REPORT

# FINAL WORK PLAN
# REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
# DUWAMISH SHIPYARD, INC.
# SEATTLE, WASHINGTON

**Prepared for**

Duwamish Shipyard, Inc.
5658 W Marginal Way SW
Seattle, Washington 98106

**Prepared by**

Anchor QEA, LLC
1423 Third Avenue, Suite 300
Seattle, Washington 98101

**August 2010**

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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| µg/L | micrograms per liter |
| ACOE | U.S. Army Corps of Engineers |
| AML | Alaska Marine Lines |
| AO | Agreed Order |
| ARARs | applicable and relevant or appropriate requirements |
| bgs | below ground surface |
| BTEX | Benzene, toluene, ethylbenzene, and xylenes |
| COPCs | chemicals of potential concern |
| CSL | Cleanup Screening Levels |
| CSM | conceptual site model |
| cy | cubic yards |
| cy/s | cubic yards per second |
| DSI | Duwamish Shipyard, Inc. |
| Ecology | Washington Department of Ecology |
| EPA | U.S. Environmental Protection Agency |
| ERA | Ecological Risk Assessment |
| Glacier | Glacier Northwest |
| HASP | Health and Safety Plan |
| HCI | Hart Crowser, Inc. |
| HPAHs | high molecular weight PAHs |
| LDW | Lower Duwamish Waterway |
| LDWG | LDW Group |
| LPAHs | low molecular weight PAHs |
| MCUL | minimum cleanup level |
| mg/kg | milligrams per kilogram |
| mg/L | milligram per liter |
| MHHW | mean higher high water |
| MLLW | mean lower low water |
| MTCA | Model Toxics Control Act |
| NPDES | National Pollutant Discharge Elimination System |
| NPL | National Priorities List |

| | |
|---|---|
| PAHs | polycyclic aromatic hydrocarbons |
| PCBs | polychlorinated biphenyls |
| PCP | Pentachlorophenol |
| PDF | portable document format |
| Port | Port of Seattle |
| PSDDA | Puget Sound Dredge Disposal Analysis |
| QAPP | Quality Assurance Plan |
| RAO | remedial action objective |
| RI/FS | Remedial Investigation and Feasibility Study |
| RM | River Miles |
| SAP | Sampling and Analysis Plan |
| SMS | Sediment Management Standards |
| SOW | Statement of Work |
| SQS | Sediment Quality Standards |
| SVOCs | semivolatile organic compounds |
| TBT | tributyltin |
| the Property | 5658 West Marginal Way SW |
| TPH | total petroleum hydrocarbon |
| TPH-Dx | TPH diesel range |
| TPH-G | TPH gasoline range |
| TPH-O | TPH lubricant oil range |
| USGS | U.S. Geological Survey |
| UST | underground storage tank |
| VOC | volatile organic compounds |
| WAC | Washington Administrative Code |

# 1 INTRODUCTION

The Duwamish Shipyard, Inc. (DSI) property is located at 5658 West Marginal Way SW in Seattle (the Property), along the western shoreline of the Lower Duwamish Waterway (LDW). The LDW was added to the National Priorities List (NPL) and is undergoing a Remedial Investigation and Feasibility Study (RI/FS) with oversight by the U.S. Environmental Protection Agency (EPA) and the Washington Department of Ecology (Ecology). Portions of the aquatic areas adjacent to the Property are located within the study area for the LDW.

The location of the Property is shown on Figure 1. Historic operational areas and property boundaries are shown in Figures 2 and 3, respectively. The Property was used between the 1940s and April 2007 for operation of a commercial shipyard. Examples of the types of historical activities occurring at the Property are depicted in aerial photographs contained in Appendix A. Features of the Property during the period of shipyard activities are shown in Figures 4, and 6. Shipyard activities were terminated in April 2007. The Property is currently being used solely for container storage and is being marketed for industrial reuse, consistent with the zoning of the Property.

Numerous investigations have been conducted at the Property and adjacent aquatic areas. These investigations have identified the presence of hazardous substances in on-property and adjacent off-property areas. Interim remedial actions have been conducted in certain upland portions of the Property to address certain areas of petroleum-contaminated soils (Figure 7). However, the full nature and extent of contamination at the Property and adjacent aquatic areas has not been determined.

## 1.1 Objective and Purpose

In support of the investigation and cleanup of the LDW, Ecology is leading sediment source control activities, consistent with a Memorandum of Agreement with EPA. Ecology has identified the Property and adjacent properties and aquatic areas as part of a source control study area known as the "Glacier Bay" area. The Glacier Bay study area includes the Property, the Alaska Marine Lines (AML) property to the north, and the Glacier Northwest (Glacier) property and the Terminal 115 property to the south. These properties surround a shallow embayment identified as Glacier Bay, within which numerous hazardous substances

have been detected in surface and subsurface sediments at elevated concentrations. Ecology has determined that additional investigation is required to assess whether there are ongoing sources that need to be controlled. Information is also required in order to assess whether and to what extent further remedial actions may be required under state or federal cleanup regulations at the properties surrounding the Glacier Bay study area.

This report describes the scope of upland and sediment investigations to be performed at the Property and in aquatic areas adjacent to the Property. These investigations are intended to satisfy Ecology requirements for an RI/FS of the Property, and requirements for assessment of the status of sediment source control. These requirements were defined in an Ecology letter dated January 5, 2007 and in subsequent agency discussions. The current Phase 1 remedial investigation activities and additional RI/FS tasks are being performed under an Agreed Order (AO) between DSI and Ecology. This RI/FS Work Plan is included as Exhibit B, "Statement of Work (SOW)," to the AO.

As part of its January 5, 2007 letter, Ecology requested that the stormwater system be cleaned out. This work was performed during July and August 2007. The Property stormwater system cleanout activities were reported in a January 4, 2008 letter report to Ecology.

## 1.2 Scope of Work

The current scope of work for Phase 1 remedial investigation activities includes collection of additional upland and aquatic investigation data in on-property and adjacent aquatic areas in order to support the development of a detailed conceptual site model (CSM) and the development of conclusions regarding the status of sediment source control. Development of a CSM is an important step in assessing the status of source control and the potential need for and scope of further remedial actions. Elements of a CSM include the following:

- **Contaminants and Potential Sources:** Hazardous substances detected at the Property and adjacent aquatic areas have included heavy metals, semivolatile organic compounds (SVOCs), petroleum hydrocarbons, volatile organic compounds (VOCs), organotin compounds, polychlorinated biphenyls (PCBs), and dioxin/furans. Further information is required to assess the potential sources of these hazardous substances and assess whether such potential sources have been controlled.
- **Nature and Extent of Contamination:** The presence of contamination has been

defined in limited areas of upland soils and groundwater. Additional data are required to define the nature and extent of groundwater contamination and its relationship to contaminant sources. Similarly, the presence of hazardous substances in surface and subsurface sediments located in on-property and adjacent off-property areas has been identified. Additional information is required to assess the area and volume of such hazardous substance impacts and to differentiate those impacts that are being potentially caused or contributed to by other off-site sources.

- **Fate and Transport Processes:** Upland contamination can potentially impact groundwater and sediments through stormwater migration, groundwater migration to surface waters, and through riverbank erosion. Further information is required to assess the extent to which these and other fate and transport processes are occurring. Fate and transport processes potentially affecting sediments include bank erosion, natural sediment scour, or anthropogenic sediment disturbance due to propwash, vessel wakes, or in-water construction activities. Further assessment is required to assess the impacts of these processes on contaminated sediments located on or adjacent to the Property.
- **Exposure Pathways and Receptors:** The final CSM will include an assessment of exposure pathways and potential receptors. Aquatic receptors and potentially applicable cleanup levels are being determined as part of the LDW RI/FS and risk assessment process. At a minimum, these cleanup levels will address the protection of benthic organisms in aquatic sediments, and will address human health protection by controlling direct contact and contaminant bioaccumulation risks. Upland cleanup levels that address human health protection as required under the Model Toxics Control Act (MTCA) and that ensure protection of surface water and sediment quality must be determined. The current investigations will include an assessment of potentially applicable cleanup levels for different media, and an assessment of potentially complete pathways that may result in exposures above applicable cleanup levels.

## 1.3 Organization of Work Plan

The remainder of the report provides the detailed rationale and scope for RI/FS tasks for the Property. The report is organized as follows:

- **Section 2 – Site Background:** The physical conditions and history of operations on

and immediately adjoining the Property are described, including applicable information for the adjacent areas of Glacier Bay and the LDW.

- **Section 3 – Environmental Quality:** The results of previous on-site and off-site investigations are summarized, including the results of prior remedial actions and recent investigations within the adjacent portions of Glacier Bay and the LDW.
- **Section 4 – Preliminary Conceptual Site Model:** A preliminary CSM is defined, providing a basis for assessing data gaps and data quality objectives for completion of RI, FS, and source control assessment activities.
- **Section 5 – Assessment of Data Gaps**: Gaps in existing environmental information are identified, with an emphasis on defining the information necessary to complete the detailed CSM for hazardous substances requiring further action on or adjacent to the Property.
- **Section 6 – Remedial Investigation Tasks:** The scope of upland and aquatic Phase 1 remedial investigations is presented to fill the data gaps as defined in Section 5. This scope of work will be implemented as outlined in the AO and pursuant to an approved Sampling and Analysis Plan (SAP), Quality Assurance Plan (QAPP), and Health and Safety Plan (HASP). Phase 1 remedial investigation activities will be documented in a Phase 1 Data Memorandum, and the need for additional RI activities will be evaluated in a Phase 2 Technical Memorandum.
- **Section 7 – Feasibility Study Tasks:** The FS will identify and evaluate remedial alternatives that protect human health and the environment by eliminating, reducing, or otherwise controlling risks posed by environmental conditions at the Property. An Alternatives Screening Memorandum will first be prepared to evaluate potential cleanup technologies applicable to the Property and narrow the list of potential alternatives evaluated in detail. Additional FS tasks will be documented in the RI/FS report, including a detailed evaluation of remedial alternatives and concluding with a recommended remedial alternative.
- **Section 8 – Project Organization and Schedule:** This section describes the overall project organizational structure for carrying out the RI/FS activities consistent with the AO schedule and required deliverables.
- **Section 9 – References:** References cited in development of the current Work Plan are provided.

# 2 SITE BACKGROUND

## 2.1 Property Description

The Property includes approximately 5 acres of land owned by DSI and located on the west bank of the LDW. Historic shipyard operational features and property boundaries are shown in Figure 2. Most of the Property consists of upland, but aquatic areas are also located in the southeast corner of the Property.

The berth and waterway areas adjacent to the Property are owned by the Port of Seattle (Port) as successor to Commercial Waterway District No. 1. The berth area is 150 feet wide. The waterway is 200 feet in width and has a project depth of -30 feet relative to mean lower low water (MLLW). The U.S. Army Corps of Engineers (ACOE) maintains the waterway channel for navigation in conjunction with the Port. As shown in Figure 2, portions of former shipyard activities extended into the berth area owned by the Port.

The Property is currently being used for container storage and truck access by AML. It is bordered to the north by the AML container facility and to the south by the Glacier Seattle Cement Facility and Terminal 115. DSI previously leased a graving dock from AML located directly adjacent to the northern DSI/AML property boundary. However, that lease has been terminated, and AML has filled the graving dock with clean fill for upland reuse. West Marginal Way is located immediately west of the Property, and AML owns additional property used for staging across this roadway.

