	--	--
Sodium	7440-23-5	ug/L	N	1/10/2006	1/31/2011	134	134	100	--	--	2,330	52,200	--	--	26,998	7
Sodium	7440-23-5	ug/L	Y	1/17/2006	1/31/2011	134	134	100	--	--	2,350	56,400	--	--	26,998	10
Specific Conductance	CONDUCT	uS/cm	N	1/3/2006	4/22/2011	353	353	100	--	--	0.35	783	--	--	541,000	--
Specific Conductance	CONDUCT	uS/cm	Y	3/7/2006	4/25/2011	35	35	100	--	--	162	651	--	--	541,000	--
Strontium	7440-24-6	ug/L	N	1/10/2006	1/31/2011	123	123	100	--	--	97	471	--	--	323	6
Strontium	7440-24-6	ug/L	Y	1/17/2006	1/31/2011	134	134	100	--	--	97	464	--	--	323	7
Styrene	100-42-5	ug/L	N	10/22/2009	6/16/2010	15	0	0	0.036	1.0	--	--	--	--	--	--
Styrene	100-42-5	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Sulfate	14808-79-8	ug/L	N	1/10/2006	2/24/2011	146	146	100	--	--	9,080	228,000	--	--	47,014	25
Sulfate	14808-79-8	ug/L	Y	7/2/2010	7/20/2010	19	19	100	--	--	25,200	47,100	--	--	47,014	1
Temperature	TEMPERATURE	Deg C	N	1/3/2006	4/22/2011	353	353	100	--	--	12	29	--	--	--	--
Temperature	TEMPERATURE	Deg C	Y	8/13/2007	4/25/2011	26	26	100	--	--	16	22	--	--	--	--
Tetrachloroethene	127-18-4	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.065	1.0	--	--	--	--	--	--
Tetrachloroethene	127-18-4	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Tetrahydrofuran	109-99-9	ug/L	N	4/12/2007	11/22/2010	31	0	0	1.1	7.5	--	--	--	--	--	--
Thallium	7440-28-0	ug/L	N	1/10/2006	2/24/2011	39	2	5.1	0.10	35	0.73	77	--	--	1.7	1
Thallium	7440-28-0	ug/L	Y	8/14/2009	2/24/2011	56	3	5.4	0.050	35	1.9	44	--	--	1.7	3
Thorium	7440-29-1	ug/L	N	1/17/2011	1/17/2011	1	0	0	0.20	0.20	--	--	--	--	0.50	--
Thorium	7440-29-1	ug/L	Y	1/17/2011	1/17/2011	1	0	0	0.20	0.20	--	--	--	--	0.50	--
Thorium-228	14274-82-9	pCi/L	N	1/10/2006	1/17/2006	6	0	0	0	20	--	--	--	--	--	--
Thorium-230	14269-63-7	pCi/L	N	1/10/2006	1/17/2006	3	0	0	-7.80E-02	0	--	--	--	--	--	--
Thorium-232	TH-232	pCi/L	N	1/10/2006	1/17/2006	6	0	0	0	63	--	--	--	--	--	--
Tin	7440-31-5	ug/L	N	1/10/2006	2/24/2011	34	0	0	0.10	39	--	--	--	--	22	--
Tin	7440-31-5	ug/L	Y	8/14/2009	2/24/2011	32	2	6.3	0.050	39	1.9	56	--	--	22	1
Titanium	7440-32-6	ug/L	N	8/12/2009	1/17/2011	9	2	22	4.0	4.0	1.2	26	--	--	30	--
Titanium	7440-32-6	ug/L	Y	8/14/2009	1/17/2011	7	1	14	4.0	4.0	1.0	1.0	--	--	30	--
Toluene	108-88-3	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.025	1.0	--	--	--	--	--	--
Toluene	108-88-3	ug/L	Y	7/2/2010	7/20/2010	19	2	11	1.0	1.0	1.2	3.8	--	--	--	--
Total organic carbon	TOC	ug/L	N	3/7/2006	10/10/2006	2	1	50	300	300	1,500	1,500	--	--	2,706	--
Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/L	N	8/14/2006	8/14/2006	1	0	0	75	75	--	--	--	--	--	--
Total petroleum hydrocarbons - kerosene range	TPHKEROSENE	ug/L	N	8/14/2006	8/14/2006	1	0	0	75	75	--	--	--	--	--	--
trans-1,2-Dichloroethylene	156-60-5	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.016	1.0	--	--	--	--	--	--
trans-1,2-Dichloroethylene	156-60-5	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	ug/L	N	10/22/2009	6/16/2010	15	0	0	0.083	1.0	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
trans-1,4-Dichloro-2-butene	110-57-6	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.29	0.29	--	--	--	--	--	--
trans-Chlordane	5103-74-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	--	--	--	--
Trichloroethene	79-01-6	ug/L	N	4/12/2007	11/22/2010	31	21	68	0.21	1.0	0.22	9.2	--	--	--	--
Trichloroethene	79-01-6	ug/L	Y	7/2/2010	7/20/2010	19	15	79	1.0	1.0	1.3	6.5	--	--	--	--
Trichloromonofluoromethane	75-69-4	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.041	0.11	--	--	--	--	--	--
Turbidity	TURBIDITY	NTU	N	1/3/2006	4/22/2011	350	350	100	--	--	0.050	1,000	--	--	--	--

Table L-8. Summary of Groundwater Analytes Without Ecological Screening Levels

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Turbidity	TURBIDITY	NTU	Y	8/13/2007	4/25/2011	26	26	100	--	--	0.29	1,000	--	--	--	--
Uranium	7440-61-1	ug/L	N	1/10/2006	1/17/2011	19	16	84	21	21	0.38	3.6	--	--	9.9	--
Uranium	7440-61-1	ug/L	Y	10/22/2009	1/17/2011	25	25	100	--	--	0.55	6.1	--	--	9.9	--
Uranium-233/234	U-233/234	pCi/L	N	1/10/2006	1/17/2006	3	3	100	--	--	0.72	1.9	--	--	--	--
Vanadium	7440-62-2	ug/L	N	1/10/2006	1/31/2011	133	40	30	4.1	17	1.8	26	--	--	12	27
Vanadium	7440-62-2	ug/L	Y	1/17/2006	1/31/2011	153	66	43	4.0	17	0.60	23	--	--	12	32
Vinyl acetate	108-05-4	ug/L	N	3/5/2010	6/16/2010	10	0	0	0.17	0.18	--	--	--	--	--	--
Vinyl chloride	75-01-4	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.032	1.0	--	--	--	--	--	--
Vinyl chloride	75-01-4	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Xylenes (total)	1330-20-7	ug/L	N	4/12/2007	11/22/2010	31	0	0	0.11	1.6	--	--	--	--	--	--
Xylenes (total)	1330-20-7	ug/L	Y	7/2/2010	7/20/2010	19	0	0	1.0	1.0	--	--	--	--	--	--
Zirconium	7440-67-7	ug/L	N	8/12/2009	8/12/2009	1	0	0	4.0	4.0	--	--	--	--	25	--
Zirconium	7440-67-7	ug/L	Y	8/14/2009	8/14/2009	1	0	0	4.0	4.0	--	--	--	--	25	--

Table L-9. Summary of Aquifer Tube Analytes Without Ecological Screening Levels

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
1,1,1-Trichloroethane	71-55-6	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.069	1.0	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.15	1.0	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.068	1.0	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	ug/L	N	8/15/2010	12/19/2010	18	0	0	0.083	1.0	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.10	1.0	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.12	1.0	--	--	--	--	--	--
1,4-Dioxane	123-91-1	ug/L	N	8/15/2010	8/15/2010	1	0	0	7.6	7.6	--	--	--	--	--	--
1-Butanol	71-36-3	ug/L	N	8/15/2010	12/19/2010	15	1	6.7	12	100	480	480	--	--	--	--
2-Butanone	78-93-3	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.52	1.0	--	--	--	--	--	--
4-Methyl-2-pentanone	108-10-1	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.12	1.0	--	--	--	--	--	--
Acetone	67-64-1	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.34	1.0	--	--	--	--	--	--
Alkalinity	ALKALINITY	ug/L	N	3/18/2009	1/28/2011	13	13	100	--	--	70,000	180,000	--	--	147,127	3
Antimony	7440-36-0	ug/L	N	1/11/2007	1/28/2011	81	1	1.2	0.30	60	35	35	--	--	55	--
Antimony	7440-36-0	ug/L	Y	2/7/2006	1/28/2011	69	0	0	0.30	60	--	--	--	--	55	--
Antimony-125	14234-35-6	pCi/L	N	1/28/2011	1/28/2011	3	0	0	-1.40E+01	4.1	--	--	--	--	--	--
Barium	7440-39-3	ug/L	N	1/11/2007	1/28/2011	81	81	100	--	--	17	81	--	--	105	--
Barium	7440-39-3	ug/L	Y	2/7/2006	1/28/2011	69	69	100	--	--	14	103	--	--	105	--
Benzene	71-43-2	ug/L	N	8/15/2010	12/19/2010	18	0	0	0.064	1.0	--	--	--	--	--	--
Beryllium	7440-41-7	ug/L	N	1/11/2007	1/28/2011	81	0	0	0.050	4.0	--	--	--	--	2.3	--
Beryllium	7440-41-7	ug/L	Y	2/7/2006	1/28/2011	69	0	0	0.050	4.0	--	--	--	--	2.3	--
Beryllium-7	13966-02-4	pCi/L	N	1/28/2011	1/28/2011	3	0	0	-6.50E+00	12	--	--	--	--	8.6	--
Bromide	24959-67-9	ug/L	N	1/11/2007	11/10/2008	41	19	46	30	250	52	210	--	--	124	4
Bromide	24959-67-9	ug/L	Y	1/11/2007	1/22/2007	2	1	50	45	45	53	53	--	--	124	--
Calcium	7440-70-2	ug/L	N	1/11/2007	1/28/2011	61	61	100	--	--	19,200	75,800	--	--	52,644	10
Calcium	7440-70-2	ug/L	Y	2/7/2006	1/28/2011	54	54	100	--	--	17,300	71,900	--	--	52,644	8
Carbon disulfide	75-15-0	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.051	1.0	--	--	--	--	--	--
Carbon tetrachloride	56-23-5	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.12	1.0	--	--	--	--	--	--
Carbon-14	14762-75-5	pCi/L	N	2/7/2006	2/22/2011	98	64	65	-2.91E+01	52	9.1	701	--	--	--	--
Cesium-134	13967-70-9	pCi/L	N	1/28/2011	1/28/2011	3	0	0	-6.10E+00	5.1	--	--	--	--	1.1	--
Cesium-137	10045-97-3	pCi/L	N	1/28/2011	1/28/2011	3	0	0	-2.50E+00	1.3	--	--	--	--	8.6	--
Chlorobenzene	108-90-7	ug/L	N	8/15/2010	12/19/2010	17	0	0	1.0	1.0	--	--	--	--	--	--
Chloroform	67-66-3	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.10	1.0	--	--	--	--	--	--
cis-1,2-Dichloroethylene	156-59-2	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.087	1.0	--	--	--	--	--	--
Cobalt	7440-48-4	ug/L	N	1/11/2007	1/28/2011	81	15	19	0.050	5.0	0.054	3.5	--	--	0.92	1
Cobalt	7440-48-4	ug/L	Y	2/7/2006	1/28/2011	69	10	14	0.050	4.0	0.13	6.9	--	--	0.92	3
Dibromochloromethane	124-48-1	ug/L	N	11/22/2010	11/22/2010	3	0	0	1.0	1.0	--	--	--	--	--	--
Dissolved oxygen	DO	ug/L	N	2/7/2006	3/31/2011	204	204	100	--	--	4,440	13,800	--	--	--	--
Dissolved oxygen	DO	ug/L	Y	1/22/2007	2/7/2007	4	4	100	--	--	7,800	9,600	--	--	--	--
Ethyl cyanide	107-12-0	ug/L	N	8/15/2010	12/19/2010	15	0	0	1.4	2.0	--	--	--	--	--	--
Ethylbenzene	100-41-4	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.086	1.0	--	--	--	--	--	--

Table L-9. Summary of Aquifer Tube Analytes Without Ecological Screening Levels

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Europium-152	14683-23-9	pCi/L	N	1/28/2011	1/28/2011	3	0	0	-5.40E+00	2.9	--	--	--	--	222	--
Fluoride	16984-48-8	ug/L	N	2/7/2006	3/31/2011	144	113	78	20	250	35	319	--	--	1,047	--
Fluoride	16984-48-8	ug/L	Y	1/11/2007	1/22/2007	2	2	100	--	--	71	159	--	--	1,047	--
Gross alpha	12587-46-1	pCi/L	N	2/7/2006	1/28/2011	64	17	27	-1.10E+00	2.5	1.1	4.4	--	--	--	--
Gross alpha	12587-46-1	pCi/L	Y	1/22/2007	1/22/2007	1	0	0	0.61	0.61	--	--	--	--	--	--
Gross beta	12587-47-2	pCi/L	N	2/7/2006	1/28/2011	64	55	86	1.1	3.4	2.1	110	--	--	3.1	47
Gross beta	12587-47-2	pCi/L	Y	1/22/2007	1/22/2007	1	1	100	--	--	18	18	--	--	3.1	1
Magnesium	7439-95-4	ug/L	N	1/11/2007	1/28/2011	61	61	100	--	--	4,520	15,600	--	--	24,816	--
Magnesium	7439-95-4	ug/L	Y	2/7/2006	1/28/2011	54	54	100	--	--	4,020	15,200	--	--	24,816	--
Manganese	7439-96-5	ug/L	N	1/11/2007	1/28/2011	63	42	67	0.10	6.0	0.81	264	--	--	39	10
Manganese	7439-96-5	ug/L	Y	2/7/2006	1/28/2011	57	25	44	0.10	6.0	0.30	192	--	--	39	8
Methylene chloride	75-09-2	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.11	1.0	--	--	--	--	--	--
Molybdenum	7439-98-7	ug/L	N	8/15/2010	1/28/2011	22	22	100	--	--	0.13	8.1	--	--	3.2	5
Molybdenum	7439-98-7	ug/L	Y	8/15/2010	1/28/2011	17	17	100	--	--	0.35	9.0	--	--	3.2	5
Nickel-63	13981-37-8	pCi/L	N	1/12/2010	1/14/2010	2	0	0	0.57	1.2	--	--	--	--	--	--
Nitrate	14797-55-8	ug/L	N	2/7/2006	3/31/2011	147	144	98	84	274	71	66,400	--	--	26,871	19
Nitrate	14797-55-8	ug/L	Y	1/11/2007	1/22/2007	2	2	100	--	--	2,870	7,700	--	--	26,871	--
Nitrite	14797-65-0	ug/L	N	2/7/2006	3/31/2011	144	7	4.9	9.9	250	40	427	--	--	94	4
Nitrite	14797-65-0	ug/L	Y	1/11/2007	1/22/2007	2	0	0	33	33	--	--	--	--	94	--
Oxidation Reduction Potential	EH	mV	N	2/7/2006	3/31/2011	213	213	100	--	--	-2.06E+02	311	--	--	--	--
Oxidation Reduction Potential	EH	mV	Y	1/22/2007	2/7/2007	4	4	100	--	--	178	226	--	--	--	--
pH Measurement	PH	unitless	N	2/7/2006	3/31/2011	216	216	100	--	--	6.1	8.6	--	--	8.2	20
pH Measurement	PH	unitless	Y	1/22/2007	2/7/2007	4	4	100	--	--	7.3	8.1	--	--	8.2	--
Phosphate	14265-44-2	ug/L	N	1/11/2007	11/10/2008	41	1	2.4	86	460	46	46	--	--	162	--
Phosphate	14265-44-2	ug/L	Y	1/11/2007	1/22/2007	2	0	0	86	86	--	--	--	--	162	--
Potassium	7440-09-7	ug/L	N	1/11/2007	1/28/2011	61	61	100	--	--	691	5,280	--	--	9,122	--
Potassium	7440-09-7	ug/L	Y	2/7/2006	1/28/2011	54	51	94	1,500	1,650	716	5,100	--	--	9,122	--
Potassium-40	13966-00-2	pCi/L	N	1/28/2011	1/28/2011	3	0	0	-6.90E+01	-9.10E+00	--	--	--	--	203	--
Ruthenium-106	13967-48-1	pCi/L	N	1/28/2011	1/28/2011	3	0	0	-2.00E+01	1.7	--	--	--	--	128	--
Sodium	7440-23-5	ug/L	N	1/11/2007	1/28/2011	61	61	100	--	--	2,400	15,200	--	--	26,998	--
Sodium	7440-23-5	ug/L	Y	2/7/2006	1/28/2011	54	54	100	--	--	2,070	11,600	--	--	26,998	--
Specific Conductance	CONDUCT	uS/cm	N	2/7/2006	3/31/2011	215	215	100	--	--	108	558	--	--	541,000	--
Specific Conductance	CONDUCT	uS/cm	Y	1/22/2007	2/7/2007	4	4	100	--	--	186	434	--	--	541,000	--
Strontium	7440-24-6	ug/L	N	1/11/2007	1/28/2011	63	63	100	--	--	76	299	--	--	323	--
Strontium	7440-24-6	ug/L	Y	2/7/2006	1/28/2011	57	57	100	--	--	77	295	--	--	323	--
Sulfate	14808-79-8	ug/L	N	2/7/2006	3/31/2011	157	156	99	170	170	6,810	82,800	--	--	47,014	18
Sulfate	14808-79-8	ug/L	Y	1/11/2007	1/22/2007	2	2	100	--	--	11,000	40,000	--	--	47,014	--
Temperature	TEMPERATURE	Deg C	N	2/7/2006	3/31/2011	213	213	100	--	--	5.1	30	--	--	--	--
Temperature	TEMPERATURE	Deg C	Y	1/22/2007	2/7/2007	4	4	100	--	--	8.1	12	--	--	--	--
Tetrachloroethene	127-18-4	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.18	1.0	--	--	--	--	--	--

Table L-9. Summary of Aquifer Tube Analytes Without Ecological Screening Levels

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Tetrahydrofuran	109-99-9	ug/L	N	8/15/2010	12/19/2010	15	0	0	1.1	2.0	--	--	--	--	--	--
Thallium	7440-28-0	ug/L	N	8/15/2010	1/28/2011	22	1	4.6	0.10	0.10	0.98	0.98	--	--	1.7	--
Thallium	7440-28-0	ug/L	Y	8/15/2010	1/28/2011	15	1	6.7	0.050	0.10	1.3	1.3	--	--	1.7	--
Thorium	7440-29-1	ug/L	N	12/17/2010	12/17/2010	1	0	0	0.20	0.20	--	--	--	--	0.50	--
Thorium	7440-29-1	ug/L	Y	12/17/2010	12/17/2010	2	0	0	0.20	0.20	--	--	--	--	0.50	--
Tin	7440-31-5	ug/L	N	8/15/2010	1/28/2011	22	1	4.6	0.10	0.10	0.94	0.94	--	--	22	--
Tin	7440-31-5	ug/L	Y	8/15/2010	1/28/2011	17	0	0	0.050	2.0	--	--	--	--	22	--
Titanium	7440-32-6	ug/L	N	1/28/2011	1/28/2011	3	0	0	4.0	4.0	--	--	--	--	30	--
Titanium	7440-32-6	ug/L	Y	1/28/2011	1/28/2011	3	0	0	4.0	4.0	--	--	--	--	30	--
Toluene	108-88-3	ug/L	N	8/15/2010	12/19/2010	18	0	0	0.072	1.0	--	--	--	--	--	--
trans-1,2-Dichloroethylene	156-60-5	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.083	1.0	--	--	--	--	--	--
Trichloroethene	79-01-6	ug/L	N	8/15/2010	12/19/2010	18	0	0	0.25	1.0	--	--	--	--	--	--
Turbidity	TURBIDITY	NTU	N	11/8/2007	3/31/2011	160	160	100	--	--	0.10	624	--	--	--	--
Uranium	7440-61-1	ug/L	N	12/17/2010	12/17/2010	1	1	100	--	--	1.6	1.6	--	--	9.9	--
Vanadium	7440-62-2	ug/L	N	1/11/2007	1/28/2011	63	28	44	5.9	17	1.8	24	--	--	12	8
Vanadium	7440-62-2	ug/L	Y	2/7/2006	1/28/2011	57	21	37	5.9	17	1.6	26	--	--	12	3
Vinyl chloride	75-01-4	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.084	1.0	--	--	--	--	--	--
Xylenes (total)	1330-20-7	ug/L	N	8/15/2010	12/19/2010	15	0	0	0.20	1.0	--	--	--	--	--	--