The Property is located in a highly industrialized area and is currently zoned for General Industrial (IG1 U/85) use. The eastern property boundary abuts the LDW. The LDW was placed on the NPL by EPA in September 2001. The preliminary boundaries of the LDW extend from the Turning Basin downstream to Harbor Island. The Property is located within this initial delineation (approximately between River Miles [RM] 1.3 and 1.4). In addition, the Property is listed on Ecology's Contaminated Sediment Sites List, which was first published in 1996. That list documents sites potentially subject to investigation and cleanup requirements under MTCA.

## 2.2 Property Ownership History

Figure 3 provides a summary of the ownership history of the Property. DSI purchased the main portions of the Property (Parcels B and C) as a tax title purchase from King County in May 1941. Historical aerial photographs show that the property was vacant in the 1930s prior to its purchase by DSI.

When DSI purchased Parcels B and C, the property to the south was owned by the federal government. After retrofitting an existing lumber plant, the U.S. Army used the property to the south for production of charcoal filters and Whetlerite (a copper-impregnated carbon used in gas mask filters during World Wars I and II). This adjacent property was leased by the federal government to Reichhold Chemical, Inc. (Reichhold) between 1945 and 1958 for operation of a chemical manufacturing facility. The facility produced pentachlorophenol, plastic polymers for the automobile industry, various wood-preserving resins, adhesives and glues used in papermaking, and formaldehyde products. In 1958, Reichhold moved the manufacturing operations to Tacoma, but maintained offices and laboratories at this location until approximately 1961, when Reichhold's lease with the federal government was terminated. That property is now owned by Glacier.

In 1960, DSI purchased a submerged parcel previously used for log and vessel mooring (Parcels E and F) from Commercial Waterway District #1. That parcel extended south into the Glacier Bay area. Four years later, in 1964, DSI exchanged the submerged Glacier Bay parcel (Parcel F) with the Port for land adjacent to DSI's southern boundary (Parcel D). The Port had acquired Parcel D from the federal government that same year. The Port subsequently leased the former Reichhold property to Kaiser Cement for construction of a cement terminal.

In 1965, DSI purchased the parcel (Parcel A) to the west of DSI's original tract from General Construction Company. This was part of a larger parcel (Parcels A and B) later sold to AML in 1999.

From the 1940s through April 2007, DSI used portions of the waterway berth areas for shipyard operations. No existing leases or other property use agreements are available for these areas.

Since June 2007, the upland portion of the Property has been used for container storage and truck access by AML. The DSI-owned property is being marketed for sale for industrial use. Likely future uses include container storage and yard operations, equipment storage, or cargo transshipment operations. Future operation as a commercial shipyard is neither planned nor likely to occur.

## 2.3 Shipyard History

Prior to construction of the DSI facility, the Property consisted of vacant lowland property. King County plat maps and other historical maps show that the Property was located along the western shoreline of the Duwamish River prior to waterway development. An aerial photograph from 1936 (Appendix A) shows the conditions of the Property prior to shipyard construction.

DSI formerly engaged in the repair and maintenance of floating vessels and equipment, including tugboats, barges, dredges, fishing vessels, small passenger vessels, and other types of commercial vessels. The marine railway was constructed at the Property in the early 1940s. The majority of the vessels worked on at the shipyard in this period were wooden fishing boats. Boats would be pulled up on the railway and could be sidetracked onto timbers on the shore. DSI frequently sidetracked boats in the fall, worked on them over the winter, and launched them in the spring. The work consisted mainly of wooden hull repairs and painting. DSI ended the sidetracking process in the late 1950s.

Based on aerial photographs (Appendix A), the graving dock was originally constructed prior to 1946 and was expanded by 1956. DSI used the graving dock under agreements with General Construction, and then later with AML, between 1955 and January 2007. The completed graving dock was 410 feet long and 138 feet wide. Repairs in the graving dock took place below the surface level of the river. Vessels were floated into the graving dock, after which the tide gates were shut and the water was pumped out to create a dry work environment. Pumps were used to continuously keep the concrete floor of the graving dock dry due to leaking from the tide gates. DSI installed a containment system in the 1990s to separate pressure wash water from the water that seeps in through the tide gate.

DSI acquired its first floating, steel drydock in 1967. This floating drydock was a small, steel dock that was used until March 2007. It acquired a second, larger wooden drydock in approximately 1969. After this time, most of the vessel dockings were made on the drydocks. DSI sold the large wooden drydock in 1990 and replaced it with a 1,000-ton steel drydock that remained in use until March 2007. Drydock mooring areas were located within the Port-owned berth areas as shown in Figure 6. Both drydocks were updated to provide containment for pressure wash wastewater in the 1990s. Wastewater flowed to one end of the drydock, where it was captured in a collection sump and pumped onshore to a Delta Pollution Control flocculation pretreatment system prior to discharge to the King County sanitary sewer.

During recent operations, DSI provided services to approximately 60 to 65 vessels per year. The hulls of the vessels being repaired were generally constructed of steel and, infrequently, aluminum or fiberglass. DSI's ship repair services included machine and electrical work, carpentry, steel fabrication, pipe-fitting, sand blasting, pressure washing, and painting.

DSI ceased use of the Property for any industrial-related activity in April 2007. The two drydocks have been removed from the Property. The upland portion of the Property is currently being used by AML for container storage and truck access, with DSI marketing the Property for sale for industrial use.

### *2.3.1 Historic Shipyard Operations and Material Handling by Area*

The historic shipyard property and operational features are presented in Figure 2. The historic shipyard operations are discussed below by Property areas. This section presents material handling activities and potential historic sources of contamination to upland and aquatic media. A summary of historic shipyard operations and potential sources to environmental media by property area is presented in Table 1. The results of previous environmental sampling in these Property areas are discussed in Section 3.3 (upland) and Section 3.5 (aquatic). RI data gaps for these areas are presented in Section 5.1.

- Northwestern Area: The historic shipyard operations in the Northwestern Area include the machine shop, storage for spent blasting grit, and a 500-gallon leaded gasoline tank. The machine shop had operations both inside and outside and included small and large parts fabrication, engine work, and pump work. The machine shop

building was constructed with a concrete floor. Material use at the machine shop included cutting tool coolant, small parts degreasers, and used oil. Spent blasting grit was stored in a covered shed adjacent to the machine shop. A 500-gallon leaded gasoline UST was located between the storage shed and machine shop. The 500-gallon UST was closed in place in 1986.

- **Rail Spur Area:** This area consists of the end of the former Northern Pacific Railway easement rail spur. It is located along the southern property boundary adjacent to the Glacier property. The rail spur was used for temporary railcar parking related to the Glacier property. This area also included a wood (joiner) and electrical shop. The wood and electrical shop building was constructed with a concrete floor. DSI used these buildings for vessel interior work such as carpentry and electrical system and component repair and testing. Materials used included wood stains, varnishes, wiring, switches, breakers, and contact cleaners.
- **Central Area:** This area is located in the center of the Property (Parcel C) and is over 200 feet from the shoreline. It is presumed to be downgradient of the 1993 Remedial Action Area and the Rail Spur Area. Historic shipyard uses of the Central Area consisted of vehicle parking, the administrative office building, and underground stormwater line system.
- **2000 UST Removal Area**: This area includes the soils and groundwater in the vicinity of the 2000 UST removal. A total of four USTs were formerly located in this area: 1) a 3,000-gallon diesel UST; 2) a 1,000-gallon gasoline UST; 3) a 3,000-gallon gasoline UST; and 4) a 3,000-gallon gasoline UST. DSI used the USTs for vehicle and vessel fueling. DSI removed all four USTs in 2000. A focused soil excavation took place at the time of removal.
- **South Property Area**: The South Property Area consists of areas in the southern portion of the Property that borders the Glacier Property. This area includes buildings used for various storage and paint work. Material handling storage in this area had containment areas for spent blasting grit storage, used oil storage, paint storage, hazardous waste storage, and a solvent still (for paint thinning). Used oil and hazardous waste were transported and disposed offsite with manifest documentation. Small parts and assembly painting took place in the paint booth with a curtain system for containment.
- **Shipyard Nearshore Area:** The Shipyard Nearshore Area includes the upland areas at the top of the marine railway. This area is bordered on the water side by a bulkhead.

It is located within approximately 150 feet of the shoreline. Historic shipyard operations at the Shipyard Nearshore Area consisted of early (1940's and 1950's) vessel side-tracking ways, crane and winch activities, blasting grit handling, wastewater treatment, and the steel and pipe shop. Periodic filling of the nearshore area took place in the early shipyard history up to the current bulkhead. Filling material was reported to be soil, broken concrete, scrap steel, and an Army Corps permitted riprap fill.

- **Parcel D Nearshore Area:** This area is located in the southeastern corner of the Property. Historic shipyard operations in this area consisted of miscellaneous storage and a small parts blasting shed.
- **Aquatic Area:** This area is located adjacent to the Property in aquatic areas to the east of the Nearshore Area bulkhead. Historic shipyard operations in the Aquatic Area consisted of the marine railway, Dry Dock No. 1, Dry Dock No. 2, a blasting grit hopper, paint mixing sheds, the stormwater outfall (Outfall 005), and the graving dock. These operations supported the over-water vessel repair and maintenance activities including blasting, painting, paint mixing (solvent thinning), material storage, interior installations, and stormwater discharge. DSI collected wastewater generated during vessel blasting and pumped it to the nearshore wastewater treatment system. It then was pumped to the METRO sanitary system.

  Shipyard operations in the Aquatic Area were inspected and monitored as part of the former shipyard NPDES permit. The historic NPDES permit inspection and monitoring resulted in Ecology enforcement actions relating to waste management practices and monitoring parameter exceedences of metals (copper, lead and zinc) and turbidity. These enforcement actions documented unintentional releases of blasting grit and wastewater to the Duwamish River sediment from the dry docks and graving dock. In order to address aquatic shipyard operation inputs to sediment, the sediment RI activities will include the full list of sediment management standards (SMS) testing parameters, including tri-butyl-tin (TBT).

## 2.4 History of Adjacent Facilities

Properties adjacent to DSI, including those owned by Glacier, MRI Corporation/Port of Seattle (Terminal 115), and AML, are also properties of interest and included within the

Glacier Bay Source Control Area. An overview of the history of these nearby facilities is provided below and is consistent with information presented in the Summary of Existing Information and Identification of Data Gaps report (SAIC 2007) prepared for the Glacier Bay Source Control Area under the direction of Ecology.

### *2.4.1 Reichhold Chemical/Glacier*

Glacier is the current owner of the property located immediately south of DSI. The property is currently operated by Glacier as a cement terminal, including cement production, storage, and transport. Bulk cement is transported by truck and by barge from a dock and berthing area located on the west side of the waterway adjacent to the Glacier property. Historic property use included a lumber company, U.S. Army facility, the Reichhold facility, and cement terminals.

Prior to 1943, the Glacier property was owned by the Carlisle Lumber Company, which operated a lumber mill at the site. After retrofitting an existing lumber plant, the U.S. Army used the property to the south for production of charcoal filters and Whetlerite (a copper-impregnated carbon used in gas mask filters during World Wars I and II). Charcoal manufacturing continued through 1944.

The Glacier property was subsequently leased by the federal government to Reichhold between 1945 and 1958 for operation of a chemical manufacturing facility. The facility produced pentachlorophenol, plastic polymers for the automobile industry, various wood-preserving resins, adhesives, and glues used in papermaking, and formaldehyde products. Ammonia was also used in Reichhold's operations; however, its use could not be related to a specific product. Residues and wastewaters from pentachlorophenol manufacturing are typically contaminated with chlorinated dioxins and furans, compounds that have been detected at elevated concentrations in Glacier Bay sediments. Elevated pentachlorophenol, arsenic, and silver concentrations have been detected at the site in soils and groundwater.

Extensive Ecology file documentation exists for the former Reichhold facility, including wastewater permit files from the Washington State Pollution Control Commission, Ecology's predecessor. Those files indicate that the Reichhold facility discharged wastewaters into the Duwamish River at two locations, including the use of a ditch from the manufacturing area

to the river, and later a deep water outfall located immediately upstream of the Property. An oblique aerial photograph from 1958 shows that a wooden wastewater accumulation tank used for management of phenol-containing wastewaters was located near the shoreline, just south of DSI parcels D and E. Historic wastewaters may also have been managed or disposed of in constructed lagoons or basins on the Glacier property (SAIC 2007).

Environmental complaints and inspection reports from the 1950s referenced at various times the discharge of colored, ammonia-containing, acidic and phenol-containing wastewaters to the river and attributed fish kills to these discharges. In 1958, Reichhold moved the manufacturing operations to Tacoma, but maintained offices and laboratories at the Seattle location until approximately 1961, when Reichhold's lease with the federal government was terminated.

The Glacier property was subsequently sold to the Port by the federal government. The Port leased the property to Kaiser for construction of a cement terminal. The facility construction included demolition of the former Reichhold facilities, construction of a loading dock along the waterway, and construction of the cement terminal facility presently located on the Glacier property.

Several environmental investigations have been performed in upland and aquatic portions of the Glacier property. Upland studies have documented the presence of pentachlorophenol, arsenic, chromium, and silver in site soils and groundwater. Elevated arsenic concentrations have been noted in a seep to the Duwamish River in the southern portion of Glacier Bay. Arsenic, cadmium, lead, mercury, silver, and zinc concentrations were reported in the seep samples. In April 2008, Glacier provided Ecology with a Remedial Activities Summary Report for the site. The report indicated that subsurface ozone injection (sparging) was performed for seven years at the site to treat pentachlorophenol (PCP) in soil and groundwater. Following treatment PCP concentrations initially decreased below MTCA cleanup levels. However PCP concentrations subsequently increased above MTCA cleanup levels in one groundwater monitoring well. Subsurface injection of hydrogen peroxide was performed twice in 2000 for treatment of arsenic in soil and groundwater. Arsenic concentrations initially decreased but subsequently rebounded above MTCA cleanup levels. Glacier is currently negotiating an agreed order with Ecology to complete an RI/FS for the site.

Aquatic studies have documented elevated concentrations of dioxins/furans in surface and subsurface sediments within the Glacier Bay area. Sediment samples collected in the waterway near the Glacier property in 2005 and 2007 contained arsenic, zinc, phthalates (butyl benzyl phthalate), and PCBs at concentrations above the Sediment Quality Standards (SQS). High levels of dioxins and furans were also detected in the areas offshore of the Glacier property.

Maintenance dredging of the in-water berthing area adjacent to the Glacier property has been conducted by Glacier or its predecessors in 1986, 1993, and 2005. The sediments dredged from the northern portion of the in-water berthing area, which is located closest to the Property, contained elevated concentrations of arsenic, copper, tributyltin (TBT), and other heavy metals.

### *2.4.2 MRI Corporation/Port of Seattle (Terminal 115)*

The Port-owned Terminal 115 property is located immediately south of the Glacier property. The Terminal 115 property was developed by filling a former bend in the Duwamish River with dredged sediments and other fill materials. Development of the terminal property was completed during the mid-1960s.

A tin reclamation facility was located in the northwest corner of the Terminal 115 property between 1963 and 1998. The facility operated under several company names, including Mandt Chemicals, MRI Corporation, Proler International Corporation, and Schnitzer Steel Industries. Operations included the reclamation of tin from steel cans and glass sludge, with smelting of the reclaimed tin and production of ingots for sale. Wastes produced at the plant included spent plating solution, "black mud" containing tin residue, and alkaline lacquer sludge containing vinyls, epoxys, tin, and lead.

Before 1972, certain wastewaters were managed in two lagoons located in the eastern portion of the MRI property, adjacent to Glacier Bay. The unlined lagoons reportedly operated by settling and evaporation, with no direct discharges to the Duwamish River noted in site documents. The lagoons are visible in the aerial photograph taken in 1966 (Appendix A).

Sludges accumulating in the lagoons were reportedly excavated and sold for reclamation. The lagoons were filled and paved in 1972.

After 1972, wastewaters were managed by discharge to the sanitary sewer. Elevated levels of zinc and lead were noted in wastewater monitoring reports filed between the 1970s and 1990s. Solid wastes were reportedly managed by off-site shipment to reclamation facilities or waste treatment/disposal sites.

### *2.4.3 Alaska Marine Lines (AML)*

The AML property is located immediately to the north of the Property owned by DSI. AML operates a containerized freight barge terminal and warehouse, which includes a dock and berthing area. A graving dock was formerly located in the southeast corner of the AML property and was leased to DSI until January 2007. The graving dock has been filled by AML for upland use. That work included installation of a new stormwater treatment system consisting of two underground vaults.

AML began operations at the property in 1993 and developed the barge terminal. At that time, the property was regraded and paved, and a concrete dock replaced a former timber dock. AML leased a portion of the former DSI property, which it subsequently purchased from DSI in 1999 (Figure 3).

Environmental conditions at the AML property have been characterized during previous soil and groundwater sampling. Two remedial actions have been conducted at the property, including two underground storage tank (UST) removals in 1990 and an independent remedial action in 1993 at the portion of the AML property that had been leased from DSI. Hazardous substances detected in soil and groundwater primarily consist of petroleum-related compounds and polycyclic aromatic hydrocarbons (PAHs).

## 2.5 Property Topography and Bathymetry

The topography of the Property is relatively flat, ranging from elevation 14 feet above MLLW elevation to 17 feet MLLW (Figure 2). Topography and bathymetry are shown on Figures 2 and 7. Figure 5 presents the current top of bank and shoreline features. The shoreline along the western side of the marine railway has been bulkheaded. Armoring has

been placed along other portions of the shoreline in the northern and southern areas of the Property (Figure 6).

In-water and overwater structures are located along the shoreline of the waterway, including the shipyard pier, several mooring dolphins, and a float. DSI ceased using the drydocks formerly moored at the Property in March 2007, and the drydocks were subsequently sold and removed.

## 2.6 Property Geology and Hydrogeology

The geology and hydrology of the Property and surrounding vicinity are described below. The information set forth below is based on information presented in existing environmental reports.

### *2.6.1 Geologic Conditions*

The Property is located in the southern part of the Puget Sound Lowland, a broad, relatively level glacial drift plain dissected by a network of deep marine embayments. The Property is located within the floodplain of the Duwamish Valley. The Duwamish Valley is a former marine embayment that has been filled with sediment since the most recent period of glaciation, the Pleistocene Age Vashon Glaciation (Luzier 1969). The Duwamish Valley is bounded to the east and west by glacial drift uplands.

Up to approximately 360 feet of alluvium, consisting of clay, silt, and sand, fills the Duwamish Valley. The alluvial deposits generally overlie the Pleistocene Age Vashon Drift, which ranges in thickness from 0 feet to approximately 200 feet in the Duwamish Valley. The Vashon Drift is composed of sand and gravel glacial outwash deposits overlying a compact silt, clay, sand, and gravel till. In some areas of the Duwamish Valley, the Vashon Drift is absent, and Pre-Tertiary and Tertiary bedrock (undifferentiated sedimentary, metamorphic, and igneous rock) directly underlies the recent alluvial deposits (Richardson et al. 1968).

The portion of the Duwamish Valley in which the Property is located has undergone extensive excavation and filling since the early 1900s. The extent of excavation and filling varies from property to property. The Property is located along and consistent with the

original shoreline of the Duwamish River, such that the extent of fill activity is less than at other nearby properties (i.e., fill thicknesses are greater at properties located in former river bends and side channels).

The Property is underlain by a relatively thin layer of fill. The fill consists of gray and brown sand that ranges from very fine to coarse sub-rounded grains. The fill extends from 2 to 10 feet below ground surface (bgs) in upland areas. Boring logs identify a pervasive silt layer at the base of the fill, which may represent the uppermost native soil (i.e., no geological information currently exists below 10 bgs). Organic material (plant roots, etc.) is also present in this silt layer.

Along the western portion of the Property, a silt layer that ranges from 0.5 feet to 2 feet thick is present at depths of 1 to 6 feet bgs. Along the eastern portion of the Property near the shoreline, the sand content increases in the silt layer. The shoreline in the eastern portion of the Property has been modified by armoring and bulkheading.

### *2.6.2 Groundwater*

Groundwater in the Duwamish Valley occurs in unconfined conditions in a shallow aquifer and under confined conditions in some areas within a deeper aquifer (Washington Division of Geology and Earth Resources 1989). Recharge to the water table aquifer is primarily by direct infiltration of precipitation and periodic contributions from streams during high-stage periods (Richardson et al. 1968). Regional groundwater flow in the unconfined aquifer is typically toward the LDW.

Site-specific groundwater gradients have not been defined. However, based on topography and regional geologic conditions, groundwater gradients are expected to be generally easterly, toward the LDW. Tidal fluctuation of groundwater elevations is likely to occur along the eastern edge of the Property (i.e., within 100 to 200 feet of the shoreline), resulting in tidally-influenced mixing of groundwater prior to discharge into the LDW.

### *2.6.3 Surface Water*

The LDW flows generally north to Elliott Bay, though the river flow is subject to periodic reversal due to tidal influences. The waterway receives the majority of its flow from the

Green River, which originates at the crest of the Cascade Mountains near Stampede Pass and flows through Howard Hanson Dam (RM 65) and Tacoma Headworks Dam (RM 61). Annual average discharge from the Duwamish Waterway is 65.2 to 66.7 cubic yards per second (cy/s), measured at the U.S. Geological Survey (USGS) Tukwila gauging station, with flow rates varying from 5.6 to 430 cy/s at the Auburn gauging station from 1962 to 1994 (NOAA 1998).

Most of the LDW discharge (i.e., 80 percent) enters Elliott Bay via the West Waterway due to the presence of a sill on the East Waterway (Weston 1999). Flow rates are greatest in the winter because of seasonal precipitation and lowest throughout the late summer dry season. Streamflow can be increased by surface water sources, such as storm drains, CSOs, industrial effluents, and nonpoint source inputs, although these sources of flow are expected to be less than 1 percent of total discharge, even during peak flow events (Windward 2003).

Surface water runoff from paved surfaces of the Property is captured in a stormwater conveyance system that discharges to the LDW. One ditch is located along the southern edge of the Property. Storm drains at the Property discharge to the LDW via a stormwater outfall (Figure 4 and Figure 7).

The stormwater system servicing the Property formerly consisted of 10 catch basins that conveyed water from the paved parking areas and industrial areas to a 10-inch-diameter trunk line. AML implemented stormwater system improvements and conducted soil management activities in June 2009. That work included installation of new catch basins, storm drain lines and limited regrading and fill. DSI reported these activities to Ecology in a September 17, 2009 letter. Figure 4 presents the current stormwater system locations. The 10-inch-diameter trunk line discharges to a sump located adjacent to the former marine railway. Stormwater enters the sump and is pumped through a centrifugal separator to remove solids prior to discharge via the stormwater outfall (Figure 4). Incidental rainfall is the only source of stormwater to the Property, as surface drainages are not allowed to enter the Property. The catch basins that receive runoff have been fitted with catch basin inserts and oil absorbent pillows. The system was constructed in the mid-1970s and was operated under National Pollutant Discharge Elimination System (NPDES) Permit No. WA-003093-7 until active shipyard operations ceased. DSI terminated the former NPDES permit upon

ceasing shipyard operations. Current Property stormwater management is in place under the NPDES permit covering the north adjacent property owned by AML (No. SO3001365D).