Table L-10. Summary of Pore Water Analytes Without Ecological Screening Levels'

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
1,2,4-Trichlorobenzene	N	120-82-1	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
1,2-Dichlorobenzene	N	95-50-1	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
1,3-Dichlorobenzene	N	541-73-1	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
1,4-Dichlorobenzene	N	106-46-7	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
2,4,5-Trichlorophenol	N	95-95-4	ug/L	1/25/2006	12/16/2006	6	0	0	25	31	--	--	--	--	--	--
2,4,6-Trichlorophenol	N	88-06-2	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
2,4-Dichlorophenol	N	120-83-2	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
2,4-Dimethylphenol	N	105-67-9	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
2,4-Dinitrophenol	N	51-28-5	ug/L	1/25/2006	12/16/2006	6	0	0	25	31	--	--	--	--	--	--
2,4-Dinitrotoluene	N	121-14-2	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
2,6-Dinitrotoluene	N	606-20-2	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
2-Chloronaphthalene	N	91-58-7	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
2-Chlorophenol	N	95-57-8	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
2-Methylnaphthalene	N	91-57-6	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
2-Methylphenol (cresol, o-)	N	95-48-7	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
2-Nitroaniline	N	88-74-4	ug/L	1/25/2006	12/16/2006	6	0	0	25	31	--	--	--	--	--	--
2-Nitrophenol	N	88-75-5	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
3,3'-Dichlorobenzidine	N	91-94-1	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
3+4 Methylphenol (cresol, m+p)	N	65794-96-9	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
3-Nitroaniline	N	99-09-2	ug/L	1/25/2006	12/16/2006	6	0	0	25	31	--	--	--	--	--	--
4,4'-DDD (Dichlorodiphenyldichloroethane)	N	72-54-8	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	--	--	--	--
4,4'-DDE (Dichlorodiphenyldichloroethylene)	N	72-55-9	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	N	534-52-1	ug/L	1/25/2006	12/16/2006	6	0	0	25	31	--	--	--	--	--	--
4-Bromophenylphenyl ether	N	101-55-3	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
4-Chloro-3-methylphenol	N	59-50-7	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
4-Chloroaniline	N	106-47-8	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
4-Chlorophenylphenyl ether	N	7005-72-3	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
4-Nitroaniline	N	100-01-6	ug/L	1/25/2006	12/16/2006	6	0	0	25	31	--	--	--	--	--	--
4-Nitrophenol	N	100-02-7	ug/L	1/25/2006	12/16/2006	6	0	0	25	31	--	--	--	--	--	--
Acenaphthene	N	83-32-9	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Acenaphthylene	N	208-96-8	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Alkalinity	N	ALKALINITY	ug/L	1/25/2006	12/16/2006	13	12	92	500	500	60,000	116,000	--	--	147,127	--
Alpha-BHC	N	319-84-6	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	--	--	--	--
Americium-241	N	14596-10-2	pCi/L	1/25/2006	12/16/2006	6	0	0	25	250	--	--	--	--	7.70E-05	--
Anthracene	N	120-12-7	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Antimony	N	7440-36-0	ug/L	1/25/2006	12/16/2006	7	0	0	2.5	4.0	--	--	--	--	55	--
Antimony-125	N	14234-35-6	pCi/L	1/25/2006	12/16/2006	6	0	0	22	73	--	--	--	--	--	--
Barium	N	7440-39-3	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	26	39	--	--	105	--
Benzo(a)anthracene	N	56-55-3	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Benzo(a)pyrene	N	50-32-8	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Benzo(b)fluoranthene	N	205-99-2	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Benzo(ghi)perylene	N	191-24-2	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Benzo(k)fluoranthene	N	207-08-9	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Beryllium	N	7440-41-7	ug/L	1/25/2006	12/16/2006	7	0	0	0.10	0.20	--	--	--	--	2.3	--
Beryllium-7	N	13966-02-4	pCi/L	1/25/2006	12/16/2006	6	0	0	26	290	--	--	--	--	8.6	--
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	N	319-85-7	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	--	--	--	--
Bis(2-chloro-1-methylethyl)ether	N	108-60-1	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Bis(2-Chloroethoxy)methane	N	111-91-1	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--

Table L-10. Summary of Pore Water Analytes Without Ecological Screening Levels'

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Bis(2-chloroethyl) ether	N	111-44-4	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Bis(2-ethylhexyl) phthalate	N	117-81-7	ug/L	1/25/2006	12/16/2006	6	6	100	--	--	0.60	2.0	--	--	--	--
Bismuth	N	7440-69-9	ug/L	1/25/2006	12/16/2006	7	0	0	4.0	6.1	--	--	--	--	--	--
Boron	N	7440-42-8	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	6.2	26	--	--	36	--
Bromide	N	24959-67-9	ug/L	1/25/2006	12/16/2006	6	0	0	250	250	--	--	--	--	124	--
Butylbenzylphthalate	N	85-68-7	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Calcium	N	7440-70-2	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	20,600	46,500	--	--	52,644	--
Calculated Total Uranium	N	calc_tot_U	ug/L	1/25/2006	12/16/2006	6	6	100	--	--	0.25	1.3	--	--	--	--
Carbazole	N	86-74-8	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Carbon-14	N	14762-75-5	pCi/L	1/25/2006	12/16/2006	6	0	0	18	76	--	--	--	--	--	--
Ceriodaphnia Number Young per Female	N	CERIO_YOUNG_FEM	Avg # youn	1/25/2006	12/16/2006	7	7	100	--	--	24	32	--	--	--	--
Ceriodaphnia Survival	N	CERIO_SURV	%	1/25/2006	12/16/2006	7	7	100	--	--	90	100	--	--	--	--
Cesium-134	N	13967-70-9	pCi/L	1/25/2006	12/16/2006	6	0	0	13	35	--	--	--	--	1.1	--
Cesium-137	N	10045-97-3	pCi/L	1/25/2006	12/16/2006	6	0	0	11	29	--	--	--	--	8.6	--
Chlorine	N	7782-50-5	ug/L	1/25/2006	12/16/2006	7	3	43	20	20	30	60	--	--	--	--
Chrysene	N	218-01-9	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Cobalt	N	7440-48-4	ug/L	1/25/2006	12/16/2006	7	0	0	0.50	1.2	--	--	--	--	0.92	--
Delta-BHC	N	319-86-8	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	--	--	--	--
Dibenz[a,h]anthracene	N	53-70-3	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Dibenzofuran	N	132-64-9	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Diethylphthalate	N	84-66-2	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Dimethyl phthalate	N	131-11-3	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Di-n-butylphthalate	N	84-74-2	ug/L	1/25/2006	12/16/2006	6	3	50	10	10	1.0	2.0	--	--	--	--
Di-n-octylphthalate	N	117-84-0	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Dissolved oxygen	N	DO	ug/L	1/25/2006	12/16/2006	21	21	100	--	--	7,750	16,500	--	--	--	--
Endosulfan sulfate	N	1031-07-8	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	--	--	--	--
Endrin aldehyde	N	7421-93-4	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	--	--	--	--
Endrin ketone	N	53494-70-5	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	--	--	--	--
Europium-152	N	14683-23-9	pCi/L	1/25/2006	12/16/2006	6	0	0	26	86	--	--	--	--	222	--
Fluoranthene	N	206-44-0	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Fluorene	N	86-73-7	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Fluoride	N	16984-48-8	ug/L	1/25/2006	12/16/2006	6	0	0	250	250	--	--	--	--	1,047	--
gamma-Chlordane	N	5566-34-7	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	--	--	--	--
Hardness	N	HARDNESS	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	74,000	170,000	--	--	--	--
Hexachlorobenzene	N	118-74-1	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Hexachlorobutadiene	N	87-68-3	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Hexachlorocyclopentadiene	N	77-47-4	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Hexachloroethane	N	67-72-1	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	N	193-39-5	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Isophorone	N	78-59-1	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Lithium	N	7439-93-2	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	1.1	2.6	--	--	11,321	--
Magnesium	N	7439-95-4	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	4,880	10,400	--	--	24,816	--
Manganese	N	7439-96-5	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	0.90	208	--	--	39	2
Molybdenum	N	7439-98-7	ug/L	1/25/2006	12/16/2006	7	6	86	1.6	1.6	1.4	3.4	--	--	3.2	1
Naphthalene	N	91-20-3	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Nitrobenzene	N	98-95-3	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Nitrogen in ammonia	N	NH3-N	ug/L	1/25/2006	12/16/2006	12	8	67	100	100	10	150	--	--	--	--
Nitrogen in Nitrate	N	NO3-N	ug/L	1/25/2006	12/16/2006	6	6	100	--	--	81	4,945	--	--	--	--

Table L-10. Summary of Pore Water Analytes Without Ecological Screening Levels'

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Nitrogen in Nitrite	N	NO2-N	ug/L	1/25/2006	12/16/2006	6	0	0	76	76	--	--	--	--	--	--
Nitrogen in Nitrite and Nitrate	N	NO2+NO3-N	ug/L	1/25/2006	12/16/2006	6	6	100	--	--	100	5,200	--	--	--	--
Nitrogen, Kjeldahl total	N	N-KJELDAHL	ug/L	1/25/2006	12/16/2006	6	1	17	100	100	190	190	--	--	--	--
n-Nitrosodi-n-dipropylamine	N	621-64-7	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
n-Nitrosodiphenylamine	N	86-30-6	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
pH Measurement	N	PH	unitless	1/25/2006	12/16/2006	21	21	100	--	--	7.2	9.4	--	--	8.2	6
Phenanthrene	N	85-01-8	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Phenol	N	108-95-2	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Phosphate	N	14265-44-2	ug/L	1/25/2006	12/16/2006	6	0	0	250	250	--	--	--	--	162	--
Phosphorus	N	7723-14-0	ug/L	1/25/2006	12/16/2006	7	3	43	8.3	13	21	31	--	--	--	--
Potassium	N	7440-09-7	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	748	2,650	--	--	9,122	--
Potassium-40	N	13966-00-2	pCi/L	1/25/2006	12/16/2006	6	0	0	0	700	--	--	--	--	203	--
Pyrene	N	129-00-0	ug/L	1/25/2006	12/16/2006	6	0	0	10	12	--	--	--	--	--	--
Radium-226	N	13982-63-3	pCi/L	1/25/2006	12/16/2006	6	0	0	-2.18E-01	0.25	--	--	--	--	1.1	--
Radium-228	N	15262-20-1	pCi/L	1/25/2006	12/16/2006	6	0	0	-1.54E+00	0.75	--	--	--	--	--	--
Ruthenium-106	N	13967-48-1	pCi/L	1/25/2006	12/16/2006	6	0	0	79	260	--	--	--	--	128	--
Silicon	N	7440-21-3	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	2,460	11,500	--	--	33,949	--
Sodium	N	7440-23-5	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	2,220	7,950	--	--	26,998	--
Specific Conductance	N	CONDUCT	uS/cm	1/25/2006	12/16/2006	21	21	100	--	--	156	337	--	--	541,000	--
Strontium	N	7440-24-6	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	100	214	--	--	323	--
Sulfate	N	14808-79-8	ug/L	1/25/2006	12/16/2006	6	6	100	--	--	10,200	51,700	--	--	47,014	1
Temperature	N	TEMPERATURE	Deg C	1/25/2006	12/16/2006	21	21	100	--	--	3.8	20	--	--	--	--
Thallium	N	7440-28-0	ug/L	1/25/2006	12/16/2006	7	0	0	5.5	6.4	--	--	--	--	1.7	--
Thorium-228	N	14274-82-9	pCi/L	1/25/2006	12/16/2006	6	0	0	-2.70E-02	0.041	--	--	--	--	--	--
Thorium-230	N	14269-63-7	pCi/L	1/25/2006	12/16/2006	6	0	0	-8.10E-02	0.019	--	--	--	--	--	--
Thorium-232	N	TH-232	pCi/L	1/25/2006	12/16/2006	6	0	0	-1.90E-02	0	--	--	--	--	--	--
Tin	N	7440-31-5	ug/L	1/25/2006	12/16/2006	7	1	14	3.5	5.2	5.5	5.5	--	--	22	--
Total dissolved solids	N	TDS	ug/L	1/25/2006	12/16/2006	6	6	100	--	--	92,000	220,000	--	--	258,189	--
Total organic carbon	N	TOC	ug/L	1/25/2006	12/16/2006	5	5	100	--	--	900	3,800	--	--	2,706	1
Total petroleum hydrocarbons	N	TPH	ug/L	1/25/2006	12/16/2006	6	0	0	1,000	2,000	--	--	--	--	--	--
Total petroleum hydrocarbons - diesel range	N	TPHDIESEL	ug/L	1/25/2006	12/16/2006	6	2	33	101	102	31	64	--	--	--	--
Total petroleum hydrocarbons - gasoline range	N	TPHGASOLINE	ug/L	1/25/2006	12/16/2006	6	0	0	30	30	--	--	--	--	--	--
Total suspended solids	N	TSS	ug/L	1/25/2006	12/16/2006	6	0	0	5,000	5,000	--	--	--	--	--	--
Uranium	N	7440-61-1	ug/L	1/25/2006	12/16/2006	7	0	0	14	21	--	--	--	--	9.9	--
Vanadium	N	7440-62-2	ug/L	1/25/2006	12/16/2006	7	4	57	0.90	0.90	1.9	5.3	--	--	12	--

Table L-11. Summary of Seep/Spring Analytes Without Ecological Screening Levels

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
1,1,1-Trichloroethane	N	71-55-6	ug/L	10/25/1999	11/10/2003	9	0	0	0.14	0.31	--	--	--	--	--	--
1,1,2-Trichloroethane	N	79-00-5	ug/L	10/25/1999	11/10/2003	9	1	11	0.050	0.31	0.76	0.76	--	--	--	--
1,1-Dichloroethane	N	75-34-3	ug/L	10/25/1999	11/10/2003	9	0	0	0.13	0.25	--	--	--	--	--	--
1,1-Dichloroethene	N	75-35-4	ug/L	10/17/2000	10/17/2000	1	0	0	0.23	0.23	--	--	--	--	--	--
1,2-Dichloroethane	N	107-06-2	ug/L	10/25/1999	11/10/2003	9	1	11	0.080	0.27	0.88	0.88	--	--	--	--
1,4-Dichlorobenzene	N	106-46-7	ug/L	9/5/1995	11/10/2003	10	1	10	0.11	0.25	0.62	0.62	--	--	--	--
1-Butanol	N	71-36-3	ug/L	10/25/1999	11/10/2003	9	0	0	4.6	7.0	--	--	--	--	--	--
2-Butanone	N	78-93-3	ug/L	10/25/1999	11/10/2003	9	0	0	0.29	0.89	--	--	--	--	--	--
4-Methyl-2-pentanone	N	108-10-1	ug/L	10/25/1999	11/10/2003	9	0	0	0.15	1.3	--	--	--	--	--	--
Acetone	N	67-64-1	ug/L	10/25/1999	11/10/2003	9	3	33	0.30	4.0	1.4	6.2	--	--	--	--
Antimony	N	7440-36-0	ug/L	10/17/2000	10/11/2004	13	11	85	30	39	0.11	0.22	--	--	55	--
Antimony	Y	7440-36-0	ug/L	10/21/2002	10/11/2004	7	3	43	29	39	0.13	0.29	--	--	55	--
Antimony-125	N	14234-35-6	pCi/L	9/26/1993	10/11/2004	16	0	0	-3.14E+00	3.1	--	--	--	--	--	--
Barium	N	7440-39-3	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	20	120	--	--	105	1
Barium	Y	7440-39-3	ug/L	10/21/2002	11/10/2003	4	4	100	--	--	19	35	--	--	105	--
Benzene	N	71-43-2	ug/L	10/25/1999	11/10/2003	9	0	0	0.070	0.23	--	--	--	--	--	--
Beryllium	N	7440-41-7	ug/L	10/17/2000	10/11/2004	13	3	23	0.0098	0.68	0.013	0.049	--	--	2.3	--
Beryllium	Y	7440-41-7	ug/L	10/21/2002	10/11/2004	7	0	0	0.0098	0.68	--	--	--	--	2.3	--
Beryllium-7	N	13966-02-4	pCi/L	9/26/1993	10/11/2004	17	1	5.9	-2.05E+01	35	13	13	--	--	8.6	1
Calcium	N	7440-70-2	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	17,000	44,000	--	--	52,644	--
Calcium	Y	7440-70-2	ug/L	10/21/2002	11/10/2003	4	4	100	--	--	16,600	36,900	--	--	52,644	--
Calculated Total Uranium	N	calc_tot_U	ug/L	9/26/1993	9/16/2002	4	4	100	--	--	1.6	5.9	--	--	--	--
Carbon disulfide	N	75-15-0	ug/L	10/25/1999	11/10/2003	9	0	0	0.13	0.43	--	--	--	--	--	--
Carbon tetrachloride	N	56-23-5	ug/L	10/25/1999	11/10/2003	9	1	11	0.15	0.33	4.1	4.1	--	--	--	--
Carbon-14	N	14762-75-5	pCi/L	10/20/2003	11/10/2003	2	2	100	--	--	97	608	--	--	--	--
Cerium/Praseodymium-144	N	CE/PR-144	pCi/L	9/26/1993	9/26/1993	2	0	0	-3.94E+00	2.4	--	--	--	--	--	--
Cesium-134	N	13967-70-9	pCi/L	9/26/1993	10/11/2004	17	0	0	-2.35E+00	1.1	--	--	--	--	1.1	--
Cesium-137	N	10045-97-3	pCi/L	9/26/1993	10/11/2004	17	1	5.9	-4.30E-01	2.2	3.2	3.2	--	--	8.6	--
Chlorobenzene	N	108-90-7	ug/L	10/17/2000	10/17/2000	1	0	0	0.28	0.28	--	--	--	--	--	--
Chloroform	N	67-66-3	ug/L	10/25/1999	11/10/2003	9	5	56	0.070	0.23	0.20	4.2	--	--	--	--
cis-1,2-Dichloroethylene	N	156-59-2	ug/L	10/25/1999	11/10/2003	9	0	0	0.060	0.24	--	--	--	--	--	--
Cobalt	N	7440-48-4	ug/L	10/21/2002	11/10/2003	2	0	0	4.8	5.0	--	--	--	--	0.92	--
Cobalt	Y	7440-48-4	ug/L	10/21/2002	11/10/2003	4	0	0	4.5	5.0	--	--	--	--	0.92	--
Ethyl cyanide	N	107-12-0	ug/L	10/25/1999	11/10/2003	9	0	0	1.3	2.6	--	--	--	--	--	--
Ethylbenzene	N	100-41-4	ug/L	9/16/2002	11/10/2003	4	0	0	0.14	0.24	--	--	--	--	--	--
Europium-152	N	14683-23-9	pCi/L	10/20/2003	10/11/2004	4	0	0	-1.39E+00	8.4	--	--	--	--	222	--
Fluoride	N	16984-48-8	ug/L	9/5/1995	11/10/2003	12	11	92	31	31	91	460	--	--	1,047	--
Gross alpha	N	12587-46-1	pCi/L	9/26/1993	10/11/2004	24	12	50	0.0065	1.5	0.56	5.0	--	--	--	--
Gross beta	N	12587-47-2	pCi/L	9/26/1993	10/11/2004	23	22	96	1.4	1.4	1.8	8.5	--	--	3.1	20
Magnesium	N	7439-95-4	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	4,110	11,000	--	--	24,816	--
Magnesium	Y	7439-95-4	ug/L	10/21/2002	11/10/2003	4	4	100	--	--	4,040	6,960	--	--	24,816	--
Manganese	N	7439-96-5	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	9.2	330	--	--	39	2
Manganese	Y	7439-96-5	ug/L	10/21/2002	11/10/2003	4	2	50	0.81	1.2	1.4	3.2	--	--	39	--
Methylene chloride	N	75-09-2	ug/L	10/25/1999	11/10/2003	9	2	22	0.24	0.41	0.31	0.48	--	--	--	--
Nitrogen in Nitrate	N	NO3-N	ug/L	9/5/1995	11/10/2003	13	13	100	--	--	28	12,700	--	--	--	--
Nitrogen in Nitrite	N	NO2-N	ug/L	11/3/1997	11/10/2003	11	0	0	1.0	17	--	--	--	--	--	--
pH Measurement	N	PH	unitless	11/10/2003	11/10/2003	3	3	100	--	--	6.9	7.6	--	--	8.2	--
Potassium	N	7440-09-7	ug/L	9/5/1995	11/10/2003	7	1	14	1,330	3,000	4,600	4,600	--	--	9,122	--
Potassium-40	N	13966-00-2	pCi/L	9/26/1993	10/11/2004	18	3	17	-9.50E+01	14	33	101	--	--	203	--
Ruthenium-106	N	13967-48-1	pCi/L	9/26/1993	10/11/2004	16	0	0	-2.16E+01	23	--	--	--	--	128	--
Sodium	N	7440-23-5	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	2,150	5,500	--	--	26,998	--