Consistent with the Ecology letter dated January 5, 2007, DSI completed the cleanout of the stormwater system and documented these activities in a January 8, 2008 letter report. This work included initial catch basin TBT sampling, jetting of the stormwater system piping, collection and disposal of generated solids and water, and video documentation of resultant piping conditions. In addition, a sweeper was used to clean the paved areas of the Property to limit the potential for dirt or other materials to enter the cleaned-out stormwater system.

## 2.7 LDW Characteristics

The physical characteristics of the LDW are described below. The information presented below is based on information developed during the LDW RI/FS.

### *2.7.1 Estuarine Features*

The LDW is a well-stratified, salt wedge-type estuary influenced by freshwater flow and tidal effects. The relative influence of each of these processes is highly seasonally dependent. Freshwater moving downstream overlies the tidally driven saltwater wedge. Typical of salt-wedge estuaries, the LDW has a sharp interface between the freshwater outflow at the surface and saltwater inflow at depth. The 25-part-per-thousand salinity layer near the river mouth occupies most of the water depth, but tapers toward the upriver portion of the estuary. Freshwater inflow exerts a strong influence on the relative thicknesses of the two layers. The thickness of the freshwater layer increases with increasing river flow rates throughout the LDW.

Saltwater enters the LDW principally through the lower water column of the West Waterway. The salt wedge discharges into the flowing surficial freshwater lens as a result of upward entrainment of saline water across the interface separating the two layers. To replace the entrained saltwater, the net transport of the salt wedge is in the upstream direction, even if the salt wedge is stationary. Dye studies indicate that downward vertical mixing over the length of the salt wedge is almost non-existent (Schock et al. 1998). Tidal forcing superimposes an additional velocity component associated with the migration of the salt wedge upstream and downstream in response to tidal cycles. Santos and Stoner (1972)

described how the upstream location or "toe" of the salt wedge, which is typically located between Slip 4 and Turning Basin 3 (approximately 1.5 to 3.3 miles upstream of the Property, respectively), is determined by both tidal elevation and freshwater inflow.

### *2.7.2 Bathymetry and Shoreline Conditions*

Common shoreline features within the LDW include constructed bulkheads, piers, wharves, buildings extending over the water, and steeply sloped banks armored with riprap or other fill materials (Weston 1999). Intertidal habitats are dispersed in relatively small patches (i.e., generally less than 1 acre in size), with the exception of Kellogg Island, which represents the largest contiguous area of intertidal habitat remaining in the Duwamish River (Tanner 1991).

As shown in Figure 6, the majority of the shoreline abutting the Property is steep and covered with riprap with limited vegetation along the top of slope. An overwater dock is present in this area and attaches to a 14-inch wood beam that extends to the southwest corner of the larger pile-supported wood dock (known as the east dock) that extends north along the eastern edge of the Property. A wooden float is moored to two seven-pile dolphins just south of the east dock. The marine railway is situated shoreward of the east dock along the majority of the eastern shoreline of the Property. The western boundary of the marine railway is supported by a bulkhead wall. A third pile-supported dock structure (known as the west dock) covers the majority of the northeast corner of the Property.

The graving dock formerly leased from AML was located along the AML property shoreline just north/downstream from the Property as shown in Figure 6. The graving dock has since been filled by AML for upland reuse.

Current bathymetry is shown in Figure 2 and Figure 7. This bathymetry has been affected by historical dredging and shoreline modifications. During the early 1980s, DSI performed limited dredging and armor stone placement along a portion of the waterway and in the southeastern portion of the Property. Bathymetry along the eastern side of the Glacier property has been modified by maintenance dredging of Glacier's in-water berthing area in 1986, 1993, and 2005. Dredging may also have been conducted during original facility construction in the 1960s.

### 2.7.3 Sediment Physical Characteristics

Bottom sediment composition is variable throughout the LDW, ranging from sands to mud depending on the sediment source and current velocity. The sediment typically consists of slightly sandy silt with varying amounts of organic detritus. Coarser sediments are present in nearshore areas adjacent to outfalls and storm drain discharges (Weston 1999). Finer-grain sediments are typically located in remnant mudflats, along channel side slopes, and within portions of the navigation channel. Main channel sediments near Turning Basin 3 are predominantly sands, whereas sediments toward the mouth are predominantly fine-grained silts. Sediments upstream of Turning Basin 3 are generally coarser than in the remaining downstream portion of the LDW.

Based on evaluation of the physical characteristics identified during the river-wide sediment sampling in the vicinity of the Property (Section 3), sediment composition in the nearshore areas adjacent to the Property is typically a sandy-silty material with a low percentage of coarse materials. The coarse fraction likely increases near the upper reaches of the shoreline, where wave energy and shoreline armoring increase.

### 2.7.4 Sediment Fate and Transport

Sediment transport within the LDW is influenced by many variables, including hydrodynamic forces attributable to the salt wedge, sediment loading from upstream and upland sources, channel morphology, and resuspension processes, such as propeller scour, bioturbation, bed shear stress, and dredging. Sediment deposition and resuspension have been assessed in the LDW during various previous investigations. The LDW Group (LDWG) Phase I RI Report (Windward 2003) and subsequent Draft Phase 2 RI Report (Windward 2007d) compiled and summarized these assessments.

The following sections summarize the LDWG findings with respect to sediment transport properties river-wide and in the vicinity of the Property.

#### 2.7.4.1 River Currents and Propwash

Several organizations have independently measured current velocities within the LDW as part of a wide range of environmental investigations (Santos and Stoner 1972; Stevens

Thompson and Runyan 1972; Stoner et al. 1975; Prych et al. 1976; Harper-Owes 1983; Weston 1993, Dail 1996; King County 1999).

The most extensive current velocity measurements within the LDW were collected by King County for a 3-month period beginning August 1996, recording currents at approximately 3 feet above the mudline at 15-minute intervals at two stations (King County 1999) using acoustic Doppler methods. The net flow velocities and short-term velocity fluctuations within the upper (freshwater) and lower (saltwater) layers were characterized. The velocity profiles showed a net seaward flow (positive values) in the upper freshwater half of the water column and net upstream flow in the lower saline half of the water column. No bottom water speed greater than 60 cm/s (the upper range of assumed threshold current for sediment bed movement) was observed during the recording interval. The 50th, 90th, and 95th percentile speeds were 17, 33, and 37 cm/s, respectively, for station SBW. Measured currents exceeded 40 cm/s (the bottom range of assumed threshold current for sediment bed movement) less than 3 percent of the time at station SBW.

LDW RI/FS studies have demonstrated that under all tidal conditions and design flood events (i.e., 2-year, 10-year, and 100-year storms), the salt wedge in the Duwamish Waterway extends upstream from the Property. Sediment deposition is facilitated by the interaction of the salt wedge with the overlying freshwater (Windward 2003). Freshwater moving downstream overlies the tidally driven saltwater wedge. When fresh river water encounters the salt wedge, the freshwater no longer applies a shear stress to the riverbed, but instead applies a stress to the top of the salt wedge, causing the bed load to deposit. This results in sediment movement (with associated chemicals) upstream during flood tide conditions, and potential deposition adjacent to the Property under the appropriate hydraulic and tidal conditions discussed above. The salinity also increases sediment deposition by increasing particle flocculation (Windward 2003).

Analysis of vessel-induced sediment resuspension potential (i.e., propwash) has not been performed at or adjacent to the Property.

### 2.7.4.2 Sediment Transport Evaluations

The LDWG Phase I RI evaluated previous sediment transport investigations conducted in the LDW to determine which parameters contribute to sediment transport. The results of the evaluation indicate that the sources of sediment in the reach of the LDW in the vicinity of the Property potentially originate from both upstream and downstream locations depending on the tidal cycle and the hydraulic characteristics.

The most long-term sediment mobility study was conducted by Harper-Owes (1983), which compiled and synthesized the available flow and suspended sediment loading data collected within the LDW from 1960 to 1980 to assess river-wide sediment sources. During this period, the Green River upstream of the Property was the predominant source of sediment loading, contributing approximately 99 percent of the total sediment load entering the LDW. The remaining 1 percent was contributed from local sources along the LDW (e.g., upland runoff and a variety of discharges). The study determined that the majority of the sediment input to the LDW occurred during peak flow events (i.e., sediment solids loading increased significantly during peak discharges).

As reported by Harper-Owes (1983), the LDW has been a net sink for sediments (i.e., a depositional environment) during all river flow conditions from 1960 to 1980. On average, the LDW retained approximately 90 percent of the total incoming sediment load. Sediments deposited within the LDW have either contributed to steady accretion of the bed or have been removed from the system (disposed of off site) through routine channel maintenance and berth dredging operations (Windward 2003). These results are consistent with the findings of the current monitoring studies.

More recently, in 2004, the LDWG conducted a sediment transport characterization study. The results were summarized and evaluated in a draft (Windward 2005a) and final report (Windward 2005b). The draft report provided an evaluation of the data, but the final report was limited to a summary of the collected data. The investigation included the collection of two geochronology cores (i.e., stations Sg-3 and Sg-4) on the east bank of the LDW across from the Property in a shallow bench area. These cores demonstrated that sediments in the test area were depositional, with net sedimentation rates of 1.6 cm/year to greater than 2.0

cm/year. However, these results may or may not be applicable to the Property due to differences in bathymetry, land use and shoreline geometry.

A sediment transport evaluation is currently being conducted as part of the LDW RI/FS process. That evaluation builds on previous studies to estimate potential areas of erosion and deposition, and to estimate the transport of suspended sediments and sediment bed load. Results of the transport evaluation are discussed in the Draft Sediment Transport Modeling Report (Quantitative Environmental Analysis 2007).

#### *2.7.4.3 Navigation Channel Dredging*

The navigation channel in the LDW is actively maintained by the ACOE. Waterway maintenance has been performed since completion of the channel in 1916 to maintain the appropriate depths in the federal navigation channel for commercial vessel traffic (Weston 1999). The current project dimensions for the Duwamish Waterway in the vicinity of the Property (and south as far as the First Avenue South Bridge) include a depth of 30 feet below MLLW and a width of 200 feet. The waterway is narrower and shallower in upstream areas south of the First Avenue South Bridge. A turning basin is located at the upstream end of the LDW. Much of the sediment removed during routine navigation dredging occurs in the turning basin and in the upper portions of the waterway. Dredging is less common in the federal channel areas near the Property.

Berth areas are not dredged by the ACOE as part of waterway maintenance. Berth areas are typically dredged by the Port or by adjacent property owners when additional navigation depth is required for docking or other waterway uses. Dredging of a portion of the Property was conducted by DSI in the early 1980s. Maintenance dredging has also been conducted at the adjacent Glacier in-water berthing area in 1986, 1993, and 2005, as well as potentially during the 1960s when the cement dock was originally constructed.

The current stability of berth side slopes has not been evaluated in areas near the Property.

## 2.8 Natural Resources/Sensitive Receptors

The Property is located in an industrial area, is zoned for industrial use, and is surrounded by industrial properties. No residential or recreational areas are located adjacent to the

Property. The Property is currently being used by AML for container storage and truck access and is being marketed by DSI for industrial use.