Table L-11. Summary of Seep/Spring Analytes Without Ecological Screening Levels

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Sodium	Y	7440-23-5	ug/L	10/21/2002	11/10/2003	4	4	100	--	--	2,130	5,710	--	--	26,998	--
Specific Conductance	N	CONDUCT	uS/cm	11/10/2003	11/10/2003	3	3	100	--	--	124	206	--	--	541,000	--
Strontium	N	7440-24-6	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	87	210	--	--	323	--
Strontium	Y	7440-24-6	ug/L	10/21/2002	11/10/2003	4	4	100	--	--	85	153	--	--	323	--
Sulfate	N	14808-79-8	ug/L	9/5/1995	11/10/2003	12	12	100	--	--	9,400	33,300	--	--	47,014	--
Tetrachloroethene	N	127-18-4	ug/L	10/25/1999	11/10/2003	9	0	0	0.17	0.57	--	--	--	--	--	--
Tetrahydrofuran	N	109-99-9	ug/L	10/25/1999	11/10/2003	9	0	0	1.5	2.3	--	--	--	--	--	--
Thallium	N	7440-28-0	ug/L	10/17/2000	10/11/2004	11	9	82	0.0035	0.0090	0.0083	0.061	--	--	1.7	--
Thallium	Y	7440-28-0	ug/L	10/20/2003	10/11/2004	3	2	67	0.0090	0.0090	0.0079	0.012	--	--	1.7	--
Toluene	N	108-88-3	ug/L	10/25/1999	11/10/2003	9	3	33	0.12	0.23	0.40	0.56	--	--	--	--
trans-1,2-Dichloroethylene	N	156-60-5	ug/L	10/25/1999	11/10/2003	9	0	0	0.11	0.26	--	--	--	--	--	--
Trichloroethene	N	79-01-6	ug/L	9/5/1995	11/10/2003	10	6	60	0.16	0.29	2.0	7.4	--	--	--	--
Uranium [radionuclide]	N	U_rad	pCi/L	9/16/2002	9/16/2002	1	1	100	--	--	4.7	4.7	--	--	--	--
Vanadium	N	7440-62-2	ug/L	9/5/1995	11/10/2003	3	1	33	5.0	9.7	33	33	--	--	12	1
Vanadium	Y	7440-62-2	ug/L	10/21/2002	11/10/2003	4	1	25	4.6	9.7	6.7	6.7	--	--	12	--
Vinyl chloride	N	75-01-4	ug/L	10/25/1999	11/10/2003	9	0	0	0.10	0.32	--	--	--	--	--	--
Xylenes (total)	N	1330-20-7	ug/L	10/25/1999	11/10/2003	9	0	0	0.28	0.79	--	--	--	--	--	--
Zinc-65	N	13982-39-3	pCi/L	9/26/1993	9/26/1993	2	0	0	-6.41E-01	-7.41E-02	--	--	--	--	--	--
Zirconium/Niobium-95	N	ZR/NB-95	pCi/L	9/26/1993	9/26/1993	2	0	0	-1.02E+00	0.44	--	--	--	--	--	--

Table L-12. Summary of Surface Water Analytes Without Ecological Screening Levels

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
1,2,4-Trichlorobenzene	N	120-82-1	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
1,2-Dichlorobenzene	N	95-50-1	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
1,3-Dichlorobenzene	N	541-73-1	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
1,4-Dichlorobenzene	N	106-46-7	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
2,4,5-Trichlorophenol	N	95-95-4	ug/L	1/25/2006	12/27/2006	4	0	0	25	26	--	--	--	--	--	--
2,4,6-Trichlorophenol	N	88-06-2	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
2,4-Dichlorophenol	N	120-83-2	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
2,4-Dimethylphenol	N	105-67-9	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
2,4-Dinitrophenol	N	51-28-5	ug/L	1/25/2006	12/27/2006	4	0	0	25	26	--	--	--	--	--	--
2,4-Dinitrotoluene	N	121-14-2	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
2,6-Dinitrotoluene	N	606-20-2	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
2-Chloronaphthalene	N	91-58-7	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
2-Chlorophenol	N	95-57-8	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
2-Methylnaphthalene	N	91-57-6	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
2-Methylphenol (cresol, o-)	N	95-48-7	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
2-Nitroaniline	N	88-74-4	ug/L	1/25/2006	12/27/2006	4	0	0	25	26	--	--	--	--	--	--
2-Nitrophenol	N	88-75-5	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
3,3'-Dichlorobenzidine	N	91-94-1	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
3+4 Methylphenol (cresol, m+p)	N	65794-96-9	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
3-Nitroaniline	N	99-09-2	ug/L	1/25/2006	12/27/2006	4	0	0	25	26	--	--	--	--	--	--
4,4'-DDD (Dichlorodiphenyldichloroethane)	N	72-54-8	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	--	--	--	--
4,4'-DDE (Dichlorodiphenyldichloroethylene)	N	72-55-9	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	N	534-52-1	ug/L	1/25/2006	12/27/2006	4	0	0	25	26	--	--	--	--	--	--
4-Bromophenylphenyl ether	N	101-55-3	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
4-Chloro-3-methylphenol	N	59-50-7	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
4-Chloroaniline	N	106-47-8	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
4-Chlorophenylphenyl ether	N	7005-72-3	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
4-Nitroaniline	N	100-01-6	ug/L	1/25/2006	12/27/2006	4	0	0	25	26	--	--	--	--	--	--
4-Nitrophenol	N	100-02-7	ug/L	1/25/2006	12/27/2006	4	0	0	25	26	--	--	--	--	--	--
Acenaphthene	N	83-32-9	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Acenaphthylene	N	208-96-8	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Alpha-BHC	N	319-84-6	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	--	--	--	--
Americium-241	N	14596-10-2	pCi/L	1/25/2006	12/27/2006	4	0	0	19	62	--	--	--	--	7.70E-05	--
Anthracene	N	120-12-7	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Antimony	N	7440-36-0	ug/L	1/25/2006	12/27/2006	4	0	0	2.5	4.0	--	--	--	--	55	--
Antimony-125	N	14234-35-6	pCi/L	1/25/2006	12/27/2006	4	0	0	14	42	--	--	--	--	--	--
Barium	N	7440-39-3	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	27	32	--	--	105	--
Benzo(a)anthracene	N	56-55-3	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Benzo(a)pyrene	N	50-32-8	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Benzo(b)fluoranthene	N	205-99-2	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Benzo(ghi)perylene	N	191-24-2	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Benzo(k)fluoranthene	N	207-08-9	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Beryllium	N	7440-41-7	ug/L	10/8/2003	12/27/2006	5	0	0	0.20	5.0	--	--	--	--	2.3	--
Beryllium-7	N	13966-02-4	pCi/L	1/25/2006	12/27/2006	4	0	0	-2.30E+01	190	--	--	--	--	8.6	--
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	N	319-85-7	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	--	--	--	--

Table L-12. Summary of Surface Water Analytes Without Ecological Screening Levels

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Bis(2-chloro-1-methylethyl)ether	N	108-60-1	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Bis(2-Chloroethoxy)methane	N	111-91-1	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Bis(2-chloroethyl) ether	N	111-44-4	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Bis(2-ethylhexyl) phthalate	N	117-81-7	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	0.50	1.8	--	--	--	--
Bismuth	N	7440-69-9	ug/L	1/25/2006	12/27/2006	4	0	0	4.0	6.1	--	--	--	--	--	--
Boron	N	7440-42-8	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	6.7	19	--	--	36	--
Bromide	N	24959-67-9	ug/L	1/25/2006	12/27/2006	4	0	0	250	250	--	--	--	--	124	--
Butylbenzylphthalate	N	85-68-7	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Calcium	N	7440-70-2	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	20,300	20,800	--	--	52,644	--
Calculated Total Uranium	N	calc_tot_U	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	0.098	0.69	--	--	--	--
Carbazole	N	86-74-8	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Carbon-14	N	14762-75-5	pCi/L	1/25/2006	12/27/2006	4	0	0	-2.30E+01	20	--	--	--	--	--	--
Cesium-134	N	13967-70-9	pCi/L	1/25/2006	12/27/2006	4	0	0	6.4	21	--	--	--	--	1.1	--
Cesium-137	N	10045-97-3	pCi/L	1/25/2006	12/27/2006	4	0	0	5.3	19	--	--	--	--	8.6	--
Chrysene	N	218-01-9	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Cobalt	N	7440-48-4	ug/L	1/25/2006	12/27/2006	4	0	0	0.50	1.2	--	--	--	--	0.92	--
Delta-BHC	N	319-86-8	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	--	--	--	--
Dibenz[a,h]anthracene	N	53-70-3	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Dibenzofuran	N	132-64-9	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Diethylphthalate	N	84-66-2	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Dimethyl phthalate	N	131-11-3	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Di-n-butylphthalate	N	84-74-2	ug/L	1/25/2006	12/27/2006	4	1	25	10	10	0.90	0.90	--	--	--	--
Di-n-octylphthalate	N	117-84-0	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Dissolved oxygen	N	DO	ug/L	1/25/2006	12/27/2006	8	8	100	--	--	9,150	13,620	--	--	--	--
Endosulfan sulfate	N	1031-07-8	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	--	--	--	--
Endrin aldehyde	N	7421-93-4	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	--	--	--	--
Endrin ketone	N	53494-70-5	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	--	--	--	--
Europium-152	N	14683-23-9	pCi/L	1/25/2006	12/27/2006	4	0	0	17	47	--	--	--	--	222	--
Fluoranthene	N	206-44-0	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Fluorene	N	86-73-7	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Fluoride	N	16984-48-8	ug/L	1/25/2006	12/27/2006	4	0	0	250	250	--	--	--	--	1,047	--
gamma-Chlordane	N	5566-34-7	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	--	--	--	--
Hexachlorobenzene	N	118-74-1	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Hexachlorobutadiene	N	87-68-3	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Hexachlorocyclopentadiene	N	77-47-4	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Hexachloroethane	N	67-72-1	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Highest Specific Conductance [uS/cm]	N	AQ_BASKET_CONDU	uS/cm	8/14/2007	8/14/2007	4	4	100	--	--	186	395	--	--	--	--
Indeno(1,2,3-cd)pyrene	N	193-39-5	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Isophorone	N	78-59-1	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Lithium	N	7439-93-2	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	1.2	2.6	--	--	11,321	--
Magnesium	N	7439-95-4	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	4,730	5,010	--	--	24,816	--
Manganese	N	7439-96-5	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	2.4	5.4	--	--	39	--
Molybdenum	N	7439-98-7	ug/L	1/25/2006	12/27/2006	4	1	25	1.3	1.6	2.0	2.0	--	--	3.2	--
Naphthalene	N	91-20-3	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Nitrobenzene	N	98-95-3	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--

Table L-12. Summary of Surface Water Analytes Without Ecological Screening Levels

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Nitrogen in Nitrate	N	NO3-N	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	104	438	--	--	--	--
Nitrogen in Nitrite	N	NO2-N	ug/L	1/25/2006	12/27/2006	4	0	0	76	76	--	--	--	--	--	--
Nitrogen in Nitrite and Nitrate	N	NO2+NO3-N	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	120	2,000	--	--	--	--
n-Nitrosodi-n-dipropylamine	N	621-64-7	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
n-Nitrosodiphenylamine	N	86-30-6	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
pH Measurement	N	PH	unitless	1/25/2006	12/27/2006	8	8	100	--	--	7.9	8.8	--	--	8.2	2
Phenanthrene	N	85-01-8	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Phenol	N	108-95-2	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Phosphate	N	14265-44-2	ug/L	1/25/2006	12/27/2006	4	0	0	250	250	--	--	--	--	162	--
Phosphorus	N	7723-14-0	ug/L	1/25/2006	12/27/2006	4	0	0	8.3	13	--	--	--	--	--	--
Potassium	N	7440-09-7	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	644	1,550	--	--	9,122	--
Potassium-40	N	13966-00-2	pCi/L	1/25/2006	12/27/2006	4	0	0	0.034	300	--	--	--	--	203	--
Pyrene	N	129-00-0	ug/L	1/25/2006	12/27/2006	4	0	0	10	10	--	--	--	--	--	--
Radium-226	N	13982-63-3	pCi/L	1/25/2006	12/27/2006	4	0	0	-1.72E-01	0.13	--	--	--	--	1.1	--
Radium-228	N	15262-20-1	pCi/L	1/25/2006	12/27/2006	4	0	0	-9.00E-02	0.73	--	--	--	--	--	--
Ruthenium-106	N	13967-48-1	pCi/L	1/25/2006	12/27/2006	4	0	0	49	160	--	--	--	--	128	--
Silicon	N	7440-21-3	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	2,150	2,640	--	--	33,949	--
Sodium	N	7440-23-5	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	2,010	2,660	--	--	26,998	--
Specific Conductance	N	CONDUCT	uS/cm	1/25/2006	12/27/2006	8	8	100	--	--	147	155	--	--	541,000	--
Strontium	N	7440-24-6	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	92	104	--	--	323	--
Sulfate	N	14808-79-8	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	9,800	42,300	--	--	47,014	--
Temperature	N	TEMPERATURE	Deg C	1/25/2006	12/27/2006	8	8	100	--	--	2.2	5.4	--	--	--	--
Thallium	N	7440-28-0	ug/L	1/25/2006	12/27/2006	4	0	0	5.6	6.4	--	--	--	--	1.7	--
Thorium-228	N	14274-82-9	pCi/L	1/25/2006	12/27/2006	4	0	0	-1.50E-02	0.065	--	--	--	--	--	--
Thorium-230	N	14269-63-7	pCi/L	1/25/2006	12/27/2006	4	0	0	-6.50E-02	0	--	--	--	--	--	--
Thorium-232	N	TH-232	pCi/L	1/25/2006	12/27/2006	4	0	0	-3.90E-02	0	--	--	--	--	--	--
Tin	N	7440-31-5	ug/L	1/25/2006	12/27/2006	4	0	0	3.6	5.2	--	--	--	--	22	--
Total organic carbon	N	TOC	ug/L	1/25/2006	1/29/2006	3	3	100	--	--	1,200	1,300	--	--	2,706	--
Total petroleum hydrocarbons	N	TPH	ug/L	1/25/2006	12/27/2006	4	0	0	1,000	2,000	--	--	--	--	--	--
Total petroleum hydrocarbons - diesel range	N	TPHDIESEL	ug/L	1/25/2006	12/27/2006	4	1	25	102	103	31	31	--	--	--	--
Total petroleum hydrocarbons - gasoline range	N	TPHGASOLINE	ug/L	1/25/2006	12/27/2006	4	1	25	30	30	6.7	6.7	--	--	--	--
Uranium	N	7440-61-1	ug/L	1/25/2006	12/27/2006	4	0	0	14	21	--	--	--	--	9.9	--
Vanadium	N	7440-62-2	ug/L	1/25/2006	12/27/2006	4	0	0	0.90	0.98	--	--	--	--	12	--

Table L-13. Summary of Groundwater Analytes That Were Not Detected

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.0010	--	--	--
Aldrin	309-00-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.0019	--	--	--
Alpha-Chlordane	5103-71-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.0043	--	--	--
Aroclor-1016	12674-11-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.40	0.41	--	--	0.014	--	--	--
Aroclor-1221	11104-28-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.40	0.41	--	--	0.014	--	--	--
Aroclor-1232	11141-16-5	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.40	0.41	--	--	0.014	--	--	--
Aroclor-1242	53469-21-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.40	0.41	--	--	0.014	--	--	--
Aroclor-1248	12672-29-6	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.40	0.41	--	--	0.014	--	--	--
Aroclor-1254	11097-69-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.40	0.41	--	--	0.014	--	--	--
Aroclor-1260	11096-82-5	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.40	0.41	--	--	0.014	--	--	--
Cadmium	7440-43-9	ug/L	Y	1/17/2006	2/24/2011	170	0	0	0.10	4.0	--	--	0.25	--	0.92	--
Cobalt-60	10198-40-0	pCi/L	N	1/10/2006	1/31/2011	49	0	0	-9.30E+00	14	--	--	2.70E+09	--	0.023	--
Dieldrin	60-57-1	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.0019	--	--	--
Endosulfan I	959-98-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.056	--	--	--
Endosulfan II	33213-65-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.056	--	--	--
Endrin	72-20-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.0023	--	--	--
Europium-154	15585-10-1	pCi/L	N	1/10/2006	1/31/2011	49	0	0	-2.90E+01	38	--	--	2.16E+10	--	70	--
Europium-155	14391-16-3	pCi/L	N	1/10/2006	1/31/2011	49	0	0	-1.50E+01	40	--	--	2.70E+11	--	5.9	--
Gamma-BHC (Lindane)	58-89-9	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.080	--	--	--
Heptachlor	76-44-8	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.0038	--	--	--
Heptachlor epoxide	1024-57-3	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.0038	--	--	--
Mercury	7439-97-6	ug/L	N	1/10/2006	1/17/2011	20	0	0	0.016	0.10	--	--	0.012	--	0.0030	--
Methoxychlor	72-43-5	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.050	0.051	--	--	0.030	--	--	--
Pentachlorophenol	87-86-5	ug/L	N	1/10/2006	1/17/2006	3	0	0	25	26	--	--	13	--	--	--
Technetium-99	14133-76-7	pCi/L	Y	8/14/2009	4/25/2011	4	0	0	-1.60E+00	-2.00E-01	--	--	2.43E+12	--	0.83	--
Toxaphene	8001-35-2	ug/L	N	1/10/2006	1/17/2006	3	0	0	0.50	0.51	--	--	2.00E-04	--	--	--

Table L-14. Summary of Aquifer Tube Analytes That Were Not Detected

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Cadmium	7440-43-9	ug/L	Y	2/7/2006	1/28/2011	69	0	0	0.055	4.0	--	--	0.25	--	0.92	--
Cobalt-60	10198-40-0	pCi/L	N	1/28/2011	1/28/2011	3	0	0	1.4	3.2	--	--	2.70E+09	--	0.023	--
Europium-154	15585-10-1	pCi/L	N	1/28/2011	1/28/2011	3	0	0	0.96	3.1	--	--	2.16E+10	--	70	--
Europium-155	14391-16-3	pCi/L	N	1/28/2011	1/28/2011	3	0	0	-3.30E+00	4.1	--	--	2.70E+11	--	5.9	--
Mercury	7439-97-6	ug/L	N	8/15/2010	12/17/2010	3	0	0	0.10	0.10	--	--	0.012	--	0.0030	--
Selenium	7782-49-2	ug/L	Y	8/15/2010	1/28/2011	17	0	0	0.30	1.3	--	--	5.0	--	11	--
Silver	7440-22-4	ug/L	N	1/11/2007	1/28/2011	81	0	0	0.040	7.0	--	--	2.6	--	5.3	--
Strontium-90	10098-97-2	pCi/L	Y	1/11/2007	1/22/2007	2	0	0	0.045	0.13	--	--	5.41E+10	--	0.0010	--

Table L-15. Summary of Pore Water Analytes That Were Not Detected

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
4,4'-DDT (Dichlorodiphenyltrichloroethane)	N	50-29-3	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	0.0010	--	--	--
Aldrin	N	309-00-2	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	0.0019	--	--	--
Alpha-Chlordane	N	5103-71-9	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	0.0043	--	--	--
Aroclor-1016	N	12674-11-2	ug/L	1/25/2006	12/16/2006	6	0	0	0.40	0.50	--	--	0.014	--	--	--
Aroclor-1221	N	11104-28-2	ug/L	1/25/2006	12/16/2006	6	0	0	0.40	0.50	--	--	0.014	--	--	--
Aroclor-1232	N	11141-16-5	ug/L	1/25/2006	12/16/2006	6	0	0	0.40	0.50	--	--	0.014	--	--	--
Aroclor-1242	N	53469-21-9	ug/L	1/25/2006	12/16/2006	6	0	0	0.40	0.50	--	--	0.014	--	--	--
Aroclor-1248	N	12672-29-6	ug/L	1/25/2006	12/16/2006	6	0	0	0.40	0.50	--	--	0.014	--	--	--
Aroclor-1254	N	11097-69-1	ug/L	1/25/2006	12/16/2006	6	0	0	0.40	0.50	--	--	0.014	--	--	--
Aroclor-1260	N	11096-82-5	ug/L	1/25/2006	12/16/2006	6	0	0	0.40	0.50	--	--	0.014	--	--	--
Cobalt-60	N	10198-40-0	pCi/L	1/25/2006	12/16/2006	6	0	0	11	29	--	--	2.70E+09	--	0.023	--
Dieldrin	N	60-57-1	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	0.0019	--	--	--
Endosulfan I	N	959-98-8	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	0.056	--	--	--
Endosulfan II	N	33213-65-9	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	0.056	--	--	--
Endrin	N	72-20-8	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	0.0023	--	--	--
Europium-154	N	15585-10-1	pCi/L	1/25/2006	12/16/2006	6	0	0	30	91	--	--	2.16E+10	--	70	--
Europium-155	N	14391-16-3	pCi/L	1/25/2006	12/16/2006	6	0	0	29	100	--	--	2.70E+11	--	5.9	--
Gamma-BHC (Lindane)	N	58-89-9	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	0.080	--	--	--
Heptachlor	N	76-44-8	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	0.0038	--	--	--
Heptachlor epoxide	N	1024-57-3	ug/L	1/25/2006	12/16/2006	6	0	0	0.050	0.50	--	--	0.0038	--	--	--
Lead	N	7439-92-1	ug/L	1/25/2006	12/16/2006	7	0	0	1.2	3.1	--	--	2.1	--	0.92	--
Mercury	N	7439-97-6	ug/L	1/25/2006	12/16/2006	7	0	0	0.10	0.10	--	--	0.012	--	0.0030	--
Pentachlorophenol	N	87-86-5	ug/L	1/25/2006	12/16/2006	6	0	0	25	31	--	--	13	--	--	--
Selenium	N	7782-49-2	ug/L	1/25/2006	12/16/2006	7	0	0	2.6	4.3	--	--	5.0	--	11	--
Silver	N	7440-22-4	ug/L	1/25/2006	12/16/2006	7	0	0	0.50	1.4	--	--	2.6	--	5.3	--
Strontium-90	N	10098-97-2	pCi/L	1/25/2006	12/16/2006	6	0	0	-1.97E-01	0.19	--	--	5.41E+10	--	0.0010	--
Toxaphene	N	8001-35-2	ug/L	1/25/2006	12/16/2006	6	0	0	0.50	0.62	--	--	2.00E-04	--	--	--

Table L-16. Summary of Seep/Spring Analytes That Were Not Detected

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Aluminum	Y	7429-90-5	ug/L	10/21/2002	11/10/2003	4	0	0	17	96	--	--	87	--	7.1	--
Europium-154	N	15585-10-1	pCi/L	9/26/1993	10/11/2004	17	0	0	-6.75E+00	10	--	--	2.16E+10	--	70	--
Europium-155	N	14391-16-3	pCi/L	9/26/1993	10/11/2004	17	0	0	-5.17E+00	2.2	--	--	2.70E+11	--	5.9	--
Silver	Y	7440-22-4	ug/L	10/21/2002	10/11/2004	7	0	0	0.0017	3.7	--	--	2.6	--	5.3	--

Table L-17. Summary of Surface Water Analytes That Were Not Detected

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
4,4'-DDT (Dichlorodiphenyltrichloroethane)	N	50-29-3	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.0010	--	--	--
Aldrin	N	309-00-2	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.0019	--	--	--
Alpha-Chlordane	N	5103-71-9	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.0043	--	--	--
Aluminum	N	7429-90-5	ug/L	1/25/2006	12/27/2006	4	0	0	31	111	--	--	87	--	7.1	--
Aroclor-1016	N	12674-11-2	ug/L	1/25/2006	12/27/2006	4	0	0	0.040	0.41	--	--	0.014	--	--	--
Aroclor-1221	N	11104-28-2	ug/L	1/25/2006	12/27/2006	4	0	0	0.040	0.41	--	--	0.014	--	--	--
Aroclor-1232	N	11141-16-5	ug/L	1/25/2006	12/27/2006	4	0	0	0.040	0.41	--	--	0.014	--	--	--
Aroclor-1242	N	53469-21-9	ug/L	1/25/2006	12/27/2006	4	0	0	0.040	0.41	--	--	0.014	--	--	--
Aroclor-1248	N	12672-29-6	ug/L	1/25/2006	12/27/2006	4	0	0	0.040	0.41	--	--	0.014	--	--	--
Aroclor-1254	N	11097-69-1	ug/L	1/25/2006	12/27/2006	4	0	0	0.040	0.41	--	--	0.014	--	--	--
Aroclor-1260	N	11096-82-5	ug/L	1/25/2006	12/27/2006	4	0	0	0.040	0.41	--	--	0.014	--	--	--
Arsenic	N	7440-38-2	ug/L	1/25/2006	12/27/2006	4	0	0	3.1	3.4	--	--	150	--	7.9	--
Cadmium	N	7440-43-9	ug/L	1/25/2006	12/27/2006	4	0	0	0.30	0.70	--	--	0.25	--	0.92	--
Chromium	N	7440-47-3	ug/L	10/8/2003	12/27/2006	5	0	0	1.2	100	--	--	65	--	2.4	--
Cobalt-60	N	10198-40-0	pCi/L	1/25/2006	12/27/2006	4	0	0	5.2	17	--	--	2.70E+09	--	0.023	--
Dieldrin	N	60-57-1	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.0019	--	--	--
Endosulfan I	N	959-98-8	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.056	--	--	--
Endosulfan II	N	33213-65-9	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.056	--	--	--
Endrin	N	72-20-8	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.0023	--	--	--
Europium-154	N	15585-10-1	pCi/L	1/25/2006	12/27/2006	4	0	0	14	68	--	--	2.16E+10	--	70	--
Europium-155	N	14391-16-3	pCi/L	1/25/2006	12/27/2006	4	0	0	19	44	--	--	2.70E+11	--	5.9	--
Gamma-BHC (Lindane)	N	58-89-9	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.080	--	--	--
Heptachlor	N	76-44-8	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.0038	--	--	--
Heptachlor epoxide	N	1024-57-3	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.0038	--	--	--
Hexavalent Chromium	N	18540-29-9	ug/L	1/25/2006	12/27/2006	4	0	0	3.0	3.0	--	--	10	--	--	--
Lead	N	7439-92-1	ug/L	1/25/2006	12/27/2006	4	0	0	1.6	3.1	--	--	2.1	--	0.92	--
Mercury	N	7439-97-6	ug/L	1/25/2006	12/27/2006	4	0	0	0.10	0.10	--	--	0.012	--	0.0030	--
Methoxychlor	N	72-43-5	ug/L	1/25/2006	12/27/2006	4	0	0	0.050	0.052	--	--	0.030	--	--	--
Pentachlorophenol	N	87-86-5	ug/L	1/25/2006	12/27/2006	4	0	0	25	26	--	--	13	--	--	--
Selenium	N	7782-49-2	ug/L	1/25/2006	12/27/2006	4	0	0	3.6	4.3	--	--	5.0	--	11	--
Silver	N	7440-22-4	ug/L	1/25/2006	12/27/2006	4	0	0	0.58	1.4	--	--	2.6	--	5.3	--
Technetium-99	N	14133-76-7	pCi/L	12/27/2006	12/27/2006	1	0	0	0.11	0.11	--	--	2.43E+12	--	0.83	--
Toxaphene	N	8001-35-2	ug/L	1/25/2006	12/27/2006	4	0	0	0.50	0.52	--	--	2.00E-04	--	--	--
Tritium	N	10028-17-8	pCi/L	6/22/1999	12/27/2006	5	0	0	-3.98E+01	5.8	--	--	5.41E+15	--	119	--
Uranium-235	N	15117-96-1	pCi/L	1/25/2006	12/27/2006	4	0	0	0	0.018	--	--	2.16E+08	--	--	--

Table L-18. Summary of Groundwater Analytes That Do Not Exceed an Ecological Screening Level

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Arsenic	7440-38-2	ug/L	N	1/10/2006	2/24/2011	40	23	58	0.80	65	0.86	6.1	150	--	7.9	--
Arsenic	7440-38-2	ug/L	Y	8/14/2009	2/24/2011	55	31	56	0.80	65	0.56	72	150	--	7.9	1
Chloride	16887-00-6	ug/L	N	1/10/2006	2/24/2011	146	146	100	--	--	1,000	43,400	230,000	--	15,630	44
Chloride	16887-00-6	ug/L	Y	7/2/2010	7/20/2010	19	19	100	--	--	6,060	36,600	230,000	--	15,630	6
Iron	7439-89-6	ug/L	Y	1/17/2006	1/31/2011	134	37	28	9.0	38	9.2	507	1,000	--	570	--
Nickel	7440-02-0	ug/L	Y	1/17/2006	1/31/2011	153	41	27	0.40	13	0.46	22	52	--	1.6	33
Selenium	7782-49-2	ug/L	N	1/10/2006	2/24/2011	39	10	26	0.60	45	0.69	1.7	5.0	--	11	--
Strontium-90	10098-97-2	pCi/L	N	1/3/2006	4/13/2011	168	55	33	-1.80E+01	1.3	0.98	170	5.41E+10	--	0.0010	55
Strontium-90	10098-97-2	pCi/L	Y	8/14/2009	4/25/2011	23	2	8.7	-7.50E+00	0.43	3.8	5.1	5.41E+10	--	0.0010	2
Technetium-99	14133-76-7	pCi/L	N	1/17/2006	4/13/2011	133	28	21	-1.60E+01	17	6.1	83	2.43E+12	--	0.83	28
Tritium	10028-17-8	pCi/L	N	1/3/2006	4/13/2011	218	164	75	-1.80E+02	200	340	286,000	5.41E+15	--	119	164
Tritium	10028-17-8	pCi/L	Y	8/14/2009	4/25/2011	23	23	100	--	--	390	17,000	5.41E+15	--	119	23
Uranium-235	15117-96-1	pCi/L	N	1/10/2006	1/17/2006	6	2	33	0	54	0.073	0.075	2.16E+08	--	--	--
Uranium-238	U-238	pCi/L	N	1/10/2006	1/17/2006	6	3	50	1,200	1,700	0.59	1.4	2.16E+08	--	--	--

Table L-19. Summary of Aquifer Tube Analytes That Do Not Exceed an Ecological Screening Level

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Aluminum	7429-90-5	ug/L	Y	2/7/2006	1/28/2011	23	1	4.4	5.0	95	14	14	87	--	7.1	1
Arsenic	7440-38-2	ug/L	N	1/11/2007	1/28/2011	36	28	78	0.40	30	0.45	3.3	150	--	7.9	--
Arsenic	7440-38-2	ug/L	Y	2/28/2006	1/28/2011	27	20	74	0.40	0.80	0.45	3.1	150	--	7.9	--
Cadmium	7440-43-9	ug/L	N	1/11/2007	1/28/2011	81	1	1.2	0.10	4.0	0.10	0.10	0.25	--	0.92	--
Chloride	16887-00-6	ug/L	N	2/7/2006	3/31/2011	144	143	99	84	84	501	17,700	230,000	--	15,630	9
Chloride	16887-00-6	ug/L	Y	1/11/2007	1/22/2007	2	2	100	--	--	1,380	5,910	230,000	--	15,630	--
Copper	7440-50-8	ug/L	N	12/3/2007	1/28/2011	69	23	33	0.20	5.0	0.22	5.7	9.0	--	0.81	6
Copper	7440-50-8	ug/L	Y	2/7/2006	1/28/2011	64	18	28	2.8	5.0	0.22	6.0	9.0	--	0.81	1
Lead	7439-92-1	ug/L	N	8/15/2010	1/28/2011	22	3	14	0.20	0.20	0.25	1.6	2.1	--	0.92	1
Lead	7439-92-1	ug/L	Y	8/15/2010	1/28/2011	17	1	5.9	0.10	0.20	0.35	0.35	2.1	--	0.92	--
Nickel	7440-02-0	ug/L	N	1/11/2007	1/28/2011	63	14	22	0.20	13	0.24	7.0	52	--	1.6	5
Nickel	7440-02-0	ug/L	Y	2/7/2006	1/28/2011	57	7	12	0.20	13	0.21	4.4	52	--	1.6	3
Selenium	7782-49-2	ug/L	N	8/15/2010	1/28/2011	22	1	4.6	0.60	0.60	2.1	2.1	5.0	--	11	--
Strontium-90	10098-97-2	pCi/L	N	2/7/2006	2/22/2011	84	8	9.5	-2.70E+01	3.3	0.55	5.2	5.41E+10	--	0.0010	8
Technetium-99	14133-76-7	pCi/L	N	2/7/2006	1/28/2011	36	9	25	-2.10E+01	7.6	8.1	130	2.43E+12	--	0.83	9
Tritium	10028-17-8	pCi/L	N	2/7/2006	3/31/2011	138	68	49	-1.20E+02	310	210	12,100	5.41E+15	--	119	68
Tritium	10028-17-8	pCi/L	Y	1/11/2007	1/22/2007	2	1	50	-1.40E+02	-1.40E+02	680	680	5.41E+15	--	119	1
Zinc	7440-66-6	ug/L	Y	2/7/2006	1/28/2011	57	13	23	0.80	6.0	1.1	16	91	--	22	--

Table L-20. Summary of Pore Water Analytes That Do Not Exceed an Ecological Screening Level

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Arsenic	N	7440-38-2	ug/L	1/25/2006	12/16/2006	7	1	14	3.1	3.7	4.4	4.4	150	--	7.9	--
Chloride	N	16887-00-6	ug/L	1/25/2006	12/16/2006	6	6	100	--	--	980	4,300	230,000	--	15,630	--
Chromium	N	7440-47-3	ug/L	1/25/2006	12/16/2006	7	5	71	1.6	1.6	1.6	44	65	--	2.4	3
Copper	N	7440-50-8	ug/L	1/25/2006	12/16/2006	7	1	14	0.70	2.5	1.5	1.5	9.0	--	0.81	1
Iron	N	7439-89-6	ug/L	1/25/2006	12/16/2006	7	4	57	24	32	31	121	1,000	--	570	--
Nickel	N	7440-02-0	ug/L	1/25/2006	12/16/2006	7	2	29	1.3	2.2	1.8	2.2	52	--	1.6	2
Technetium-99	N	14133-76-7	pCi/L	12/16/2006	12/16/2006	1	1	100	--	--	46	46	2.43E+12	--	0.83	1
Tritium	N	10028-17-8	pCi/L	1/25/2006	12/16/2006	6	4	67	-1.50E+01	49	782	16,600	5.41E+15	--	119	4
Uranium-233/234	N	13966-29-5	pCi/L	1/25/2006	12/16/2006	6	6	100	--	--	0.31	0.52	1.89E+08	--	0.85	--
Uranium-235	N	15117-96-1	pCi/L	1/25/2006	12/16/2006	6	1	17	0	0.078	0.037	0.037	2.16E+08	--	--	--
Uranium-238	N	U-238	pCi/L	1/25/2006	12/16/2006	6	4	67	0.085	0.16	0.25	0.44	2.16E+08	--	--	--
Zinc	N	7440-66-6	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	2.3	4.2	91	--	22	--

Table L-21. Summary of Seep/Spring Analytes That Do Not Exceed an Ecological Screening Level

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Arsenic	N	7440-38-2	ug/L	10/17/2000	10/11/2004	11	11	100	--	--	0.31	2.2	150	--	7.9	--
Arsenic	Y	7440-38-2	ug/L	10/20/2003	10/11/2004	3	3	100	--	--	0.35	1.5	150	--	7.9	--
Cadmium	Y	7440-43-9	ug/L	10/21/2002	10/11/2004	7	2	29	0.023	3.3	0.013	0.014	0.25	--	0.92	--
Chloride	N	16887-00-6	ug/L	9/5/1995	11/10/2003	12	12	100	--	--	649	12,400	230,000	--	15,630	--
Chromium	Y	7440-47-3	ug/L	10/21/2002	10/11/2004	7	4	57	3.4	4.4	0.97	42	65	--	2.4	2
Cobalt-60	N	10198-40-0	pCi/L	9/26/1993	10/11/2004	17	1	5.9	-1.50E+00	3.2	0.77	0.77	2.70E+09	--	0.023	1
Copper	Y	7440-50-8	ug/L	10/21/2002	10/11/2004	7	3	43	0.86	3.2	0.37	0.45	9.0	--	0.81	--
Iron	Y	7439-89-6	ug/L	10/21/2002	11/10/2003	4	1	25	49	55	24	24	1,000	--	570	--
Lead	Y	7439-92-1	ug/L	10/20/2003	10/11/2004	3	1	33	0.0040	0.011	0.14	0.14	2.1	--	0.92	--
Nickel	N	7440-02-0	ug/L	10/17/2000	10/11/2004	13	11	85	14	16	0.12	3.8	52	--	1.6	1
Nickel	Y	7440-02-0	ug/L	10/21/2002	10/11/2004	7	3	43	13	16	0.60	1.3	52	--	1.6	--
Selenium	N	7782-49-2	ug/L	10/17/2000	10/11/2004	11	4	36	0.10	0.50	0.15	0.78	5.0	--	11	--
Selenium	Y	7782-49-2	ug/L	10/20/2003	10/11/2004	3	1	33	0.10	0.50	0.12	0.12	5.0	--	11	--
Silver	N	7440-22-4	ug/L	10/17/2000	10/11/2004	13	7	54	0.0043	3.1	0.0045	0.060	2.6	--	5.3	--
Strontium-90	N	10098-97-2	pCi/L	9/26/1993	10/11/2004	21	10	48	-1.00E-01	0.30	0.035	3.3	5.41E+10	--	0.0010	10
Technetium-99	N	14133-76-7	pCi/L	9/26/1993	11/10/2003	10	5	50	-2.66E-01	0.66	0.27	2.3	2.43E+12	--	0.83	3
Tritium	N	10028-17-8	pCi/L	9/26/1993	10/11/2004	24	16	67	-2.21E+01	125	47	19,700	5.41E+15	--	119	14
Uranium-233/234	N	13966-29-5	pCi/L	9/16/2002	9/16/2002	1	1	100	--	--	2.3	2.3	1.89E+08	--	0.85	1
Uranium-234	N	13966-29-5	pCi/L	9/26/1993	9/5/1995	3	3	100	--	--	0.70	1.2	1.89E+08	--	0.85	2
Uranium-235	N	15117-96-1	pCi/L	9/26/1993	9/16/2002	4	4	100	--	--	0.036	0.18	2.16E+08	--	--	--
Uranium-238	N	U-238	pCi/L	9/26/1993	9/16/2002	4	4	100	--	--	0.54	2.0	2.16E+08	--	--	--
Zinc	Y	7440-66-6	ug/L	10/21/2002	10/11/2004	7	6	86	2.7	2.7	0.43	30	91	--	22	1