Other than on-site industrial workers employed by AML, the principal receptors at the Property include the human users and aquatic organisms utilizing the LDW. These receptors include benthic (i.e., sediment-dwelling) organisms, fish, and other wildlife using the Duwamish River, and human consumers of seafood harvested from the LDW. These receptors are relevant to evaluation of sediment and surface water contamination. An analysis of natural resources and sensitive receptors within the LDW is contained in the LDW RI/FS (Windward 2003 and 2007d). Final cleanup levels and risk assessment conclusions have not been defined.

# 3 ENVIRONMENTAL QUALITY

The Property has been the subject of numerous rounds of environmental investigation, including testing of soils, groundwater, and sediments. That work has included testing of on-property and off-property areas. This section discusses current environmental conditions at the Property based on existing information from these prior studies. This discussion addresses environmental conditions at the Property owned by DSI, as well as relevant information for adjacent berth areas and nearby portions of the LDW and the Glacier Bay source control study area.

Previous on-site remedial actions are discussed in Section 3.1 and historic stormwater quality is discussed in Section 3.2. These sections provide the necessary context for interpretation of current soil, groundwater and sediment conditions. Current environmental conditions at the Property are then summarized in Section 3.3 for soil and groundwater, in Section 3.4 for shoreline seeps to surface water, and in Section 3.5 for sediments. Preliminary reference values are presented to compare against existing data, however cleanup levels will be developed during preparation of the RI/FS.

## 3.1 Previous Remedial Actions

Remedial actions have been performed in upland portions of the Property, including the decommissioning of underground storage tanks (USTs) in two areas and the completion of an independent remedial action in the Parcel B portion of the Property. The locations of these previous remedial actions are shown on Figure 7.

### *3.1.1 1986 Leaded Gasoline UST Closure*

In 1986, prior to the enactment of the UST regulations (Chapter 173-360 Washington Administrative Code [WAC]), a 500-gallon UST holding leaded gasoline was closed in place. Based on available information, that UST was first installed in the 1960s. This tank is located within close proximity to a 26 kilovolt, 100-foot-tall power pole and an adjacent building foundation. At the time of the UST closure, a representative from Seattle City Light visited the Property to assess the threat to the power pole. The representative concurred with DSI's concerns and recommended to the Seattle Fire Department that the UST be filled in place.

At the time of closure, no subsurface samples were collected. Although closed in place, the UST does appear on a recent UST list update that was issued by Ecology on August 10, 2006.

### *3.1.2 1993 Remedial Action*

During the development of the parcel previously leased to and subsequently purchased by AML (shown as Areas A and B on Figure 3), soil affected by an unknown release of petroleum product was discovered. Historically, this area of the property now owned by AML and formerly owned by DSI was leased by DSI to various entities for storage of used machinery, parking of trucks and trailers, and storage and distribution of lumber.

In August 1993, Environmental Services Limited performed a preliminary site assessment consisting of five soil borings, five test pits, and four monitoring wells (the remaining wells, MW4 and MW5, are shown on Figure 7). The results indicated total petroleum hydrocarbon (TPH) constituents in soil and groundwater exceeding MTCA industrial cleanup levels. In response, DSI contracted with Hart Crowser, Inc. (HCI) in October 1993 to oversee the excavation of approximately 650 cubic yards (cy) of contaminated soil.

During excavation of the affected soil, several restrictions (a 26 kilovolt buried powerline, a pad-supported power transformer foundation, the graving dock foundation, and the shallow groundwater table) were encountered, limiting the extent of excavation in some areas. After soil removal, 12 confirmation soil samples were collected from the excavation sidewalls. All of these samples met MTCA industrial cleanup levels for SVOCs and eight were below MTCA industrial cleanup levels for TPH gasoline range (TPH-G), TPH diesel range (TPH-Dx), and TPH lubricant oil range (TPH-O). The four samples above MTCA industrial cleanup levels for TPH (Method 418.1) ranged in concentration from 480 milligrams per kilogram (mg/kg) to 13,000 mg/kg. The MTCA industrial cleanup level at the time of the remedial action was 200 mg/kg. The excavation area was backfilled and capped with asphalt, and an additional monitoring well (shown as MW5 on Figure 7) was installed to assess downgradient groundwater quality.

Groundwater samples were collected from MW4 and MW5 over four events in 1994 (two wet and two dry) and one event in February of 1999. Analysis of the MW4 data, reported by HCI, indicated a 25 percent reduction in TPH concentrations. For all five sampling events,

MW5 met MTCA groundwater cleanup levels for TPH. Benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected.

### *3.1.3 2000 Diesel and Gasoline UST Excavations*

In 2000, four USTs containing diesel fuel and unleaded gasoline were excavated and removed. Those four USTs were installed between 1968 and 1979. The excavation was performed by Quality Tank Service, Inc., a certified UST decommissioning contractor. The excavation was also supervised by Roy Kuroiwa, a professional engineer registered in the State of Washington.

During the initial excavation, 60 cy of soil were excavated with the USTs, prior to collection of bottom and sidewall soil samples. Seven of the initial confirmation samples contained concentrations of total petroleum hydrocarbons (TPH-Dx and TPH-G) and benzene above MTCA Method A industrial cleanup levels for soil. An additional 20 cy of soil were excavated from these locations and samples were recollected.

Five of the second round of confirmation samples exceeded MTCA industrial cleanup levels. Four of the samples exceeded the TPH-G cleanup level and one slightly exceeded the benzene cleanup level. These data are summarized in Table 2. No groundwater samples were collected as part of the confirmation sampling program.

## 3.2 Historic Stormwater Quality

Environmental sampling data have been collected historically for stormwater at the Property that came in contact with industrial activities during active shipyard operations. A discussion of historic stormwater management and reporting is presented in the EPA Section 104(e) response letter dated May 15, 2006 and prepared by DSI. Sampling results are presented in the Glacier Bay Source Control Area report, *Summary of Existing Information and Identification of Data Gaps* (SAIC 2007). These sampling activities were performed not as part of remedial investigations, but rather under the terms of the shipyard's former NPDES permit. These data are useful in documenting historic stormwater management practices during the period of active shipyard operations. However, they do not provide information useful to the analysis of current conditions or sediment source control subsequent to shipyard closure.

DSI's historic stormwater was presented to flow from the Property to West Marginal Way, south, and then discharge to Glacier Bay as referenced in Figure 5 of Ecology's Summary of Existing Information and Data Gaps (SEIDG) Report for Glacier Bay Area. The source of this figure is documented as Seattle Public Utilities. DSI researched this issue. It determined that stormwater did not discharge to Glacier Bay. Additionally, the stormwater line referenced in the SEIDG Report was actually the DSI sanitary line that discharged to the METRO sanitary system. The only Property stormwater discharge was through the stormwater line system and Outfall 005 shown on Figure 2. DSI presented this information to Ecology in a July 21, 2009 letter. DSI has included the sanitary line on Figures 2 and 4 for reference.

The DSI stormwater system was constructed in the mid-1970s. It operated under NPDES Permit No. WA-003093-7 until active shipyard operations ceased. As described in Section 2.3, the NPDES permit covered both the stormwater outfall and wastewater outfalls from the dry dock and graving dock operations. Figure 2 presents the historic stormwater outfall location (Outfall 005) at the shoreline bulkhead. The discussion below addresses the historic stormwater quality from Outfall 005, as the dry dock and graving dock outfalls specifically related to wastewater management. Section 2.3 provides historic wastewater management details.

Previous stormwater inspection and monitoring have included numerous Ecology inspections, DSI discharge monitoring, and observations and sampling from the Puget Soundkeeper Alliance (PSA). Although a majority of inspection and monitoring activity focused on the dry docks and graving dock wastewater handling, required inspection and monitoring of stormwater to Outfall 005 indicated that upland activities contributed contaminant inputs to the stormwater system. Documented upland inputs to the stormwater system included blasting grit and a hand-washing sink from the paint shop.

Historic stormwater monitoring from Outfall 005 involved testing for copper, lead, zinc, turbidity, background turbidity, and oil and grease. This monitoring periodically indicated elevated concentrations of metals (copper, lead, and zinc) and turbidity. In 1995, Ecology required DSI to increase the frequency of stormwater monitoring and implement additional corrective actions, including catch basin inserts, weekly cleaning of paved areas, improving blasting grit storage containment, and improving the stormwater treatment system. The

stormwater treatment system consisted of a centrifugal separator system prior to Outfall 005 discharge at the bulkhead. In order to address stormwater inputs to sediment, the sediment RI activities will include the full list of SMS testing parameters, including TBT.

## 3.3 Current Soil and Groundwater Quality

Extensive soil and groundwater sampling information is available for the Property. Available data are summarized below.

### *3.3.1 Recent Upland Investigations*

The most recent evaluation of soil and groundwater quality was conducted in 2006, in response to data requests from Ecology. As required by Ecology in its letters dated July 10, 2006 (Ecology 2006a) and August 3, 2006 (Ecology 2006b), DSI conducted an investigation to assess the nature and extent of soil and groundwater contamination at the Property. The investigation, which was conducted in accordance with the Ecology-approved Preliminary Investigation Work Plan (Work Plan: Anchor 2006a), commenced on September 27, 2006. Sampling locations from the 2006 investigation are shown on Figure 8 and included the following:

- **Temporary Soil Borings:** Sampling of soils and groundwater from 12 temporary soil borings was completed. Two soil samples and one groundwater sample were collected at each location (for a total of 24 soil samples and 12 groundwater samples).
- **Resampling of Existing Wells:** The wells installed as part of the 1993 Independent Remedial Action (MW5 and MW4 shown on Figure 7) were redeveloped and sampled, producing two additional groundwater samples.
- **Catch Basin Sampling:** Solids from the catch basin adjacent to the stormwater system sump were collected.

The results of the 2006 investigation were summarized in a Preliminary Investigation Data Report (Data Report; Anchor 2006b). Table 3 includes a list of all stations and sample identifiers.

### 3.3.2 Upland Conditions by Property Area

The analytical results from the 2006 study are summarized by area below. For this purpose, the data for the Property have been discussed in the following areas:

- **Northwestern Area:** The Northwestern Area includes the two monitoring wells (MW4 and MW5) placed in locations expected to be downgradient of the 1993 Remedial Action Area. Two soil borings (DSI-02 and DSI-03) are also located in this area. Boring DSI-03 is located near the UST closed in place in 1986.
- **Rail Spur Area:** This area consists of the end of the rail spur, and is located along the southern property boundary adjacent to the Glacier property. One boring (DSI-01) was located in the Rail Spur area. The Rail Spur area is located over 500 feet from the shoreline.
- **Central Area:** This area is located in the center of the Property (Parcel C). This area is over 200 feet from the shoreline. This area is presumed to be downgradient of the 1993 Remedial Action Area and the Rail Spur Area. Three soil borings were placed in the Central Area, including DSI-04, DSI-05, and DSI-08.
- **2000 UST Removal Area**: This area includes the soils and groundwater in the vicinity of the 2000 UST removal. Two soil borings (DSI-06 and DSI-07) were located in this area. This area is presumed to be located downgradient of the Central Area and upgradient of the Shipyard Nearshore Area.
- **Shipyard Nearshore Area:** The Shipyard Nearshore Area includes the upland areas at the top of the marine railway. This area is bordered on one side by a bulkhead and is located within approximately 150 feet of the shoreline. These areas are presumed to be downgradient of the Central Area and the 2000 UST Removal Area. Three borings (DSI-09, DSI-10, and DSI-11) were located in the Shipyard Nearshore Area.
- **Parcel D Nearshore Area:** This area is located in the southeastern corner of the Property, in an area potentially downgradient of former Reichhold Chemical operations that were performed on the Glacier property. Boring DSI-12 was located in the Parcel D Nearshore Area.