Table L-22. Summary of Surface Water Analytes That Do Not Exceed an Ecological Screening Level

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Chloride	N	16887-00-6	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	910	1,400	230,000	--	15,630	--
Copper	N	7440-50-8	ug/L	10/8/2003	12/27/2006	5	1	20	1.2	10	1.4	1.4	9.0	--	0.81	1
Iron	N	7439-89-6	ug/L	1/25/2006	12/27/2006	4	1	25	32	32	137	137	1,000	--	570	--
Nickel	N	7440-02-0	ug/L	1/25/2006	12/27/2006	4	2	50	1.3	2.2	1.3	2.0	52	--	1.6	1
Strontium-90	N	10098-97-2	pCi/L	10/8/2003	12/27/2006	5	1	20	-2.54E-01	0.16	0.20	0.20	5.41E+10	--	0.0010	1
Uranium-233/234	N	13966-29-5	pCi/L	1/25/2006	12/27/2006	4	4	100	0	0	0.12	0.22	1.89E+08	--	0.85	--
Uranium-238	N	U-238	pCi/L	1/25/2006	12/27/2006	4	3	75	0.033	0.033	0.21	0.23	2.16E+08	--	--	--
Zinc	N	7440-66-6	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	1.6	4.2	91	--	22	--

Table L-23. Summary of Groundwater Analytes That Exceed an Ecological Screening Level

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Aluminum	7429-90-5	ug/L	N	1/10/2006	2/24/2011	55	27	49	10	80	13	1,160	87	10	7.1	27
Aluminum	7429-90-5	ug/L	Y	10/12/2006	2/24/2011	60	17	28	5.0	80	5.8	695	87	4	7.1	16
Cadmium	7440-43-9	ug/L	N	1/10/2006	2/24/2011	150	1	0.67	0.10	4.0	1.3	1.3	0.25	1	0.92	1
Chromium	7440-47-3	ug/L	N	1/10/2006	4/13/2011	168	124	74	1.0	14	2.4	966	65	14	2.4	123
Chromium	7440-47-3	ug/L	Y	1/17/2006	4/25/2011	173	126	73	1.0	14	0.68	187	65	18	2.4	111
Copper	7440-50-8	ug/L	N	1/10/2006	2/24/2011	150	36	24	0.20	7.0	0.28	2,030	9.0	11	0.81	31
Copper	7440-50-8	ug/L	Y	1/17/2006	2/24/2011	170	32	19	0.10	10	0.21	63	9.0	5	0.81	21
Hexavalent Chromium	18540-29-9	ug/L	N	1/3/2006	5/23/2011	1,810	1,725	95	0	9.7	1.0	155	10	1,517	--	--
Hexavalent Chromium	18540-29-9	ug/L	Y	1/10/2006	5/4/2011	317	246	78	2.0	5.0	2.0	203	10	197	--	--
Iron	7439-89-6	ug/L	N	1/10/2006	1/31/2011	134	63	47	9.0	42	18	4,540	1,000	6	570	6
Lead	7439-92-1	ug/L	N	1/10/2006	2/24/2011	42	3	7.1	0.10	42	0.088	37	2.1	2	0.92	2
Lead	7439-92-1	ug/L	Y	8/14/2009	2/24/2011	57	3	5.3	0.10	42	0.38	34	2.1	2	0.92	2
Mercury	7439-97-6	ug/L	Y	10/22/2009	1/17/2011	36	1	2.8	0.050	0.10	0.075	0.075	0.012	1	0.0030	1
Nickel	7440-02-0	ug/L	N	1/10/2006	1/31/2011	133	29	22	0.40	13	0.58	96	52	2	1.6	26
Selenium	7782-49-2	ug/L	Y	8/14/2009	2/24/2011	56	30	54	0.30	45	0.48	52	5.0	1	11	1
Silver	7440-22-4	ug/L	N	1/10/2006	2/24/2011	150	10	6.7	0.040	11	0.056	26	2.6	9	5.3	9
Silver	7440-22-4	ug/L	Y	1/17/2006	2/24/2011	170	9	5.3	0.040	11	5.6	28	2.6	9	5.3	9
Zinc	7440-66-6	ug/L	N	1/10/2006	1/31/2011	133	70	53	0.50	20	0.68	916	91	7	22	23
Zinc	7440-66-6	ug/L	Y	1/17/2006	1/31/2011	153	77	50	1.6	9.6	1.8	547	91	1	22	13

Table L-24. Summary of Aquifer Tube Analytes That Exceed an Ecological Screening Level

Analyte Name	CAS#	Units	Filtered?	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Aluminum	7429-90-5	ug/L	N	8/15/2010	1/28/2011	22	17	77	10	10	10	957	87	7	7.1	17
Chromium	7440-47-3	ug/L	N	1/11/2007	1/28/2011	84	39	46	1.0	14	1.0	72	65	2	2.4	28
Chromium	7440-47-3	ug/L	Y	2/7/2006	1/28/2011	69	26	38	1.0	14	0.51	80	65	3	2.4	18
Hexavalent Chromium	18540-29-9	ug/L	N	1/11/2007	5/12/2011	219	150	68	2.0	5.0	2.1	82	10	86	--	--
Hexavalent Chromium	18540-29-9	ug/L	Y	2/7/2006	5/12/2011	158	106	67	-3.00E-01	5.0	2.0	80	10	46	--	--
Iron	7439-89-6	ug/L	N	1/11/2007	1/28/2011	61	39	64	9.0	38	20	10,200	1,000	3	570	7
Iron	7439-89-6	ug/L	Y	2/7/2006	1/28/2011	54	10	19	9.0	38	9.7	2,340	1,000	2	570	2
Silver	7440-22-4	ug/L	Y	2/7/2006	1/28/2011	69	1	1.5	0.040	7.0	7.2	7.2	2.6	1	5.3	1
Zinc	7440-66-6	ug/L	N	1/11/2007	1/28/2011	63	18	29	0.80	20	1.7	94	91	1	22	1

Table L-25. Summary of Pore Water Analytes That Exceed an Action Level

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Aluminum	N	7429-90-5	ug/L	1/25/2006	12/16/2006	7	2	29	25	129	29	164	87	1	7.1	2
Cadmium	N	7440-43-9	ug/L	1/25/2006	12/16/2006	7	1	14	0.30	0.70	0.72	0.72	0.25	1	0.92	--
Hexavalent Chromium	N	18540-29-9	ug/L	1/25/2006	12/16/2006	11	9	82	3.0	3.0	3.0	42	10	6	--	--
Methoxychlor	N	72-43-5	ug/L	1/25/2006	12/16/2006	6	1	17	0.050	0.062	1.0	1.0	0.030	1	--	--

Table L-26. Summary of Seep/Spring Analytes that Exceed an Ecological Screening Level

Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
Aluminum	N	7429-90-5	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	61	4,800	87	2	7.1	3
Cadmium	N	7440-43-9	ug/L	9/5/1995	10/11/2004	14	11	79	0.0044	3.3	0.0082	2.0	0.25	2	0.92	1
Chromium	N	7440-47-3	ug/L	9/5/1995	10/11/2004	14	13	93	4.4	4.4	1.2	66	65	1	2.4	8
Copper	N	7440-50-8	ug/L	9/5/1995	10/11/2004	14	13	93	2.9	2.9	0.45	37	9.0	1	0.81	6
Iron	N	7439-89-6	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	123	9,300	1,000	1	570	1
Lead	N	7439-92-1	ug/L	10/17/2000	10/11/2004	11	11	100	--	--	0.0078	5.7	2.1	1	0.92	3
Mercury	N	7439-97-6	ug/L	10/17/2000	10/11/2004	9	9	100	--	--	7.41E-04	0.014	0.012	1	0.0030	1
Zinc	N	7440-66-6	ug/L	9/5/1995	10/11/2004	14	14	100	--	--	1.3	410	91	1	22	3

Table L-27. Comparison of Contaminants of Interest to Ecological Screening Levels Levels.

Media Type	Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean Detect	Median Detect	Max Detect Sample #	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
100-K Near-Shore Wells	Aluminum	N	7429-90-5	ug/L	1/10/2006	2/24/2011	55	27	49	10	80	13	1,160	237	40	B1K7K5	87	10	7.1	27
100-K Near-Shore Wells	Aluminum	Y	7429-90-5	ug/L	10/12/2006	2/24/2011	60	17	28	5.0	80	5.8	695	135	20	B1KWP8	87	4	7.1	16
100-K ATs	Aluminum	N	7429-90-5	ug/L	8/15/2010	1/28/2011	22	17	77	10	10	10	957	127	26	B27TY7	87	7	7.1	17
100-K ATs	Aluminum	Y	7429-90-5	ug/L	2/7/2006	1/28/2011	23	1	4.4	5.0	95	14	14	14	14	B282T6	87	--	7.1	1
100-K-PORE-WATER	Aluminum	N	7429-90-5	ug/L	1/25/2006	12/16/2006	7	2	29	25	129	29	164	97	97	J13W75	87	1	7.1	2
100-K-SEEP	Aluminum	N	7429-90-5	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	61	4,800	1,735	343	B0G0Q2	87	2	7.1	3
100-K-SEEP	Aluminum	Y	7429-90-5	ug/L	10/21/2002	11/10/2003	4	0	0	17	96	0	0	0	0	--	87	--	7.1	--
100-K SW	Aluminum	N	7429-90-5	ug/L	1/25/2006	12/27/2006	4	0	0	31	111	0	0	0	0	--	87	--	7.1	--
100-K Near-Shore Wells	Cadmium	N	7440-43-9	ug/L	1/10/2006	2/24/2011	150	1	0.67	0.10	4.0	1.3	1.3	1.3	1.3	B1K7K5	0.25	1	0.92	1
100-K Near-Shore Wells	Cadmium	Y	7440-43-9	ug/L	1/17/2006	2/24/2011	170	0	0	0.10	4.0	--	--	--	--	--	0.25	--	0.92	--
100-K ATs	Cadmium	N	7440-43-9	ug/L	1/11/2007	1/28/2011	81	1	1.2	0.10	4.0	0.10	0.10	0.10	0.10	B26NK3	0.25	--	0.92	--
100-K ATs	Cadmium	Y	7440-43-9	ug/L	2/7/2006	1/28/2011	69	0	0	0.055	4.0	--	--	--	--	--	0.25	--	0.92	--
100-K-PORE-WATER	Cadmium	N	7440-43-9	ug/L	1/25/2006	12/16/2006	7	1	14	0.30	0.70	0.72	0.72	0.72	0.72	J11218	0.25	1	0.92	--
100-K-SEEP	Cadmium	N	7440-43-9	ug/L	9/5/1995	10/11/2004	14	11	79	0.0044	3.3	0.0082	2.0	0.24	0.035	B0G0Q2	0.25	2	0.92	1
100-K-SEEP	Cadmium	Y	7440-43-9	ug/L	10/21/2002	10/11/2004	7	2	29	0.023	3.3	0.013	0.014	0.013	0.013	B1BFW6	0.25	--	0.92	--
100-K SW	Cadmium	N	7440-43-9	ug/L	1/25/2006	12/27/2006	4	0	0	0.30	0.70	--	--	--	--	--	0.25	--	0.92	--
100-K Near-Shore Wells	Chromium	N	7440-47-3	ug/L	1/10/2006	4/13/2011	168	124	74	1.0	14	2.4	966	39	24	B1KWT1	65	14	2.4	123
100-K Near-Shore Wells	Chromium	Y	7440-47-3	ug/L	1/17/2006	4/25/2011	173	126	73	1.0	14	0.68	187	33	20	B1HW33	65	18	2.4	111
100-K ATs	Chromium	N	7440-47-3	ug/L	1/11/2007	1/28/2011	84	39	46	1.0	14	1.0	72	18	3.9	B1R080	65	2	2.4	28
100-K ATs	Chromium	Y	7440-47-3	ug/L	2/7/2006	1/28/2011	69	26	38	1.0	14	0.51	80	23	6.2	B1R079	65	3	2.4	18
100-K-PORE-WATER	Chromium	N	7440-47-3	ug/L	1/25/2006	12/16/2006	7	5	71	1.6	1.6	1.6	44	19	24	J13W75	65	--	2.4	3
100-K-SEEP	Chromium	N	7440-47-3	ug/L	9/5/1995	10/11/2004	14	13	93	4.4	4.4	1.2	66	18	3.9	B0G0Q2	65	1	2.4	8
100-K-SEEP	Chromium	Y	7440-47-3	ug/L	10/21/2002	10/11/2004	7	4	57	3.4	4.4	0.97	42	21	21	B17J85	65	--	2.4	2
100-K SW	Chromium	N	7440-47-3	ug/L	10/8/2003	12/27/2006	5	0	0	1.2	100	0	0	0	0	--	65	--	2.4	--
100-K Near-Shore Wells	Cobalt	N	7440-48-4	ug/L	1/10/2006	2/24/2011	150	12	8.0	0.10	7.0	0.11	19	4.5	0.26	B1PTM7	--	--	0.92	4
100-K Near-Shore Wells	Cobalt	Y	7440-48-4	ug/L	1/17/2006	2/24/2011	170	35	21	0.10	7.0	0.12	26	2.6	0.67	B1PTM6	--	--	0.92	13
100-K ATs	Cobalt	N	7440-48-4	ug/L	1/11/2007	1/28/2011	81	15	19	0.050	5.0	0.054	3.5	0.49	0.23	B27TY7	--	--	0.92	1
100-K ATs	Cobalt	Y	7440-48-4	ug/L	2/7/2006	1/28/2011	69	10	14	0.050	4.0	0.13	6.9	2.1	0.22	B1XP97	--	--	0.92	3
100-K-PORE-WATER	Cobalt	N	7440-48-4	ug/L	1/25/2006	12/16/2006	7	0	0	0.50	1.2	--	--	--	--	--	--	--	0.92	--
100-K-SEEP	Cobalt	N	7440-48-4	ug/L	10/21/2002	11/10/2003	2	0	0	4.8	5.0	--	--	--	--	--	--	--	0.92	--
100-K-SEEP	Cobalt	Y	7440-48-4	ug/L	10/21/2002	11/10/2003	4	0	0	4.5	5.0	--	--	--	--	--	--	--	0.92	--
100-K SW	Cobalt	N	7440-48-4	ug/L	1/25/2006	12/27/2006	4	0	0	0.50	1.2	--	--	--	--	--	--	--	0.92	--
100-K Near-Shore Wells	Copper	N	7440-50-8	ug/L	1/10/2006	2/24/2011	150	36	24	0.20	7.0	0.28	2,030	94	6.0	B21X65	9.0	11	0.81	31
100-K Near-Shore Wells	Copper	Y	7440-50-8	ug/L	1/17/2006	2/24/2011	170	32	19	0.10	10	0.21	63	7.0	4.7	B25MT7	9.0	5	0.81	21
100-K ATs	Copper	N	7440-50-8	ug/L	12/3/2007	1/28/2011	69	23	33	0.20	5.0	0.22	5.7	1.2	0.63	B27TY7	9.0	--	0.81	6
100-K ATs	Copper	Y	7440-50-8	ug/L	2/7/2006	1/28/2011	64	18	28	2.8	5.0	0.22	6.0	0.68	0.34	B27V00	9.0	--	0.81	1
100-K-PORE-WATER	Copper	N	7440-50-8	ug/L	1/25/2006	12/16/2006	7	1	14	0.70	2.5	1.5	1.5	1.5	1.5	J11219	9.0	--	0.81	1
100-K-SEEP	Copper	N	7440-50-8	ug/L	9/5/1995	10/11/2004	14	13	93	2.9	2.9	0.45	37	4.0	0.73	B0G0Q2	9.0	1	0.81	6
100-K-SEEP	Copper	Y	7440-50-8	ug/L	10/21/2002	10/11/2004	7	3	43	0.86	3.2	0.37	0.45	0.42	0.42	B1BFW6	9.0	--	0.81	--
100-K SW	Copper	N	7440-50-8	ug/L	10/8/2003	12/27/2006	5	1	20	1.2	10	1.4	1.4	1.4	1.4	J11236	9.0	--	0.81	1
100-K Near-Shore Wells	Hexavalent Chromium	N	18540-29-9	ug/L	1/3/2006	5/23/2011	1810	1725	95	--	9.7	1.0	155	42	39	B1MT15	10	1517	--	--
100-K Near-Shore Wells	Hexavalent Chromium	Y	18540-29-9	ug/L	1/10/2006	5/4/2011	317	246	78	2.0	5.0	2.0	203	44	35	B1KWR6	10	197	--	--
100-K ATs	Hexavalent Chromium	N	18540-29-9	ug/L	1/11/2007	5/12/2011	219	150	68	2.0	5.0	2.1	82	24	14	B1LPR1	10	86	--	--
100-K ATs	Hexavalent Chromium	Y	18540-29-9	ug/L	2/7/2006	5/12/2011	158	106	67	-3.00E-01	5.0	2.0	80	21	8.4	B1FTJ6	10	46	--	--
100-K SW	Hexavalent Chromium	N	18540-29-9	ug/L	1/25/2006	12/27/2006	4	0	0	3.0	3.0	--	--	--	--	--	10	--	--	--
100-K-PORE-WATER	Hexavalent Chromium	N	18540-29-9	ug/L	1/25/2006	12/16/2006	11	9	82	3.0	3.0	3.0	42	24	25	J13W67	10	6	--	--
100-K Near-Shore Wells	Iron	N	7439-89-6	ug/L	1/10/2006	1/31/2011	134	63	47	9.0	42	18	4,540	281	47	B1KWT1	1,000	6	570	6
100-K Near-Shore Wells	Iron	Y	7439-89-6	ug/L	1/17/2006	1/31/2011	134	37	28	9.0	38	9.2	507	43	25	B21X80	1,000	--	570	--
100-K ATs	Iron	N	7439-89-6	ug/L	1/11/2007	1/28/2011	61	39	64	9.0	38	20	10,200	576	212	B1R043	1,000	3	570	7
100-K ATs	Iron	Y	7439-89-6	ug/L	2/7/2006	1/28/2011	54	10	19	9.0	38	9.7	2,340	479	40	B1FT56	1,000	2	570	2
100-K-PORE-WATER	Iron	N	7439-89-6	ug/L	1/25/2006	12/16/2006	7	4	57	24	32	31	121	68	60	J13W75	1,000	--	570	--
100-K-SEEP	Iron	N	7439-89-6	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	123	9,300	3,297	468	B0G0Q2	1,000	1	570	1
100-K-SEEP	Iron	Y	7439-89-6	ug/L	10/21/2002	11/10/2003	4	1	25	49	55	24	24	24	24	B15LM5	1,000	--	570	--
100-K SW	Iron	N	7439-89-6	ug/L	1/25/2006	12/27/2006	4	1	25	32	32	137	137	137	137	J13VD1	1,000	--	570	--
100-K Near-Shore Wells	Lead	N	7439-92-1	ug/L	1/10/2006	2/24/2011	42	3	7.1	0.10	42	0.088	37	20	23	B215K6	2.1	2	0.92	2
100-K Near-Shore Wells	Lead	Y	7439-92-1	ug/L	8/14/2009	2/24/2011	57	3	5.3	0.10	42	0.38	34	12	2.8	B24900	2.1	2	0.92	2
100-K ATs	Lead	N	7439-92-1	ug/L	8/15/2010	1/28/2011	22	3	14	0.20	0.20	0.25	1.6	0.72	0.35	B27TY7	2.1	--	0.92	1
100-K ATs	Lead	Y	7439-92-1	ug/L	8/15/2010	1/28/2011	17	1	5.9	0.10	0.20	0.35	0.35	0.35	0.35	B26NK2	2.1	--	0.92	--
100-K-PORE-WATER	Lead	N	7439-92-1	ug/L	1/25/2006	12/16/2006	7	0	0	1.2	3.1	--	--	--	--		2.1	--	0.92	--

Table L-27. Comparison of Contaminants of Interest to Ecological Screening Levels Levels.

Media Type	Analyte Name	Filtered?	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean Detect	Median Detect	Max Detect Sample #	Final Surface Water Cleanup Level	No. of Detects > Final Surface Water Cleanup Level	Ground Water Background Level	No. of Detects > Ground Water Background Level
100-K-SEEP	Lead	N	7439-92-1	ug/L	10/17/2000	10/11/2004	11	11	100	--	--	0.0078	5.7	0.83	0.24	B15C81	2.1	1	0.92	3
100-K-SEEP	Lead	Y	7439-92-1	ug/L	10/20/2003	10/11/2004	3	1	33	0.0040	0.011	0.14	0.14	0.14	0.14	B1BFW6	2.1		0.92	--
100-K SW	Lead	N	7439-92-1	ug/L	1/25/2006	12/27/2006	4	0	0	1.6	3.1	--	--	--	--		2.1	--	0.92	--
100-K Near-Shore Wells	Lithium	N	7439-93-2	ug/L	1/10/2006	6/16/2010	16	13	81	4.0	9.6	4.0	17	7.5	5.1	B25R46	--	--	11,321	--
100-K Near-Shore Wells	Lithium	Y	7439-93-2	ug/L	8/14/2009	7/2/2010	14	11	79	4.0	9.6	4.1	17	10	9.6	B25R45	--	--	11,321	--
100-K-PORE-WATER	Lithium	N	7439-93-2	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	1.1	2.6	1.7	1.7	J13W75	--	--	11,321	--
100-K-SW	Lithium	N	7439-93-2	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	1.2	2.6	1.6	1.4	J11238	--	--	11,321	--
100-K Near-Shore Wells	Manganese	N	7439-96-5	ug/L	1/10/2006	1/31/2011	135	39	29	0.20	6.0	0.32	752	72	10	B215K5	--	--	39	10
100-K Near-Shore Wells	Manganese	Y	7439-96-5	ug/L	1/17/2006	1/31/2011	153	38	25	0.20	6.0	0.23	539	100	39	B264P7	--	--	39	19
100-K ATs	Manganese	N	7439-96-5	ug/L	1/11/2007	1/28/2011	63	42	67	0.10	6.0	0.81	264	36	15	B23DT7	--	--	39	10
100-K ATs	Manganese	Y	7439-96-5	ug/L	2/7/2006	1/28/2011	57	25	44	0.10	6.0	0.30	192	34	13	B1FT56	--	--	39	8
100-K-PORE-WATER	Manganese	N	7439-96-5	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	0.90	208	39	2.8	J11219	--	--	39	2
100-K-SEEP	Manganese	N	7439-96-5	ug/L	9/5/1995	11/10/2003	3	3	100	--	--	9.2	330	135	66	B0G0Q2	--	--	39	2
100-K-SEEP	Manganese	Y	7439-96-5	ug/L	10/21/2002	11/10/2003	4	2	50	0.81	1.2	1.4	3.2	2.3	2.3	B15LM5	--	--	39	--
100-K SW	Manganese	N	7439-96-5	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	2.4	5.4	3.2	2.5	J13VD1	--	--	39	--
100-K Near-Shore Wells	Mercury	N	7439-97-6	ug/L	1/10/2006	1/17/2011	20	0	0	0.016	0.10	--	--	--	--	--	0.012	--	0.0030	--
100-K Near-Shore Wells	Mercury	Y	7439-97-6	ug/L	10/22/2009	1/17/2011	36	1	2.8	0.050	0.10	0.075	0.075	0.075	0.075	B25MH3	0.012	1	0.0030	1
100-K ATs	Mercury	N	7439-97-6	ug/L	8/15/2010	12/17/2010	3	0	0	0.10	0.10	--	--	--	--	--	0.012	--	0.0030	--
100-K-PORE-WATER	Mercury	N	7439-97-6	ug/L	1/25/2006	12/16/2006	7	0	0	0.10	0.10	--	--	--	--	--	0.012	--	0.0030	--
100-K-SEEP	Mercury	N	7439-97-6	ug/L	10/17/2000	10/11/2004	9	9	100	--	--	7.41E-04	0.014	0.0026	0.0012	B15C81	0.012	1	0.0030	1
100-K SW	Mercury	N	7439-97-6	ug/L	1/25/2006	12/27/2006	4	0	0	0.10	0.10	--	--	--	--	--	0.012	--	0.0030	--
100-K Near-Shore Wells	Nickel	N	7440-02-0	ug/L	1/10/2006	1/31/2011	133	29	22	0.40	13	0.58	96	15	9.5	B1KWT1	52	2	1.6	26
100-K Near-Shore Wells	Nickel	Y	7440-02-0	ug/L	1/17/2006	1/31/2011	153	41	27	0.40	13	0.46	22	6.1	4.0	B1PTM6	52	--	1.6	33
100-K ATs	Nickel	N	7440-02-0	ug/L	1/11/2007	1/28/2011	63	14	22	0.20	13	0.24	7.0	2.1	0.81	B27VK0	52	--	1.6	5
100-K ATs	Nickel	Y	7440-02-0	ug/L	2/7/2006	1/28/2011	57	7	12	0.20	13	0.21	4.4	1.9	0.39	B1XNM8	52	--	1.6	3
100-K-PORE-WATER	Nickel	N	7440-02-0	ug/L	1/25/2006	12/16/2006	7	2	29	1.3	2.2	1.8	2.2	2.0	2.0	J11219	52	--	1.6	2
100-K-SEEP	Nickel	N	7440-02-0	ug/L	10/17/2000	10/11/2004	13	11	85	14	16	0.12	3.8	0.82	0.46	B15C81	52	--	1.6	1
100-K-SEEP	Nickel	Y	7440-02-0	ug/L	10/21/2002	10/11/2004	7	3	43	13	16	0.60	1.3	0.92	0.86	B1BFW6	52	--	1.6	--
100-K SW	Nickel	N	7440-02-0	ug/L	1/25/2006	12/27/2006	4	2	50	1.3	2.2	1.3	2.0	1.7	1.7	J11236	52	--	1.6	1
100-K Near-Shore Wells	Selenium	N	7782-49-2	ug/L	1/10/2006	2/24/2011	39	10	26	0.60	45	0.69	1.7	1.1	1.2	B24907	5.0	--	11	--
100-K Near-Shore Wells	Selenium	Y	7782-49-2	ug/L	8/14/2009	2/24/2011	56	30	54	0.30	45	0.48	52	2.9	1.1	B25MH5	5.0	1	11	1
100-K ATs	Selenium	N	7782-49-2	ug/L	8/15/2010	1/28/2011	22	1	4.6	0.60	0.60	2.1	2.1	2.1	2.1	B26NK3	5.0	--	11	--
100-K ATs	Selenium	Y	7782-49-2	ug/L	8/15/2010	1/28/2011	17	0	0	0.30	1.3	--	--	--	--	--	5.0	--	11	--
100-K-PORE-WATER	Selenium	N	7782-49-2	ug/L	1/25/2006	12/16/2006	7	0	0	2.6	4.3	--	--	--	--	--	5.0	--	11	--
100-K-SEEP	Selenium	N	7782-49-2	ug/L	10/17/2000	10/11/2004	11	4	36	0.10	0.50	0.15	0.78	0.59	0.71	B10954	5.0	--	11	--
100-K-SEEP	Selenium	Y	7782-49-2	ug/L	10/20/2003	10/11/2004	3	1	33	0.10	0.50	0.12	0.12	0.12	0.12	B17J87	5.0	--	11	--
100-K SW	Selenium	N	7782-49-2	ug/L	1/25/2006	12/27/2006	4	0	0	3.6	4.3	--	--	--	--	--	5.0	--	11	--
100-K Near-Shore Wells	Silver	N	7440-22-4	ug/L	1/10/2006	2/24/2011	150	10	6.7	0.040	11	0.056	26	12	9.2	B1PTN4	2.6	9	5.3	9
100-K Near-Shore Wells	Silver	Y	7440-22-4	ug/L	1/17/2006	2/24/2011	170	9	5.3	0.040	11	5.6	28	12	8.6	B1PTN3	2.6	9	5.3	9
100-K ATs	Silver	N	7440-22-4	ug/L	1/11/2007	1/28/2011	81	0	0	0.040	7.0	--	--	--	--	--	2.6	--	5.3	--
100-K ATs	Silver	Y	7440-22-4	ug/L	2/7/2006	1/28/2011	69	1	1.5	0.040	7.0	7.2	7.2	7.2	7.2	B1PYN3	2.6	1	5.3	1
100-K-PORE-WATER	Silver	N	7440-22-4	ug/L	1/25/2006	12/16/2006	7	0	0	0.50	1.4	--	--	--	--	--	2.6	--	5.3	--
100-K-SEEP	Silver	N	7440-22-4	ug/L	10/17/2000	10/11/2004	13	7	54	0.0043	3.1	0.0045	0.060	0.017	0.0095	B15C81	2.6	--	5.3	--
100-K-SEEP	Silver	Y	7440-22-4	ug/L	10/21/2002	10/11/2004	7	0	0	0.0017	3.7	--	--	--	--	--	2.6	--	5.3	--
100-K SW	Silver	N	7440-22-4	ug/L	1/25/2006	12/27/2006	4	0	0	0.58	1.4	--	--	--	--	--	2.6	--	5.3	--
100-K Near-Shore Wells	Zinc	N	7440-66-6	ug/L	1/10/2006	1/31/2011	133	70	53	0.50	20	0.68	916	41	11	B281Y1	91	7	22	23
100-K Near-Shore Wells	Zinc	Y	7440-66-6	ug/L	1/17/2006	1/31/2011	153	77	50	1.6	9.6	1.8	547	20	7.3	B281Y0	91	1	22	13
100-K ATs	Zinc	N	7440-66-6	ug/L	1/11/2007	1/28/2011	63	18	29	0.80	20	1.7	94	11	5.4	B1R043	91	1	22	1
100-K ATs	Zinc	Y	7440-66-6	ug/L	2/7/2006	1/28/2011	57	13	23	0.80	6.0	1.1	16	6.9	5.7	B1FT56	91	--	22	--
100-K-PORE-WATER	Zinc	N	7440-66-6	ug/L	1/25/2006	12/16/2006	7	7	100	--	--	2.3	4.2	2.9	2.6	J11219	91	--	22	--
100-K-SEEP	Zinc	N	7440-66-6	ug/L	9/5/1995	10/11/2004	14	14	100	--	--	1.3	410	37	3.9	B0G0Q2	91	1	22	3
100-K-SEEP	Zinc	Y	7440-66-6	ug/L	10/21/2002	10/11/2004	7	6	86	2.7	2.7	0.43	30	7.5	4.0	B17JR1	91	--	22	1
100-K SW	Zinc	N	7440-66-6	ug/L	1/25/2006	12/27/2006	4	4	100	--	--	1.6	4.2	2.8	2.6	J11238	91	--	22	--

Table L-28. Summary of Riparian Soil Analytes Without a Plant/Invertebrate Screening Levels

Analyte	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Generic Plant/Invertebrate ESL	No. of Detects > Overall Lowest Plant/Invertebrate ESL
1,2,4-Trichlorobenzene	120-82-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
1,2-Dichlorobenzene	95-50-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
1,3-Dichlorobenzene	541-73-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
1,4-Dichlorobenzene	106-46-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2,4-Dichlorophenol	120-83-2	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2,4-Dimethylphenol	105-67-9	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2,4-Dinitrophenol	51-28-5	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
2,4-Dinitrotoluene	121-14-2	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2,6-Dinitrotoluene	606-20-2	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2-Chloronaphthalene	91-58-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2-Chlorophenol	95-57-8	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2-Methylphenol (cresol, o-)	95-48-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2-Nitroaniline	88-74-4	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
2-Nitrophenol	88-75-5	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
3,3'-Dichlorobenzidine	91-94-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
3+4 Methylphenol (cresol, m+p)	65794-96-9	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
3-Nitroaniline	99-09-2	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	0.68	1.9	--	--
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
4-Bromophenylphenyl ether	101-55-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
4-Chloro-3-methylphenol	59-50-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
4-Chloroaniline	106-47-8	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
4-Chlorophenylphenyl ether	7005-72-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
4-Nitroaniline	100-01-6	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
4-Nitrophenol	100-02-7	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
Aldrin	309-00-2	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Alpha-BHC	319-84-6	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Aluminum	7429-90-5	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	9.06E+06	1.11E+07	--	--
Antimony-125	14234-35-6	pCi/g	6/29/1993	3/21/2006	6	0	0	0.0045	0.22	--	--	--	--
Beryllium-7	13966-02-4	pCi/g	6/29/1993	3/21/2006	6	0	0	0.11	1.3	--	--	--	--
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	3/21/2006	12/11/2006	10	1	10	1.3	1.3	2.1	2.1	--	--
Bis(2-chloro-1-methylethyl)ether	108-60-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Bis(2-chloroethyl) ether	111-44-4	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Bismuth	7440-69-9	ug/kg	3/21/2006	12/11/2006	10	0	0	590	770	--	--	--	--

Table L-28. Summary of Riparian Soil Analytes Without a Plant/Invertebrate Screening Levels

Analyte	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Generic Plant/Invertebrate ESL	No. of Detects > Overall Lowest Plant/Invertebrate ESL
Butylbenzylphthalate	85-68-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Calcium	7440-70-2	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	4.30E+06	5.39E+06	--	--
Calculated Total Uranium	calc_tot_U	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	1,408	2,976	--	--
Carbazole	86-74-8	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Cerium/Praseodymium-144	CE/PR-144	pCi/g	6/29/1993	6/29/1993	1	0	0	0.041	0.041	--	--	--	--
Cesium-134	13967-70-9	pCi/g	6/29/1993	12/11/2006	11	0	0	-7.62E-03	0.22	--	--	--	--
Chloride	16887-00-6	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	3,370	4,620	--	--
Delta-BHC	319-86-8	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Dibenzofuran	132-64-9	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Dieldrin	60-57-1	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Dimethyl phthalate	131-11-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Di-n-butylphthalate	84-74-2	ug/kg	3/21/2006	12/11/2006	10	3	30	330	330	17	29	--	--
Di-n-octylphthalate	117-84-0	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Endosulfan I	959-98-8	ug/kg	3/21/2006	12/11/2006	10	4	40	1.3	1.3	0.43	1.9	--	--
Endosulfan II	33213-65-9	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Endosulfan sulfate	1031-07-8	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Endrin	72-20-8	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Endrin aldehyde	7421-93-4	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Endrin ketone	53494-70-5	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Fluoride	16984-48-8	ug/kg	3/21/2006	12/11/2006	2	1	50	485	485	430	430	--	--
Gamma-BHC (Lindane)	58-89-9	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Heptachlor	76-44-8	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Heptachlor epoxide	1024-57-3	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Hexachlorobenzene	118-74-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Hexachlorobutadiene	87-68-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Hexachloroethane	67-72-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Hexavalent Chromium	18540-29-9	ug/kg	3/21/2006	12/11/2006	10	3	30	200	390	230	310	--	--
Iron	7439-89-6	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	1.86E+07	2.12E+07	--	--
Isophorone	78-59-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Magnesium	7439-95-4	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	4.89E+06	5.43E+06	--	--
Methoxychlor	72-43-5	ug/kg	3/21/2006	12/11/2006	10	2	20	1.3	1.3	1.4	2.2	--	--
Nitrobenzene	98-95-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Nitrogen in ammonia	NH3-N	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	2,430	4,170	--	--
Nitrogen in Nitrate	NO3-N	ug/kg	3/21/2006	12/11/2006	12	12	100	0	0	959	10,590	--	--
Nitrogen in Nitrite	NO2-N	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	653	792	--	--
Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	3,100	10,800	--	--
Nitrogen, Kjeldahl total	N-KJELDAHL	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	778,000	1.09E+06	--	--
n-Nitrosodi-n-dipropylamine	621-64-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--

Table L-28. Summary of Riparian Soil Analytes Without a Plant/Invertebrate Screening Levels

Analyte	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Generic Plant/Invertebrate ESL	No. of Detects > Overall Lowest Plant/Invertebrate ESL
n-Nitrosodiphenylamine	86-30-6	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Pentachlorophenol	87-86-5	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
pH Measurement	PH	unitless	3/21/2006	12/11/2006	2	2	100	0	0	6.9	7.0	--	--
Potassium	7440-09-7	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	938,000	1.16E+06	--	--
Potassium-40	13966-00-2	pCi/g	6/29/1993	12/11/2006	11	11	100	0	0	9.3	25	--	--
Ruthenium-106	13967-48-1	pCi/g	6/29/1993	3/21/2006	6	0	0	-9.71E-02	0.82	--	--	--	--
Silicon	7440-21-3	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	254,000	384,000	--	--
Sodium	7440-23-5	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	187,000	237,000	--	--
Strontium	7440-24-6	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	28,900	35,900	--	--
Sulfate	14808-79-8	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	8,440	12,000	--	--
Thorium-228	14274-82-9	pCi/g	3/21/2006	12/11/2006	10	8	80	0.49	0.60	0.35	0.72	--	--
Thorium-230	14269-63-7	pCi/g	3/21/2006	12/11/2006	10	7	70	-1.32E-01	0.33	0.30	0.74	--	--
Total organic carbon	TOC	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	1.41E+07	1.63E+07	--	--
Toxaphene	8001-35-2	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	--	--
Uranium-233/234	13966-29-5	pCi/g	3/21/2006	12/11/2006	10	10	100	0	0	0.54	1.2	--	--
Zinc-65	13982-39-3	pCi/g	6/29/1993	6/29/1993	1	0	0	-4.98E-02	-4.98E-02	--	--	--	--
Zirconium/Niobium-95	ZR/NB-95	pCi/g	6/29/1993	6/29/1993	1	0	0	-9.79E-02	-9.79E-02	--	--	--	--