Summaries of existing soil and groundwater data are presented in Tables 4, 5, 6, and 7. Tables 4 and 5 present soil and groundwater data in comparison to MTCA Method A cleanup levels for industrial soil and groundwater, respectively. Tables 6 and 7 evaluate soil and

groundwater data from the nearshore areas against SMS criteria and against surface water quality criteria, respectively.

Groundwater data are provided both for total metals and for dissolved metals. Due to turbidity in tested groundwater samples, the groundwater data for dissolved metals are used for comparison to groundwater cleanup levels. Total metals data are provided for information purposes, but are not considered representative of groundwater quality.

#### *3.3.2.1 Northwestern Area*

Soil and groundwater quality in the Northwestern Area comply with MTCA cleanup levels, with the exception of soil gasoline concentrations and groundwater diesel concentrations at location DSI-03.

Wells MW4 and MW5 are located downgradient of the 1993 Remedial Action Area. No exceedances of MTCA groundwater cleanup levels for petroleum, dissolved metals, VOCs, SVOCs, PCBs, or pesticides were noted for these wells. Results indicate that groundwater quality downgradient of the 1993 Remedial Action Area was below MTCA cleanup levels.

Current soil quality in the Northwestern Area was assessed using data from borings DSI-02 and DSI-03. No exceedances of MTCA cleanup levels were noted in DSI-02. However, in DSI-03, low levels of gasoline hydrocarbons were detected in surface (0 to 3 feet bgs) and shallow subsurface (3 to 5 feet bgs) soils. The measured gasoline concentrations were 92 and 110 milligrams per kilogram (mg/kg), and no benzene was detected. The concentration of gasoline in the deeper soil sample was only slightly above the MTCA Method A cleanup level for gasoline in soils. No petroleum fractionation testing was performed to assess site-specific soil cleanup levels for this hydrocarbon-impacted soil.

Low levels of diesel hydrocarbons were detected at station DSI-03 in groundwater. The measured concentrations (0.93 milligram per liter [mg/L]) were slightly greater than the default MTCA Method A cleanup level for diesel hydrocarbons (0.5 mg/L). No gasoline or motor oil hydrocarbons were detected.

Other than petroleum hydrocarbons at DSI-03, no exceedances of MTCA groundwater cleanup levels were noted at DSI-02 or DSI-03. Concentrations of dissolved metals, VOCs, SVOCs, PCBs, or pesticides were non-detect or were below applicable cleanup levels. Neither PCBs nor pesticides were detected in groundwater. Results indicate that groundwater quality in the Northwestern Area was below MTCA cleanup levels.

#### *3.3.2.2 Rail Spur Area*

The current soil and groundwater quality in the Rail Spur Area, which is located over 500 feet from the shoreline, complies with MTCA cleanup levels, with the exception of arsenic in soil and groundwater. A concentration of 48 mg/kg of arsenic was measured in shallow soil (0 to 3 feet bgs) from boring DSI-01. This concentration exceeds the MTCA Method A cleanup level of 20 mg/kg. Arsenic concentrations in subsurface soils (4 to 6 feet bgs) at this same location were 3.5 mg/kg, well below the MTCA Method A cleanup level.

Dissolved arsenic groundwater concentrations at boring DSI-01 were elevated, with a dissolved arsenic concentration of 68.4 micrograms per liter (µg/L), compared to a Method A groundwater cleanup level of 5 µg/L. Results suggest a localized on-property or off-property source of arsenic contamination in this area.

No other hazardous substances were present at elevated concentrations at boring DSI-01, either in soils or in groundwater. Groundwater concentrations of pesticides and PCBs were all below reporting limits.

#### *3.3.2.3 Central Area*

Soil and groundwater quality in the Central Area, which is located over 200 feet from the shoreline, complies with MTCA cleanup levels, with the exception of groundwater vinyl chloride concentrations. Vinyl chloride was detected in groundwater collected from each of these borings at concentrations slightly above the MTCA Method A cleanup level (0.2 µg/L) for groundwater. Vinyl chloride concentrations were measured at 0.6, 0.3, and 0.4 µg/L in groundwater collected from borings DSI-04, DSI-05, and DSI-08, respectively. The detected concentrations were well below the MTCA Method B surface water cleanup level for vinyl chloride.

Vinyl chloride can be produced from the degradation of tetrachloroethylene or trichloroethylene in groundwater; however, these compounds were not detected in these borings. The specific source of the vinyl chloride detections has not been determined.

No other hazardous substances were present at elevated concentrations in the Central Area soils or groundwater. Neither petroleum, pesticides, nor PCBs were detected in groundwater. Dissolved arsenic concentrations were below MTCA Method A cleanup levels.

#### *3.3.2.4 2000 UST Removal Area*

Soil and groundwater quality in the 2000 UST Removal Area generally comply with MTCA cleanup levels, with the exception of petroleum hydrocarbons. At boring DSI-06, gasoline (120 mg/kg) and diesel (2,700 and 2,200 mg/kg) hydrocarbons were noted in soils, but no petroleum impacts to groundwater was detected. At boring DSI-07, soils were impacted by gasoline (74 and 36 mg/kg), and groundwater had elevated concentrations of gasoline (2.0 mg/L), diesel (1.9 mg/L), and benzene (180 µg/L).

No other hazardous substances were present at elevated concentrations at borings DSI-06 or DSI-07, either in soils or in groundwater. Groundwater concentrations of pesticides and PCBs were all non-detect. Groundwater concentrations of dissolved arsenic were below MTCA Method A cleanup levels, and vinyl chloride was not detected.

#### *3.3.2.5 Shipyard Nearshore Area*

Areas of subsurface soil impacts were noted in the Shipyard Nearshore Area. Hazardous substances noted in the two borings located closest to the shoreline (DSI-09 and DSI-11), but not in the boring located 150 feet back from the shoreline (DSI-10). Results suggest that soil and groundwater quality in the immediate vicinity of the shoreline may require further evaluation, but the impacts are largely limited to shoreline areas.

At boring DSI-09, elevated concentrations of metals (i.e., arsenic, cadmium, copper, lead, and zinc) were detected at depths of 3 to 5 feet bgs. These concentrations exceed MTCA Method A industrial and/or SMS sediment cleanup levels (see Table 4 and Table 6). PCBs, pesticides, VOCs, chlorinated benzenes, and phenols were not detected in soils or groundwater at this

location. No exceedances of groundwater cleanup levels or surface water criteria were noted at boring DSI-09.

At boring DSI-11, there were no chemicals exceeding cleanup levels in soil. No exceedances of soil cleanup levels for petroleum were noted, though groundwater diesel concentrations exceeded the MTCA Method A cleanup level. No exceedances of cleanup levels for any other parameters were noted for soil or groundwater at boring DSI-11. PCB and pesticides were not detected in groundwater.

#### *3.3.2.6 Parcel D Nearshore Area*

The soils in the Parcel D Nearshore Area (boring DSI-12) contained elevated concentrations of PAH compounds in surface soil (0 to 3 feet bgs) and in subsurface soil (3 to 5 feet bgs). Elevated concentrations of PAH in groundwater were also detected. Groundwater diesel hydrocarbon concentrations (0.63 mg/L) slightly exceeded the MTCA Method A cleanup level (0.5 mg/L).

No heavy metals were detected at elevated concentrations in boring DSI-12. PCBs, chlorinated benzenes/phenols, and pesticides were not detected in soils or groundwater. The sources of the PAH and petroleum impacts in the Parcel D nearshore area have not been determined.

#### *3.3.2.7 Catch Basin Solids*

Stormwater catch basin solids (sample DSI-22) were sampled as part of the 2006 upland investigation. The catch basin solids data are summarized in Table 6. That table includes comparisons against SMS numeric criteria (SQS and Cleanup Screening Levels [CSL]). These comparisons are not directly relevant, as the catch basin solids do not represent marine sediments. However, the comparisons provide a basis for screening hazardous substances at the Property.

As shown in Table 6, the catch basin solids contained elevated concentrations of copper, mercury, and zinc. Other heavy metals did not exceed SMS criteria. As part of the stormwater system cleanout activities during July 2007, a solids sample was collected at the

outfall catch basin (as collected during the 2006 upland investigation) and analyzed for TBT. TBT was detected at a concentration of 0.74 µg/kg.

The only organic compounds that exceeded SMS criteria were PAH compound acenaphthene (the concentration of which slightly exceeded the SQS), and two phthalate compounds (butylbenzylphthalate exceeded the SQS but not the CSL, and bis(2-ethylhexyl)phthalate exceeded both the SQS and the CSL). PCBs and chlorinated hydrocarbons were not detected. Other organic compounds were not detected or were below the SMS criteria.

## 3.4 Shoreline Seep Water Quality

As part of the Phase 2 RI, LDWG conducted a reconnaissance survey of all LDW seeps and collected water from a subset of these seeps for chemical analysis. The data collection was designed to provide the following information:

- Evaluate whether seep discharges below mean higher high water (MHHW) and above MLLW may significantly contribute to impacts to the LDW, either through dissolved phase, colloidal phase, or product phase inputs.
- Determine if additional seeps should be selected for sampling in the future either as part of the Phase 2 RI, site-specific source evaluations, or as part of the source control work being conducted by the Lower Duwamish Source Control Work Group.
- Determine if additional surface sediment samples are needed from seep areas.

The results of the seep investigation are provided in the following LDWG submittal: *Data Report: Survey and Sampling of LDW Seeps – Final* (Windward 2004a).

No seeps were identified at the Property. However, two seeps were identified and sampled along the shoreline of the cove adjacent to the Glacier facility (Figure 8). A single sample from each seep was collected on July 2, 2004. The rationale for the collection of chemical samples from these seeps was described as follows:

- Seep 61 – Adjacent to Glacier (near former Reichhold Plant); discolored seep water and sulfide odor observed during reconnaissance survey.
- Seep 62 – Adjacent to Glacier (near former Reichhold Plant); dioxin/furans detected in sediment.

The water samples collected from Seeps 61 and 62 were analyzed both unfiltered and after filtering. Seep 61 was analyzed for VOCs, metals, mercury, SVOCs, PCBs, organochlorine pesticides, total organic carbon (TOC), total suspended solids (TSS), TPH-D, and TPH-G in the unfiltered samples, and for metals, mercury, SVOCs, PCBs, organochlorine pesticides, dissolved organic carbon (DOC), and TPH-D in the filtered samples.

The filtered arsenic concentration in Seep 61 was greater than both the chronic and acute arsenic water quality criteria for the State of Washington (WAC 173-201). No exceedances of these criteria were noted for Seep 62. Previous testing performed in upland portions of the Glacier property has confirmed the presence of pentachlorophenol and dissolved arsenic in groundwater at concentrations exceeding MTCA cleanup levels. Results of seep sampling indicate that arsenic present in impacted groundwater at the Glacier property may be discharging to surface water within the southern portion of Glacier Bay.

## 3.5 Current Sediment Quality

A brief description of the surface and subsurface physical and chemical results are provided below.