Table L-29. Summary of Riparian Soil Analytes Without a Wildlife Screening Value

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Avian/Mammal ESL	No. of Detects > Overall Lowest Avian/Mammal ESL
1,2,4-Trichlorobenzene	120-82-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
1,4-Dichlorobenzene	106-46-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2,4-Dichlorophenol	120-83-2	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2,4-Dimethylphenol	105-67-9	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2,4-Dinitrophenol	51-28-5	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
2,6-Dinitrotoluene	606-20-2	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2-Chloronaphthalene	91-58-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2-Chlorophenol	95-57-8	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
2-Nitroaniline	88-74-4	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
2-Nitrophenol	88-75-5	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
3,3'-Dichlorobenzidine	91-94-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
3+4 Methylphenol (cresol, m+p)	65794-96-9	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
3-Nitroaniline	99-09-2	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
4-Bromophenylphenyl ether	101-55-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
4-Chloro-3-methylphenol	59-50-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
4-Chloroaniline	106-47-8	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
4-Chlorophenylphenyl ether	7005-72-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
4-Nitroaniline	100-01-6	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
4-Nitrophenol	100-02-7	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
Alpha-BHC	319-84-6	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Aluminum	7429-90-5	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	9.06E+06	1.11E+07	--	--
Antimony-125	14234-35-6	pCi/g	6/29/1993	3/21/2006	6	0	0	0.0045	0.22	--	--	--	--
Beryllium-7	13966-02-4	pCi/g	6/29/1993	3/21/2006	6	0	0	0.11	1.3	--	--	--	--
Bis(2-chloro-1-methylethyl)ether	108-60-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Bis(2-chloroethyl) ether	111-44-4	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Bismuth	7440-69-9	ug/kg	3/21/2006	12/11/2006	10	0	0	590	770	--	--	--	--
Butylbenzylphthalate	85-68-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Calcium	7440-70-2	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	4.30E+06	5.39E+06	--	--
Calculated Total Uranium	calc_tot_U	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	1,408	2,976	--	--
Carbazole	86-74-8	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Cerium/Praseodymium-144	CE/PR-144	pCi/g	6/29/1993	6/29/1993	1	0	0	0.041	0.041	--	--	--	--
Cesium-134	13967-70-9	pCi/g	6/29/1993	12/11/2006	11	0	0	-7.62E-03	0.22	--	--	--	--
Chloride	16887-00-6	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	3,370	4,620	--	--
Delta-BHC	319-86-8	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Dibenzofuran	132-64-9	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Diethylphthalate	84-66-2	ug/kg	3/21/2006	12/11/2006	10	1	10	330	330	17	17	--	--
Dimethyl phthalate	131-11-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Di-n-butylphthalate	84-74-2	ug/kg	3/21/2006	12/11/2006	10	3	30	330	330	17	29	--	--

Table L-29. Summary of Riparian Soil Analytes Without a Wildlife Screening Value

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Avian/Mammal ESL	No. of Detects > Overall Lowest Avian/Mammal ESL
Di-n-octylphthalate	117-84-0	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Endrin	72-20-8	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Endrin ketone	53494-70-5	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Fraction Coarse Sand	COARSE_SAND	%	3/21/2006	12/11/2006	2	2	100	0	0	11	17	--	--
Gamma-BHC (Lindane)	58-89-9	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Heptachlor	76-44-8	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Heptachlor epoxide	1024-57-3	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	--	--
Hexachlorobenzene	118-74-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Hexachlorobutadiene	87-68-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Hexachloroethane	67-72-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Iron	7439-89-6	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	1.86E+07	2.12E+07	--	--
Isophorone	78-59-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Magnesium	7439-95-4	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	4.89E+06	5.43E+06	--	--
Nitrobenzene	98-95-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Nitrogen in ammonia	NH3-N	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	2,430	4,170	--	--
Nitrogen in Nitrate	NO3-N	ug/kg	3/21/2006	12/11/2006	12	12	100	0	0	959	10,590	--	--
Nitrogen in Nitrite	NO2-N	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	653	792	--	--
Nitrogen in Nitrite and Nitrate	NO2+NO3-N	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	3,100	10,800	--	--
Nitrogen, Kjeldahl total	N-KJELDAHL	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	778,000	1.09E+06	--	--
n-Nitrosodi-n-dipropylamine	621-64-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
n-Nitrosodiphenylamine	86-30-6	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	--	--
Pentachlorophenol	87-86-5	ug/kg	3/21/2006	12/11/2006	10	0	0	810	840	--	--	--	--
pH Measurement	PH	unitless	3/21/2006	12/11/2006	2	2	100	0	0	6.9	7.0	--	--
Potassium	7440-09-7	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	938,000	1.16E+06	--	--
Potassium-40	13966-00-2	pCi/g	6/29/1993	12/11/2006	11	11	100	0	0	9.3	25	--	--
Ruthenium-106	13967-48-1	pCi/g	6/29/1993	3/21/2006	6	0	0	-9.71E-02	0.82	--	--	--	--
Silicon	7440-21-3	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	254,000	384,000	--	--
Sodium	7440-23-5	ug/kg	3/21/2006	12/11/2006	10	10	100	0	0	187,000	237,000	--	--
Sulfate	14808-79-8	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	8,440	12,000	--	--
Thorium-228	14274-82-9	pCi/g	3/21/2006	12/11/2006	10	8	80	0.49	0.60	0.35	0.72	--	--
Thorium-230	14269-63-7	pCi/g	3/21/2006	12/11/2006	10	7	70	-1.32E-01	0.33	0.30	0.74	--	--
Total organic carbon	TOC	ug/kg	3/21/2006	12/11/2006	2	2	100	0	0	1.41E+07	1.63E+07	--	--
Toxaphene	8001-35-2	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	--	--
Uranium-233/234	13966-29-5	pCi/g	3/21/2006	12/11/2006	10	10	100	0	0	0.54	1.2	--	--
Zinc-65	13982-39-3	pCi/g	6/29/1993	6/29/1993	1	0	0	-4.98E-02	-4.98E-02	--	--	--	--
Zirconium/Niobium-95	ZR/NB-95	pCi/g	6/29/1993	6/29/1993	1	0	0	-9.79E-02	-9.79E-02	--	--	--	--

Table L-30. Summary of Riparian Soil Analytes That Were Not Detected

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Plant/Invertebrate ESL
2-Methylnaphthalene	91-57-6	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	29,000
Acenaphthene	83-32-9	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	20,000
Acenaphthylene	208-96-8	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	29,000
Alpha-Chlordane	5103-71-9	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	1,000
Americium-241	14596-10-2	pCi/g	3/21/2006	12/11/2006	10	0	0	0.11	0.91	--	--	21,500
Anthracene	120-12-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	29,000
Antimony	7440-36-0	ug/kg	3/21/2006	12/11/2006	10	0	0	370	660	--	--	5,000
Aroclor-1016	12674-11-2	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	40,000
Aroclor-1221	11104-28-2	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	40,000
Aroclor-1232	11141-16-5	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	40,000
Aroclor-1242	53469-21-9	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	40,000
Aroclor-1248	12672-29-6	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	40,000
Aroclor-1254	11097-69-1	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	40,000
Aroclor-1260	11096-82-5	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	40,000
Benzo(b)fluoranthene	205-99-2	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	18,000
Benzo(k)fluoranthene	207-08-9	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	18,000
Dibenz[a,h]anthracene	53-70-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	18,000
Europium-152	14683-23-9	pCi/g	3/21/2006	12/11/2006	10	0	0	0.13	0.31	--	--	14,700
Europium-154	15585-10-1	pCi/g	6/29/1993	12/11/2006	11	0	0	0.034	0.65	--	--	12,500
Europium-155	14391-16-3	pCi/g	6/29/1993	12/11/2006	11	0	0	0.012	0.35	--	--	153,000
Fluorene	86-73-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	29,000
gamma-Chlordane	5566-34-7	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	1,000
Naphthalene	91-20-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	29,000
Thallium	7440-28-0	ug/kg	3/21/2006	12/11/2006	10	0	0	820	1,100	--	--	1,000

Table L-31. Summary of Riparian Soil Analytes That Were Not Detected

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Avian/Mammal ESL	No. of Detects > Overall Lowest Avian/Mammal ESL
1,2-Dichlorobenzene	95-50-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	164,000	--
1,3-Dichlorobenzene	541-73-1	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	164,000	--
2,4-Dinitrotoluene	121-14-2	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	26,400	--
2-Methylnaphthalene	91-57-6	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	6,010	--
2-Methylphenol (cresol, o-)	95-48-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	9.29E+06	--
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	882	--
Acenaphthene	83-32-9	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	1.10E+06	--
Acenaphthylene	208-96-8	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	73,600	--
Aldrin	309-00-2	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	165	--
Alpha-Chlordane	5103-71-9	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	50,400	--
Americium-241	14596-10-2	pCi/g	3/21/2006	12/11/2006	10	0	0	0.11	0.91	--	--	4,840	--
Anthracene	120-12-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	678,000	--
Antimony	7440-36-0	ug/kg	3/21/2006	12/11/2006	10	0	0	370	660	--	--	5,980	--
Aroclor-1016	12674-11-2	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	1,820	--
Aroclor-1221	11104-28-2	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	1,470	--
Aroclor-1232	11141-16-5	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	1,440	--
Aroclor-1242	53469-21-9	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	1,490	--
Aroclor-1248	12672-29-6	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	325	--
Aroclor-1254	11097-69-1	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	1,470	--
Aroclor-1260	11096-82-5	ug/kg	3/21/2006	12/11/2006	10	0	0	13	13	--	--	1,470	--
Benzo(b)fluoranthene	205-99-2	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	39,200	--
Benzo(k)fluoranthene	207-08-9	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	39,200	--
Dibenz[a,h]anthracene	53-70-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	44,100	--
Dieldrin	60-57-1	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	21	--
Endosulfan II	33213-65-9	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	710	--
Endosulfan sulfate	1031-07-8	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	560	--
Endrin aldehyde	7421-93-4	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	1,360	--
Europium-152	14683-23-9	pCi/g	3/21/2006	12/11/2006	10	0	0	0.13	0.31	--	--	1,740	--
Europium-154	15585-10-1	pCi/g	6/29/1993	12/11/2006	11	0	0	0.034	0.65	--	--	1,610	--
Europium-155	14391-16-3	pCi/g	6/29/1993	12/11/2006	11	0	0	0.012	0.35	--	--	33,400	--
Fluorene	86-73-7	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	175,000	--
gamma-Chlordane	5566-34-7	ug/kg	3/21/2006	12/11/2006	10	0	0	1.3	1.3	--	--	50,200	--
Naphthalene	91-20-3	ug/kg	3/21/2006	12/11/2006	10	0	0	330	330	--	--	100,000	--
Thallium	7440-28-0	ug/kg	3/21/2006	12/11/2006	10	0	0	820	1,100	--	--	9,210	--

Table L-32. Summary of Riparin Soil Analytes That Do Not Exceed the Lowest Plant/Invertebrate Screening Level

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Plant/Invertebrate ESL	No. of Detects > Overall Lowest Plant/Invertebrate ESL
Arsenic	7440-38-2	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	7,300	8,300	10,000	--
Barium	7440-39-3	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	86,100	107,000	330,000	--
Benzo(a)anthracene	56-55-3	ug/kg	3/21/2006	12/11/2006	10	1	10	330	330	18	18	18,000	--
Benzo(a)pyrene	50-32-8	ug/kg	3/21/2006	12/11/2006	10	2	20	330	330	17	20	18,000	--
Benzo(ghi)perylene	191-24-2	ug/kg	3/21/2006	12/11/2006	10	1	10	330	330	51	51	18,000	--
Beryllium	7440-41-7	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	280	440	10,000	--
Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	31	800	100,000	--
Cadmium	7440-43-9	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	1,700	2,500	4,000	--
Carbon-14	14762-75-5	pCi/g	3/21/2006	12/11/2006	10	3	30	-1.86E+00	0.48	12	112	60,700	--
Cesium-137	10045-97-3	pCi/g	6/29/1993	12/11/2006	11	11	100	--	--	0.20	0.80	2,210	--
Chrysene	218-01-9	ug/kg	3/21/2006	12/11/2006	10	2	20	330	330	22	24	18,000	--
Cobalt	7440-48-4	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	7,000	7,900	13,000	--
Cobalt-60	10198-40-0	pCi/g	6/29/1993	12/11/2006	11	1	9.1	0.049	0.20	0.020	0.020	6,130	--
Copper	7440-50-8	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	29,200	36,800	50,000	--
Diethylphthalate	84-66-2	ug/kg	3/21/2006	12/11/2006	10	1	10	330	330	17	17	100,000	--
Fluoranthene	206-44-0	ug/kg	3/21/2006	12/11/2006	10	2	20	330	330	25	31	18,000	--
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	3/21/2006	12/11/2006	10	1	10	330	330	20	20	18,000	--
Mercury	7439-97-6	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	54	79	100	--
Molybdenum	7439-98-7	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	330	970	2,000	--
Nickel	7440-02-0	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	18,300	22,700	30,000	--
Phenanthrene	85-01-8	ug/kg	3/21/2006	12/11/2006	10	1	10	330	330	35	35	29,000	--
Phenol	108-95-2	ug/kg	3/21/2006	12/11/2006	10	5	50	330	330	23	330	30,000	--
Plutonium-238	13981-16-3	pCi/g	6/29/1993	6/29/1993	1	1	100	--	--	8.96E-04	8.96E-04	17,500	--
Plutonium-239/240	PU-239/240	pCi/g	6/29/1993	6/29/1993	1	1	100	--	--	0.0081	0.0081	12,700	--
Pyrene	129-00-0	ug/kg	3/21/2006	12/11/2006	10	2	20	330	330	34	34	18,000	--
Radium-226	13982-63-3	pCi/g	3/21/2006	12/11/2006	10	10	100	--	--	0.47	1.8	288	--
Radium-228	15262-20-1	pCi/g	3/21/2006	12/11/2006	10	9	90	1.0	1.0	0.50	2.8	245	--
Silver	7440-22-4	ug/kg	3/21/2006	12/11/2006	10	1	10	70	110	80	80	2,000	--
Strontium-90	10098-97-2	pCi/g	6/29/1993	12/11/2006	11	1	9.1	-7.80E-02	0.14	0.15	0.15	3,580	--
Technetium-99	14133-76-7	pCi/g	12/11/2006	12/11/2006	5	5	100	--	--	0.023	0.14	21,900	--
Thorium-232	TH-232	pCi/g	3/21/2006	12/11/2006	10	8	80	0.21	0.46	0.47	1.1	23,500	--
Tin	7440-31-5	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	860	3,200	50,000	--
Uranium	7440-61-1	ug/kg	3/21/2006	12/11/2006	10	7	70	2,000	2,000	1,500	3,400	5,000	--
Uranium-235	15117-96-1	pCi/g	6/29/1993	12/11/2006	11	1	9.1	0	0.071	0.045	0.045	27,400	--
Uranium-238	U-238	pCi/g	3/21/2006	12/11/2006	10	10	100	--	--	0.47	1.0	15,700	--

Table L-33. Summary of Riparian Soil Analytes That Do Not Exceed the Lowest Avian/Mammal Screening Level

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Avian/Mammal ESL	No. of Detects > Overall Lowest Avian/Mammal ESL
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	0.68	1.9	400	--
Arsenic	7440-38-2	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	7,300	8,300	190,000	--
Barium	7440-39-3	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	86,100	107,000	1.32E+06	--
Benzo(a)anthracene	56-55-3	ug/kg	3/21/2006	12/11/2006	10	1	10	330	330	18	18	64,000	--
Benzo(a)pyrene	50-32-8	ug/kg	3/21/2006	12/11/2006	10	2	20	330	330	17	20	76,400	--
Benzo(ghi)perylene	191-24-2	ug/kg	3/21/2006	12/11/2006	10	1	10	330	330	51	51	32,400	--
Beryllium	7440-41-7	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	280	440	13,900	--
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	3/21/2006	12/11/2006	10	1	10	1.3	1.3	2.1	2.1	4,080	--
Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	31	800	45,400	--
Boron	7440-42-8	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	770	1,900	133,000	--
Cesium-137	10045-97-3	pCi/g	6/29/1993	12/11/2006	11	11	100	--	--	0.20	0.80	924	--
Chrysene	218-01-9	ug/kg	3/21/2006	12/11/2006	10	2	20	330	330	22	24	44,500	--
Cobalt	7440-48-4	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	7,000	7,900	111,000	--
Cobalt-60	10198-40-0	pCi/g	6/29/1993	12/11/2006	11	1	9.1	0.049	0.20	0.020	0.020	805	--
Copper	7440-50-8	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	29,200	36,800	107,000	--
Endosulfan I	959-98-8	ug/kg	3/21/2006	12/11/2006	10	4	40	1.3	1.3	0.43	1.9	710	--
Fluoranthene	206-44-0	ug/kg	3/21/2006	12/11/2006	10	2	20	330	330	25	31	839,000	--
Fluoride	16984-48-8	ug/kg	3/21/2006	12/11/2006	2	1	50	485	485	430	430	2.28E+06	--
Hexavalent Chromium	18540-29-9	ug/kg	3/21/2006	12/11/2006	10	3	30	200	390	230	310	1.25E+06	--
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	3/21/2006	12/11/2006	10	1	10	330	330	20	20	35,700	--
Lithium	7439-93-2	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	10,800	12,800	515,000	--
Manganese	7439-96-5	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	252,000	458,000	5.80E+06	--
Mercury	7439-97-6	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	54	79	1,870	--
Methoxychlor	72-43-5	ug/kg	3/21/2006	12/11/2006	10	2	20	1.3	1.3	1.4	2.2	21,800	--
Molybdenum	7439-98-7	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	330	970	14,000	--
Nickel	7440-02-0	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	18,300	22,700	32,600	--
Phenanthrene	85-01-8	ug/kg	3/21/2006	12/11/2006	10	1	10	330	330	35	35	943,000	--
Phenol	108-95-2	ug/kg	3/21/2006	12/11/2006	10	5	50	330	330	23	330	1.51E+06	--
Plutonium-238	13981-16-3	pCi/g	6/29/1993	6/29/1993	1	1	100	--	--	8.96E-04	8.96E-04	5,980	--
Plutonium-239/240	PU-239/240	pCi/g	6/29/1993	6/29/1993	1	1	100	--	--	0.0081	0.0081	6,270	--
Pyrene	129-00-0	ug/kg	3/21/2006	12/11/2006	10	2	20	330	330	34	34	600,000	--
Radium-226	13982-63-3	pCi/g	3/21/2006	12/11/2006	10	10	100	--	--	0.47	1.8	58	--
Radium-228	15262-20-1	pCi/g	3/21/2006	12/11/2006	10	9	90	1.0	1.0	0.50	2.8	55	--
Selenium	7782-49-2	ug/kg	3/21/2006	12/11/2006	10	1	10	630	710	900	900	1,900	--
Silver	7440-22-4	ug/kg	3/21/2006	12/11/2006	10	1	10	70	110	80	80	49,600	--
Strontium	7440-24-6	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	28,900	35,900	4.23E+06	--
Strontium-90	10098-97-2	pCi/g	6/29/1993	12/11/2006	11	1	9.1	-7.80E-02	0.14	0.15	0.15	91	--
Technetium-99	14133-76-7	pCi/g	12/11/2006	12/11/2006	5	5	100	--	--	0.023	0.14	5,360	--
Thorium-232	TH-232	pCi/g	3/21/2006	12/11/2006	10	8	80	0.21	0.46	0.47	1.1	4,560	--
Tin	7440-31-5	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	860	3,200	204,000	--
Uranium	7440-61-1	ug/kg	3/21/2006	12/11/2006	10	7	70	2,000	2,000	1,500	3,400	786,000	--
Uranium-235	15117-96-1	pCi/g	6/29/1993	12/11/2006	11	1	9.1	0	0.071	0.045	0.045	4,360	--
Uranium-238	U-238	pCi/g	3/21/2006	12/11/2006	10	10	100	--	--	0.47	1.0	5,150	--

Table L-34. Summary of Riparian Soil Analytes that Exceed the Lowest Plant/Invertebrate Screening Levels

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Plant/Invertebrate ESL	No. of Detects > Plant/Invertebrate ESL
Boron	7440-42-8	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	770	1,900	500	10
Chromium	7440-47-3	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	21,100	41,700	400	10
Lead	7439-92-1	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	44,800	59,200	50,000	4
Lithium	7439-93-2	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	10,800	12,800	2,000	10
Manganese	7439-96-5	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	252,000	458,000	220,000	10
Selenium	7782-49-2	ug/kg	3/21/2006	12/11/2006	10	1	10	630	710	900	900	520	1
Vanadium	7440-62-2	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	37,200	46,400	2,000	10
Zinc	7440-66-6	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	291,000	360,000	50,000	10