### *3.5.1 Recent Sediment Studies*

Although no sediment samples collected by DSI as part of the 2006 investigation, numerous other studies have characterized sediment quality in the vicinity of the Property as part of the LDWG river-wide investigations. The most recent relevant LDWG studies include the following Phase 2 investigations:

- Surface Sediment Round 1 Data Report (Windward 2005c)
- Surface Sediment Round 2 Data Report (Windward 2005d)
- Surface Sediment Round 3 Data Report (Windward 2007b)
- Subsurface Sediment Data Report (Windward 2007a)
- Draft Baseline Ecological Risk Assessment (Windward 2007c)
- Draft Phase 2 Remedial Investigation Report (Windward 2007d)

A summary of the physical and chemical analytical results for surface and subsurface sediment collected as part of the above studies was obtained from the LDWG database (last

updated in April 2006). The surface and subsurface sediment data within the LDW from just south of the upstream Glacier property and just north of the downstream AML property are provided in Appendix B. The sampling data in Appendix B are grouped geographically in Tables B-1 through B-5.

Cleanup levels for the LDW have not been developed yet as part of the RI/FS process. Site-specific cleanup levels for PCBs, arsenic, and some other compounds are being evaluated as part of the LDW RI/FS and risk assessment process, and may ultimately consider risk assessment and/or background concentrations in setting final cleanup levels. Pending development of future cleanup levels, the data for heavy metals, PCBs, and SVOCs have been compared to the Ecology SMS SQS and CSL criteria (WAC 173-204).

Interpretation of biological testing data is performed using SQS and CSL interpretive criteria established under SMS regulations. A discussion of these interpretive criteria is presented in the LDW Draft Baseline Ecological Risk Assessment (Windward 2007c).

### *3.5.2 Surface Sediment Data*

Nine surface sediment stations (either 0 to 10 cm or 0 to 1 foot below mudline sampling intervals) were sampled west of the navigation channel adjacent to the Property. One station (i.e., WST354) was sampled in 1997, two stations (i.e., DR120 and DR121) were sampled in 1998, four stations (i.e., LDW-SS48, LDW-SS49, LDW-SS50, and LDW-SS53) were sampled in 2005, and two stations (i.e., LDW-SC26 and LDW-SC28) were sampled in 2006. One additional station (i.e., LDW-SS51) was sampled in the navigation channel adjacent to the Property in 2005, and seven stations were sampled on the east side of the navigation channel from 1997 to 2006.

South or upstream of the Property adjacent to the Glacier property, a total of 19 stations were sampled within the LDW. North or downstream from the Property adjacent to the AML property, a total of 12 stations were sampled within the LDW. The sampling locations are shown on Figure 8. The physical and chemical results collected from each of these areas are summarized below.

### *3.5.2.1 Physical Characteristics*

The sediments sampled west of the navigation channel adjacent to the Property exhibited the following physical characteristics:

1. Total solids ranged from 44 percent to 63 percent
2. Percent fines (silt and clay fraction) ranged from 16 percent to 94 percent
3. TOC content ranged from 1.3 percent to 2.7 percent

The physical characteristics further east of the navigation channel in the LDW and upstream and downstream from the Property are provided in Appendix B.

### *3.5.2.2 Chemical Characteristics*

A brief summary of the identified chemical characteristics for each analyte group is provided below.

**Metals**

Arsenic, copper, and TBT were the heavy metals that were present most often at concentrations exceeding the SMS and DMMP reference values.

Surface sediment concentrations of arsenic, copper, and TBT are summarized in Figures 9, 10, and 11, respectively. Exceedances of reference values for these compounds were noted in the marine railway area, in the vicinity of the two former floating drydocks, and adjacent to the graving dock.

1. Arsenic: Exceedances of the arsenic SMS CSL criteria were identified at stations SS-2, SS-4, LDW-SS48, LDW-SS49, and LDW-SC28 adjacent to the Property and LDW-SS56 adjacent to the pier structure of the Glacier property (Figure 9).
2. Copper: CSL criteria exceedances for copper were identified at SS-2, SS-3, LDW-SS46 and LDW-SS47 adjacent to the former graving dock on the AML property and at LDW-SS48 and LDW-SS49 adjacent to the Property (Figure 10)
3. TBT: Exceedances of the former Puget Sound Dredge Disposal Analysis (PSDDA) screening level for TBT were identified at stations SS-1, SS-2, SS-3, SS-4, LDW-SS45, LSDSS46, LSW-SS47, and LDW-SC25 adjacent to the former graving dock on the AML property; stations LDW-SS49, LDW-SC26, LDW-SC28, DR121, and B4b

adjacent to the Property; and station LDW-SS56 adjacent to the pier structure of the Glacier property (Figure 11).

4. Other heavy metals: CSL criteria exceedances for lead and zinc were also identified at station SS-2. CSL criteria exceedances for lead, mercury, and zinc were identified at station LDW-SS48. A CSL criteria exceedance for zinc was identified at station LDW-SS49. These stations are in the immediate vicinity of the marine railway. No other metals exceedances were identified within the general vicinity of the Property.

### Polycyclic Aromatic Hydrocarbons (PAHs)

SQS and/or CSL criteria exceedances for PAH were identified at most of the sampling stations sampled throughout the LDW, including in the vicinity of the Property (Appendix B). Preliminary evaluation of the data did not reveal any spatial or temporal trends in the identified PAH concentrations. In most samples, a higher percentage of the samples contained exceedances of high molecular weight PAHs (HPAHs) relative to the low molecular weight PAHs (LPAHs).

### Polychlorinated Biphenyls (PCBs)

Most stations sampled throughout the LDW, including in the general vicinity of the Property, exhibited exceedances of the PCB SMS criteria (Appendix B). The majority of the stations exhibited CSL criteria exceedances. The PCB results did not appear to correlate with proximity to the Property.

### Chlorinated Benzenes

Hexachlorobenze was detected at concentrations exceeding the SMS criteria in areas of Glacier Bay located to the south and upgradient of the Property. Hexachlorobenzene was not detected in shipyard soil, groundwater, or catch basin sediments, nor was it detected above screenings levels in sediments with elevated concentrations of arsenic, copper, and TBT.

The compound 1,4-dichlorobenzene was detected above the SQS criteria at two stations (i.e., LDW-SC26 and LDW-SC28) adjacent to the Property (Figure 8).

**Phthalate Esters**

Butyl benzyl phthalate and bis(2-ethylexyl)phthalate concentrations were identified above the SQS and/or CSL criteria throughout the LDW, including in the vicinity of the Property (Appendix B). The phthalate results did not appear to correlate with proximity to the Property.

**Dioxins/Furans**

Dioxin/furan concentrations were substantially elevated in the Glacier Bay sediments located south and upgradient of the Property. The highest dioxin/furan concentrations were measured at stations LDW-SC29, LDW-SS58, and LDW-SS59. Much lower dioxin/furan concentrations were measured at LDW-SC26 and LDW-SC28, located adjacent to the Property. The distribution of dioxin/furan compounds in surface sediments suggests that these compounds are not associated with proximity to the Property.

### *3.5.2.3 Sediment Bioassay Testing*

LDWG performed a Phase 2 (baseline) Ecological Risk Assessment (ERA) within the LDW to determine the risk estimates for benthic invertebrate, fish, and wildlife species that may be exposed to chemicals of potential concern (COPCs) found in sediment, water, and aquatic biota. The data set used in the baseline ERA consists of historical data and sediment and tissue chemistry data collected from the LDW during Phase 2 to supplement the historical data that were used in the Phase 1 ERA (Windward 2003).

To generate more specific information about the nature and extent of effects on benthic invertebrates exposed to sediments with at least one chemical concentration exceeding the SMS SQS sediment criteria, three toxicity tests were conducted with surface sediments (0 to 10 cm) collected at 48 locations (see Map A.3-5 of Windward 2007c). The toxicity tests included the following:

1. Acute 10-day amphipod (*Eohaustorius estuarius*) mortality test
2. Acute 48-hr bivalve larvae (*Mytilus galloprovincialis*) normal survival test
3. Chronic 20-day juvenile polychaete (*Neanthes arenaceodentata*) survival and growth test

The results from the three sediment toxicity tests were evaluated using the SMS interpretive criteria for marine toxicity tests (Ecology 2003). Co-located surface sediment samples were collected for chemical and biological toxicity testing in the vicinity of the Property at the following locations depicted on Figure 8:

1. Northern Area Bioassay (LDW-SS40): This station was located in the LDW federal navigation channel north of the AML property. A toxicity CSL exceedance was noted at this location.
2. Shipyard Area Bioassay (LDW-SS49): One sampling station was located within the Port-owned berth area offshore of the marine railway. This station contained elevated concentrations of arsenic and copper. A CSL toxicity exceedance was noted at this location.
3. Eastern Area Bioassay (LDW-SS50): This station was located across the LDW, within the eastern Port-owned berth area. A toxicity CSL exceedance was noted at this location.
4. Glacier Bay Bioassays (LDW-SS56, LDW-SS57, and LDW-SS58): These three stations were located within Glacier Bay. Station LDW-SS56 contained elevated dioxin, arsenic, and PCBs concentrations, and exhibited a toxicity SQS exceedance. Stations LDW-SS57 and LDW-SS58 contained elevated PCB and dioxin concentrations, and both exhibited toxicity CSL exceedances.

### *3.5.3 Subsurface Sediment Data*

Several subsurface sediment cores were sampled in areas near the Property during 2006 as part of the LDW RI/FS process. The LDW core locations are shown on Figure 8. The cores are discussed below in the following four groups:

1. **Northern Core (LDW-SC24):** This core is located within the Port-owned berth area north of the AML property.
2. **Shipyard-Area Cores (LDW-SC25, LDW-SC26, and LDW-SC28):** These cores were located in front of the graving dock, near the marine railway, and near the southern floating drydock, respectively.
3. **Southern Core (LDW-SC29):** This core was collected within the Glacier Bay area south of the Property, near the Glacier dock.

4. **Eastern Cores (LDW-SC23, LDW-SC27, and LDW-SC30):** These three cores were located in the Port-owned berth areas along the east side of the navigation channel of the LDW.

The physical and chemical results collected from each of these areas are summarized below.

### *3.5.3.1 Physical Characteristics*

The subsurface sediments sampled west of the navigation channel adjacent to the Property exhibited the following physical characteristics:

1. Total solids ranged from 47 percent to 77 percent
2. Percent fines (silt and clay fraction) ranged from 74 percent to 90 percent
3. TOC content ranged from 0.9 percent to 3.1 percent

The physical characteristics for the remaining cores located in the vicinity of the Property are provided in Appendix B.

### *3.5.3.2 Chemical Characteristics*

A brief summary of the identified chemical characteristics for each analyte group is provided below.

**Metals**

Elevated concentrations of heavy metals and TBT were detected in all three of the Shipyard Area Cores. As shown in Figure 12, concentrations generally increased with depth below the sediment mudline, suggesting that these impacts are historical, rather than of recent origin. Elevated concentrations of arsenic, copper and TBT were correlated with one another. Elevated concentrations were also noted for lead, mercury, and zinc in selected samples.

Heavy metals concentrations did not exceed reference values in either the Northern Core (LDW-SC24) or the Southern Core (LDW-SC29). With the exception of one shallow SQS exceedance of mercury in core LDW-SC27 (measured concentration 0.52 mg/kg at the 0 to 2 foot sampling interval, slightly exceeding the SQS of 0.41 mg/kg), no exceedances of

reference values were noted for heavy metals in any of the Eastern Cores (LDW-SC23, LDW-SC27, and LDS-SC30).

### Polycyclic Aromatic Hydrocarbons (PAHs)

Elevated PAH concentrations were noted in most cores at most sampling depths. In contrast to heavy metals, elevated PAH concentrations were noted in the Northern Core, the Southern Core, and in the Eastern Cores. Concentrations of HPAH compounds were generally greater than those of LPAH compounds.