Table L-35. Comparison of Riparian Soil Analytes to Plant/Invertebrate PRGs

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Plant/Invertebrate PRG	No. of Detects > Plant/Invertebrate PRG
Boron	7440-42-8	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	770	1,900	29,600	--
Carbon-14	14762-75-5	pCi/g	3/21/2006	12/11/2006	10	3	30	-1.86E+00	0.48	12	112	60,700	--
Chromium	7440-47-3	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	21,100	41,700	149,000	--
Lead	7439-92-1	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	44,800	59,200	1.70E+06	--
Lithium	7439-93-2	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	10,800	12,800	35,000	--
Manganese	7439-96-5	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	252,000	458,000	1.26E+06	--
Selenium	7782-49-2	ug/kg	3/21/2006	12/11/2006	10	1	10	630	710	900	900	2,020	--
Vanadium	7440-62-2	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	37,200	46,400	89,400	--
Zinc	7440-66-6	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	291,000	360,000	621,000	--

Table L-36. Summary of Riparian Soil Analytes that Exceed the Lowest Avian/Mammal Screening Levels

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Overall Lowest Avian/Mammal ESL	No. of Detects > Overall Lowest Avian/Mammal ESL
Cadmium	7440-43-9	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	1,700	2,500	1,630	10
Carbon-14	14762-75-5	pCi/g	3/21/2006	12/11/2006	10	3	30	-1.86E+00	0.48	12	112	32	1
Chromium	7440-47-3	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	21,100	41,700	38,200	4
Lead	7439-92-1	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	44,800	59,200	35,600	10
Vanadium	7440-62-2	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	37,200	46,400	31,100	10
Zinc	7440-66-6	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	291,000	360,000	67,800	10

Table L-37. Comparison of Riparian Soil Analytes to Avian/Wildlife PRGs

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Avian/Mammal PRG	No. of Detects > Avian/Mammal PRG
Boron	7440-42-8	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	770	1,900	90,600	--
Carbon-14	14762-75-5	pCi/g	3/21/2006	12/11/2006	10	3	30	-1.86E+00	0.48	12	112	32	1
Chromium	7440-47-3	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	21,100	41,700	109,000	--
Lead	7439-92-1	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	44,800	59,200	156,000	--
Lithium	7439-93-2	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	10,800	12,800	1.66E+06	--
Manganese	7439-96-5	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	252,000	458,000	3.32E+06	--
Selenium	7782-49-2	ug/kg	3/21/2006	12/11/2006	10	1	10	630	710	900	900	1,430	--
Vanadium	7440-62-2	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	37,200	46,400	43,200	4
Zinc	7440-66-6	ug/kg	3/21/2006	12/11/2006	10	10	100	--	--	291,000	360,000	856,000	--

Table L-38. Summary of Sediment Analytes Without an Ecological Screening Level

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect
1,2,4-Trichlorobenzene	120-82-1	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
1,2-Dichlorobenzene	95-50-1	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
1,3-Dichlorobenzene	541-73-1	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
1,4-Dichlorobenzene	106-46-7	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
2,4,5-Trichlorophenol	95-95-4	ug/kg	2/21/2006	11/29/2006	4	0	0	870	1,200	--	--
2,4,6-Trichlorophenol	88-06-2	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
2,4-Dichlorophenol	120-83-2	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
2,4-Dimethylphenol	105-67-9	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
2,4-Dinitrophenol	51-28-5	ug/kg	2/21/2006	11/29/2006	4	0	0	870	1,200	--	--
2,4-Dinitrotoluene	121-14-2	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
2,6-Dinitrotoluene	606-20-2	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
2-Chloronaphthalene	91-58-7	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
2-Chlorophenol	95-57-8	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
2-Methylnaphthalene	91-57-6	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
2-Methylphenol (cresol, o-)	95-48-7	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
2-Nitroaniline	88-74-4	ug/kg	2/21/2006	11/29/2006	4	0	0	870	1,200	--	--
2-Nitrophenol	88-75-5	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
3,3'-Dichlorobenzidine	91-94-1	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
3+4 Methylphenol (cresol, m+p)	65794-96-9	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
3-Nitroaniline	99-09-2	ug/kg	2/21/2006	11/29/2006	4	0	0	870	1,200	--	--
4,4'-DDT (Dichlorodiphenyltrichloroethane)	50-29-3	ug/kg	2/21/2006	11/29/2006	4	2	50	1.4	2.0	0.51	110
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	2/21/2006	11/29/2006	4	0	0	870	1,200	--	--
4-Bromophenylphenyl ether	101-55-3	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
4-Chloro-3-methylphenol	59-50-7	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
4-Chloroaniline	106-47-8	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
4-Chlorophenylphenyl ether	7005-72-3	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
4-Nitroaniline	100-01-6	ug/kg	2/21/2006	11/29/2006	4	0	0	870	1,200	--	--
4-Nitrophenol	100-02-7	ug/kg	2/21/2006	11/29/2006	4	0	0	870	1,200	--	--
Acenaphthene	83-32-9	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Acenaphthylene	208-96-8	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Aldrin	309-00-2	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--
Anthracene	120-12-7	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Antimony-125	14234-35-6	pCi/g	11/3/1997	11/29/2006	7	0	0	-4.51E-03	0.075	--	--
Aroclor-1016	12674-11-2	ug/kg	2/21/2006	11/29/2006	4	0	0	14	20	--	--
Aroclor-1221	11104-28-2	ug/kg	2/21/2006	11/29/2006	4	0	0	14	20	--	--
Aroclor-1232	11141-16-5	ug/kg	2/21/2006	11/29/2006	4	0	0	14	20	--	--
Aroclor-1242	53469-21-9	ug/kg	2/21/2006	11/29/2006	4	0	0	14	20	--	--
Aroclor-1248	12672-29-6	ug/kg	2/21/2006	11/29/2006	4	0	0	14	20	--	--
Aroclor-1254	11097-69-1	ug/kg	2/21/2006	11/29/2006	4	1	25	15	20	8.5	8.5
Aroclor-1260	11096-82-5	ug/kg	2/21/2006	11/29/2006	4	0	0	14	20	--	--
Benzo(a)anthracene	56-55-3	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Benzo(a)pyrene	50-32-8	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Benzo(b)fluoranthene	205-99-2	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Benzo(ghi)perylene	191-24-2	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Benzo(k)fluoranthene	207-08-9	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Beryllium	7440-41-7	ug/kg	11/21/1992	9/27/2007	11	8	73	90	120	90	830
Beryllium-7	13966-02-4	pCi/g	9/5/1995	11/29/2006	8	0	0	-6.25E-01	0.34	--	--
Bis(2-chloro-1-methylethyl)ether	108-60-1	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Bis(2-Chloroethoxy)methane	111-91-1	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Bis(2-chloroethyl) ether	111-44-4	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Bismuth	7440-69-9	ug/kg	2/21/2006	9/27/2007	7	0	0	520	1,700	--	--
Boron	7440-42-8	ug/kg	2/21/2006	9/27/2007	7	3	43	770	1,000	810	890
Butylbenzylphthalate	85-68-7	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--

Table L-38. Summary of Sediment Analytes Without an Ecological Screening Level

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect
Calcium	7440-70-2	ug/kg	11/21/1992	9/27/2007	11	11	100	0	0	1.97E+06	6.23E+06
Calculated Total Uranium	calc_tot_U	ug/kg	11/21/1992	11/29/2006	10	10	100	0	0	707	2,990
Carbazole	86-74-8	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Cesium-134	13967-70-9	pCi/g	11/21/1992	11/29/2006	11	0	0	0.0052	0.076	--	--
Chloride	16887-00-6	ug/kg	2/21/2006	9/27/2007	7	7	100	0	0	125	2,700
Chromium-51	14392-02-0	pCi/g	11/21/1992	11/21/1992	3	0	0	2.0	2.0	--	--
Chrysene	218-01-9	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Dibenz[a,h]anthracene	53-70-3	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Dibenzofuran	132-64-9	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Dieldrin	60-57-1	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--
Diethylphthalate	84-66-2	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Dimethyl phthalate	131-11-3	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Di-n-octylphthalate	117-84-0	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Endosulfan II	33213-65-9	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--
Endosulfan sulfate	1031-07-8	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--
Endrin ketone	53494-70-5	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--
Fluoranthene	206-44-0	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Fluorene	86-73-7	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Fluoride	16984-48-8	ug/kg	2/21/2006	9/27/2007	7	1	14	400	1,440	455	455
Gross alpha	12587-46-1	pCi/g	11/21/1992	11/21/1992	3	2	67	2.7	2.7	5.2	15
Gross beta	12587-47-2	pCi/g	11/21/1992	11/21/1992	3	3	100	0	0	13	16
Heptachlor	76-44-8	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--
Hexachlorobenzene	118-74-1	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Hexachlorobutadiene	87-68-3	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Hexachlorocyclopentadiene	77-47-4	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Hexachloroethane	67-72-1	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Hexavalent Chromium	18540-29-9	ug/kg	2/21/2006	9/24/2007	7	2	29	50	500	410	760
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Iron-59	14596-12-4	pCi/g	11/21/1992	11/21/1992	3	0	0	0.20	0.30	--	--
Isophorone	78-59-1	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Lithium	7439-93-2	ug/kg	2/21/2006	9/27/2007	7	7	100	0	0	4,300	8,000
Magnesium	7439-95-4	ug/kg	11/21/1992	9/27/2007	11	11	100	0	0	2.49E+06	4.64E+06
Methoxychlor	72-43-5	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--
Naphthalene	91-20-3	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Nitrobenzene	98-95-3	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Nitrogen in ammonia	NH3-N	ug/kg	2/21/2006	9/27/2007	7	6	86	1,730	1,730	661	4,250
Nitrogen in Nitrate	NO3-N	ug/kg	2/21/2006	9/27/2007	7	7	100	0	0	451	19,400
Nitrogen in Nitrite	NO2-N	ug/kg	2/21/2006	9/27/2007	7	5	71	1,040	1,440	97	1,240
Nitrogen, Kjeldahl total	N-KJELDAHL	ug/kg	2/21/2006	9/27/2007	7	7	100	0	0	47,900	1.52E+06
n-Nitrosodi-n-dipropylamine	621-64-7	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
n-Nitrosodiphenylamine	86-30-6	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Pentachlorophenol	87-86-5	ug/kg	2/21/2006	11/29/2006	4	0	0	870	1,200	--	--
Percent moisture (wet sample)	%MOISTURE	%	2/21/2006	9/27/2007	7	7	100	0	0	4.3	34
pH Measurement	PH	unitless	2/21/2006	9/27/2007	7	7	100	0	0	7.0	8.7
Phenanthrene	85-01-8	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Phenol	108-95-2	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Potassium	7440-09-7	ug/kg	11/21/1992	9/27/2007	11	11	100	0	0	508,000	1.65E+06
Potassium-40	13966-00-2	pCi/g	11/21/1992	11/29/2006	14	14	100	0	0	13	25
Pyrene	129-00-0	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--
Radium-226	13982-63-3	pCi/g	11/21/1992	11/29/2006	7	7	100	0	0	0.48	1.1
Radium-228	15262-20-1	pCi/g	2/21/2006	11/29/2006	4	4	100	0	0	0.76	1.5
Ruthenium-106	13967-48-1	pCi/g	11/21/1992	11/29/2006	10	0	0	-7.62E-02	0.80	--	--
Silicon	7440-21-3	ug/kg	2/21/2006	9/27/2007	7	7	100	0	0	725,000	2.46E+06

Table L-38. Summary of Sediment Analytes Without an Ecological Screening Level

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect
Sodium	7440-23-5	ug/kg	11/21/1992	9/27/2007	11	11	100	0	0	110,000	237,000
Strontium	7440-24-6	ug/kg	2/21/2006	9/27/2007	7	7	100	0	0	11,500	21,400
Sulfate	14808-79-8	ug/kg	2/21/2006	9/27/2007	7	7	100	0	0	925	29,500
Thorium-228	14274-82-9	pCi/g	11/21/1992	11/29/2006	7	6	86	0.57	0.57	0.51	1.9
Thorium-230	14269-63-7	pCi/g	2/21/2006	11/29/2006	4	2	50	0.20	0.44	0.49	0.64
Thorium-232	TH-232	pCi/g	11/21/1992	11/29/2006	7	6	86	0.44	0.44	0.67	1.5
Total organic carbon	TOC	ug/kg	2/21/2006	9/27/2007	7	7	100	0	0	1.10E+06	1.66E+07
Total petroleum hydrocarbons	TPH	ug/kg	2/21/2006	11/29/2006	4	0	0	139,000	196,000	--	--
Total petroleum hydrocarbons - gasoline range	TPHGASOLINE	ug/kg	2/21/2006	11/29/2006	4	0	0	30	140	--	--
Toxaphene	8001-35-2	ug/kg	2/21/2006	11/29/2006	4	0	0	14	20	--	--
Uranium [radionuclide]	U_rad	pCi/g	9/5/1995	10/20/2003	4	4	100	0	0	1.2	4.2
Vanadium	7440-62-2	ug/kg	11/21/1992	9/27/2007	11	11	100	0	0	16,500	38,000
Zinc-65	13982-39-3	pCi/g	11/21/1992	11/21/1992	3	0	0	0.10	0.10	--	--

Table L-39. Summary of Sediment Analytes That Were Not Detected

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Tier 1 ESL	No. of Detects > ESL
Alpha-Chlordane	5103-71-9	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--	0.030	--
gamma-Chlordane	5566-34-7	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--	0.030	--
Endrin	72-20-8	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--	2.2	--
Endrin aldehyde	7421-93-4	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--	2.2	--
Gamma-BHC (Lindane)	58-89-9	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--	2.4	--
Heptachlor epoxide	1024-57-3	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--	2.5	--
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	319-85-7	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--	5.0	--
Alpha-BHC	319-84-6	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--	6.0	--
Delta-BHC	319-86-8	ug/kg	2/21/2006	11/29/2006	4	0	0	1.4	2.0	--	--	120	--
Cobalt-60	10198-40-0	pCi/g	11/21/1992	11/29/2006	11	0	0	0.0044	0.050	--	--	1,460	--
Silver	7440-22-4	ug/kg	11/21/1992	9/27/2007	11	0	0	70	920	--	--	2,000	--
Europium-154	15585-10-1	pCi/g	11/21/1992	11/29/2006	11	0	0	-3.36E-02	0.12	--	--	2,570	--
Thallium	7440-28-0	ug/kg	11/21/1992	9/27/2007	10	0	0	710	2,300	--	--	2,600	--
Europium-152	14683-23-9	pCi/g	11/21/1992	11/29/2006	8	0	0	-5.86E-03	0.090	--	--	3,040	--
Selenium	7782-49-2	ug/kg	11/21/1992	9/27/2007	10	0	0	830	3,900	--	--	4,000	--
Americium-241	14596-10-2	pCi/g	11/21/1992	11/29/2006	7	0	0	-4.00E-03	0.30	--	--	5,150	--
Plutonium-238	13981-16-3	pCi/g	11/21/1992	10/20/2003	6	0	0	-2.60E-03	0.0060	--	--	5,730	--
Di-n-butylphthalate	84-74-2	ug/kg	2/21/2006	11/29/2006	4	0	0	350	490	--	--	7,000	--
Technetium-99	14133-76-7	pCi/g	11/29/2006	11/29/2006	1	0	0	0.12	0.12	--	--	42,200	--
Uranium	7440-61-1	ug/kg	2/21/2006	9/27/2007	7	0	0	890	5,600	--	--	100,000	--

Table L-40. Summary of Sediment Analytes With Concentrations That Do Not Exceed an Ecological Screening Level

Analyte Name	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	ESL	No. of Detects > ESL
Europium-155	14391-16-3	pCi/g	9/5/1995	11/29/2006	8	1	13	0.020	0.10	0.13	0.13	31,600	--
Plutonium-239/240	PU-239/240	pCi/g	11/21/1992	10/20/2003	6	1	17	-3.00E-03	0.0050	0.011	0.011	5,860	--
Strontium-90	10098-97-2	pCi/g	11/21/1992	11/29/2006	15	3	20	-6.00E-03	0.40	0.0020	0.0085	582	--
4,4'-DDD (Dichlorodiphenyldichloroethane)	72-54-8	ug/kg	2/21/2006	11/29/2006	4	1	25	1.4	2.0	1.7	1.7	8.0	--
Tin	7440-31-5	ug/kg	9/5/1995	9/27/2007	8	3	38	1,100	1,700	1,500	3,700	239,000	--
Mercury	7439-97-6	ug/kg	11/21/1992	9/27/2007	10	4	40	10	70	20	200	500	--
Uranium-235	15117-96-1	pCi/g	9/5/1995	11/29/2006	10	5	50	--	0.14	0.0085	0.21	3,730	--
Carbon-14	14762-75-5	pCi/g	2/21/2006	11/29/2006	4	2	50	-6.25E-01	0.14	3.6	80	59,000	--
4,4'-DDE (Dichlorodiphenyldichloroethylene)	72-55-9	ug/kg	2/21/2006	11/29/2006	4	3	75	2.0	2.0	0.38	0.81	3.2	--
Bis(2-ethylhexyl) phthalate	117-81-7	ug/kg	2/21/2006	11/29/2006	4	3	75	490	490	39	58	230	--
Molybdenum	7439-98-7	ug/kg	2/21/2006	9/27/2007	7	6	86	660	660	400	640	250,000	--
Cesium-137	10045-97-3	pCi/g	11/21/1992	11/29/2006	11	10	91	0.040	0.040	0.060	0.52	3,120	--
Uranium-238	U-238	pCi/g	11/21/1992	11/29/2006	13	13	100	--	--	0.24	2.0	2,490	--
Uranium-233/234	13966-29-5	pCi/g	11/21/1992	11/29/2006	11	11	100	--	--	0.42	2.0	5,270	--
Uranium-234	13966-29-5	pCi/g	9/16/2002	10/20/2003	2	2	100	--	--	0.26	0.30	5,270	--
Arsenic	7440-38-2	ug/kg	11/21/1992	9/27/2007	10	10	100	--	--	2,000	6,000	20,000	--
Cobalt	7440-48-4	ug/kg	11/21/1992	9/27/2007	11	11	100	--	--	3,400	7,300	50,000	--
Nickel	7440-02-0	ug/kg	11/21/1992	9/27/2007	11	11	100	--	--	8,000	15,200	60,000	--
Copper	7440-50-8	ug/kg	11/21/1992	9/27/2007	11	11	100	--	--	13,000	27,500	80,000	--
Chromium	7440-47-3	ug/kg	11/21/1992	9/27/2007	11	11	100	--	--	5,500	72,000	95,000	--
Barium	7440-39-3	ug/kg	11/21/1992	9/27/2007	11	11	100	--	--	37,300	66,800	300,000	--
Lead	7439-92-1	ug/kg	11/21/1992	9/27/2007	10	10	100	--	--	3,900	40,200	335,000	--
Manganese	7439-96-5	ug/kg	11/21/1992	9/27/2007	11	11	100	--	--	148,000	329,000	460,000	--
Aluminum	7429-90-5	ug/kg	11/21/1992	9/27/2007	11	11	100	--	--	3.89E+06	7.55E+06	1.40E+07	--
Iron	7439-89-6	ug/kg	11/21/1992	9/27/2007	11	11	100	--	--	9.10E+06	1.89E+07	2.00E+07	--

Table L-41. Summary of Sediment Analytes With Concentrations Greater than an Ecological Screening Level

Analyte	CAS#	Units	First Sample Date	Last Sample Date	Number of Results	Number of Detects	Frequency of Detects (%)	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	ESL	No. of Detects > ESL
Antimony	7440-36-0	ug/kg	11/21/1992	9/27/2007	11	1	9	450	5,100	2,300	2,300	400	1
Endosulfan I	959-98-8	ug/kg	2/21/2006	11/29/2006	4	2	50	1.4	2.0	0.66	1.1	0.010	2
Total petroleum hydrocarbons - diesel range	TPHDIESEL	ug/kg	2/21/2006	11/29/2006	4	2	50	2,900	5,400	6,600	7,900	1,750	2
Cadmium	7440-43-9	ug/kg	11/21/1992	9/27/2007	11	5	45	70	1,500	430	1,600	600	3
Zinc	7440-66-6	ug/kg	11/21/1992	9/27/2007	11	11	100	--	--	38,000	378,000	140,000	6