### Phthalate Esters

Elevated concentrations of butyl benzyl phthalate and bis(2-ethylexyl)phthalate were noted in most cores at most sampling depths. Concentrations of these phthalates correlated generally with PAH concentrations, and did not necessarily correlate with concentrations of arsenic, copper, or TBT.

### Polychlorinated Biphenyls (PCBs)

Elevated PCB concentrations were noted in most LDW cores at most sampling depths. PCB concentrations in subsurface sediments were generally greater than those in surface sediments.

The PCB concentrations measured in subsurface sediments of the Shipyard Area Cores were comparable with PCB concentrations measured in the Northern Core, the Southern Core, and in the Eastern Area Cores. PCB contamination is known to be widespread within the LDW and does not appear to correlate to proximity to the Property. As noted in Section 3.2, there were no exceedances of upland PCB cleanup levels in soils or groundwater at the Property, nor were PCBs detected in catch basin solids sampled at the Property.

### Chlorinated Benzenes and Pentachlorophenol

The Shipyard Area Cores contained elevated concentrations of 1,2-dichlorobenzene in subsurface sediments. Peak concentrations were noted at the following sampling depths:

- LDW-SC25: 2 to 4 foot interval
- LDW-SC26: 6 to 8 foot interval
- LDW-SC28: 5.5 to 7.5 foot interval

Other chlorinated benzene or phenolic compounds were also present in these samples, including 1,4-dichlorobenzene, pentachlorophenol, and 1,2,4-dichlorobenzene.

### Dioxins/Furans

Testing for dioxins/furans has been performed more selectively than for other parameters. The highest measured dioxin/furan concentrations were detected in the Southern Core located within Glacier Bay and in the 6-8 foot interval of LDW-SC26. The elevated dioxin/furan concentration in this latter core correlated with elevated concentrations of chlorinated benzenes and pentachlorophenol. Dioxin/furan concentrations were also elevated in core LDW-SC28, although the interval with the highest pentachlorophenol concentration (5.5 to 7.5 feet) was not tested for dioxins/furans. All of these concentrations were lower than the dioxin/furan concentration measurements reported farther south in Glacier Bay.

# 4 PRELIMINARY CONCEPTUAL SITE MODEL

This section summarizes a preliminary CSM for the Property. The preliminary CSM is based on the existing information summarized in Sections 2 and 3 of this Work Plan.

As described in Section 1.2, the development of a CSM is an important step in assessing the status of source control, as well as for assessing the potential need for future remedial actions. The CSM integrates investigation data at a site to develop a framework for assessing contaminants and their impact on environmental receptors. The preliminary CSM described in this section is used to identify existing data gaps in Section 5, and to develop the scope of Phase 1 RI activities described in Section 6.

## 4.1 Contaminants and Potential Sources

The first part of the CSM is the definition of contaminants and potential sources. Section 2.3 provides a discussion of the historic shipyard operations and material handling to provide the context for evaluating potential contamination sources. Table 1 presents the historic shipyard operations by area and the potential historical sources of contamination to environmental media. This step is important in order to assess whether known or potential sources of contamination have been controlled. This step includes both contaminants originating on-site, as well as contaminants that may have originated from off-site sources.

### *4.1.1 Upland Contaminants*

Contaminants identified in the four upland areas (those not located adjacent to the Duwamish Waterway) described in Section 3.2 consists of petroleum hydrocarbons (two areas), arsenic (one area), and vinyl chloride (one area). Soil impacts are present in three of the four areas and include both surface and subsurface soil. Historic operational and material handling areas had the potential for contaminant releases to soil. Subsurface soil impacts are from potential fill material and/or former underground storage tanks. Groundwater impacts are present in all four of these upland areas, but there is no evidence that they are migrating to the shoreline.

The petroleum impacts appear to be associated with historical on-site sources. Impacts to the Rail Spur area are likely associated with both on-site and off-site sources. The source of the

low-level vinyl chloride contamination in the groundwater of the Central Area has not been determined.

Impacts to the Shipyard Nearshore Area appear to be associated with historic shipyard activities. The contamination in this area is present beneath pavement, suggesting that it is historical in nature. The specific source of low-level diesel contamination in groundwater in the southern portion of this area (boring DSI-11) has not been determined.

Impacts to the Parcel D Nearshore Area includes elevated PAH concentrations in soil and groundwater, and low-level diesel concentrations in groundwater. The source of these impacts has not been determined.

### *4.1.2 Sediment Contaminants*

Contaminants that correlate with proximity to the Property include several of the heavy metals and TBT. Heavy metals include arsenic, cadmium, copper, lead, mercury, and zinc. The concentrations of these sediment contaminants generally increase with depth in subsurface sediment samples collected nearest the Property, suggesting that the contamination is historical in nature and has been buried by natural deposition of cleaner sediments. Arsenic was not detected above sediment screening levels in recent sampling of catch basin solids, although it was present at elevated concentrations in surface and subsurface sediments. The presence of elevated arsenic concentrations in deeper sediments suggests that the contamination occurred predominantly during the earlier period of operations at the Property, rather than during its more recent history.

Concentrations of dioxin/furan compounds are highest in sediments within Glacier Bay, with lower concentrations present in the deepest intervals of sediments adjacent to the Property. Chlorinated benzenes and pentachlorophenol have been detected in subsurface sediments adjacent to the Property in areas downstream from the former Reichhold Chemical operations. Recent seep testing performed during the LDW RI/FS process did not identify ongoing surface water discharges of these compounds. However, sediment contamination is known to remain within the Glacier Bay area.

Phthalates, PAH compounds, and PCB compounds have been detected broadly throughout the LDW surface and subsurface sediments. These contaminants are known to have numerous confirmed and suspected sources within the LDW.

Bioassays have been used during previous studies to assess potential toxicity of sediment contaminants to benthic organisms. Results of these tests are often difficult to correlate with specific contaminants, especially when multiple contaminants are present within the sediment. Results indicated that areas of sediment toxicity are present both adjacent to the Property, as well as in areas of the LDW upstream and downstream.

## 4.2 Nature and Extent of Contamination

As described in Sections 2 and 3 of this Work Plan, the boundaries of contamination at and adjacent to the Property have been generally defined. Upland contamination has been delineated for the general areas of the Property as described above. Sediment contamination has been generally evaluated, providing an assessment of the potential boundaries of sediment impacts potentially associated with the Property and its historical uses. However, questions remain about the full extent and significance of the detected contaminants, within these general boundaries.

### *4.2.1 Upland Contaminants*

A description of the general nature and extent of contamination is provided in Section 3.2. Soil and groundwater quality are described for six upland and nearshore areas. The impacts to each of the areas appear to be localized and bounded to the specific area. There is no evidence of contamination affecting multiple areas.

Additional work to assess the nature, extent, and potential sources of contamination in the Rail Spur Area, 2000 UST removal Area, nearshore area, and the Parcel D Nearshore Area is discussed in Sections 5 and 6 of the Work Plan.

### *4.2.2 Sediment Contaminants*

The area of sediment impacts potentially associated with the Property and its historical uses has been generally delineated, and is bounded by sediment surface and subsurface sampling

to the north, east, and south. The contamination generally increases with depth below the sediment mudline, with the base of contamination influenced by the overall depth of recent sediments and historical patterns of dredging and channel maintenance.

Significant uncertainty remains regarding the areas and potential volumes of impacted sediments within the vicinity of the Property. Additional information is required in order to refine the lateral and vertical boundaries of such impacts and to assess the stability of sediments within these areas as described in Section 4.3.

## 4.3 Fate and Transport

Multiple processes can affect the fate and transport of contaminants. Table 8 provides a summary of these potential processes. For upland and shoreline/sediment areas, processes that may transport contamination are listed, along with those that may attenuate contaminant migration, terminate exposure pathways, and/or destroy/neutralize the contamination prior to reaching the receptor.

### *4.3.1 Upland Processes*

Most of the impacts to the upland portion of the Property are limited to subsurface soils. Exposure of these soils is limited in nearly all cases by pavement or foundations overlying the contaminated soil; however, the potential exists for historic releases to soil in unpaved areas or in areas prior to paving. Potential transport pathways that could result in transport of soil or groundwater contamination include the following:

- Stormwater entrainment
- Soil leaching
- Groundwater migration
- Groundwater extraction
- Vapor migration

The notes in Table 8 provide a description of how these potential processes may affect conditions at the Property. The table also includes a description of processes that can limit the transport of upland contaminants or that can result in destruction or neutralization of these contaminants, including the following:

- Biodegradation
- Geochemical stabilization
- Tidally-influenced groundwater mixing

As discussed in Sections 5 and 6, additional information is required in order to assess the impact of the fate and transport processes on contaminants in the upland portion of the Property, and to determine whether additional remedial actions are required to ensure protection of human health or environmental receptors.

### *4.3.2 Shoreline and Sediment Processes*

Table 8 summarizes natural and anthropogenic (i.e., human caused) processes that may affect the fate or transport of contaminated sediments. The notes in Table 8 provide a description of potential applicability of these processes to the Property. Processes that may result in exposure of contaminated materials to benthic or aquatic receptors include the following:

- Wind and wave erosion
- River scour
- Seismic disturbances
- Propwash or anchor drag
- Construction disturbances

Table 8 also summarizes natural processes that may result in containment or detoxification of sediment contaminants. These processes include the following:

- Sediment deposition (i.e., burial)
- Contaminant degradation and weathering

Additional information is required in order to assess the potential stability and future fate of contaminated sediments located at and adjacent to the Property. These data gaps and the plan for collection of additional information are described in Sections 5 and 6 of this Work Plan.

## 4.4 Potential Receptors

In Section 3 of this Work Plan, existing environmental data were compared against preliminary screening levels based on default MTCA and SMS cleanup levels, and preliminary screening levels for sediment contaminants regulated under SMS as "other deleterious substances." These comparisons are preliminary, pending further evaluation of exposure pathways and potentially applicable cleanup levels. Generally, the principal receptors at the Property include the following:

- **Protection of Industrial Workers:** The main potential on-site receptor is a future industrial worker. Direct contact risks for industrial workers can be assessed using MTCA industrial soil cleanup levels. Indoor air exposure risks may require evaluation for areas where VOCs (benzene and vinyl chloride) are present (i.e., the Central Area and the 2000 UST Removal Area).
- **Protection of LDW Aquatic Receptors:** Aquatic receptors in the LDW include fish and shellfish potentially exposed to surface water contaminants. Protection of these receptors can be ensured by preventing adverse impacts of groundwater on surface water quality. Potentially applicable cleanup levels include state and federal water quality criteria protective of human health and ecological receptors. MTCA Method B surface water cleanup levels may also apply as part of the assessment of human health risks associated with the consumption of seafood.
- **Protection of Benthic Receptors:** Exposure risks for sediment-dwelling organisms and for human consumers of seafood harvested from the LDW will determine applicable cleanup levels for contaminated sediments. These cleanup levels will likely include the numeric SMS sediment criteria and bioassay interpretive criteria. Cleanup levels for TBT will likely be based on a weight-of-evidence approach incorporating multiple lines of evidence such as bulk TBT concentrations, porewater TBT concentrations, and/or bioassay testing data. Cleanup levels for PCBs and dioxin/furan compounds, and potentially for arsenic, are likely to be determined through the LDW risk assessment and RI/FS process.

Section 5 of this Work Plan describes the data gaps affecting the analysis of receptor protection and the development of cleanup levels applicable to the Property. Section 6 describes how these gaps will be filled as part of the proposed scope of work.

# 5 ASSESSMENT OF DATA GAPS

This section uses the preliminary CSM presented in Section 4 to assess the need for additional investigation at the Property. Data gaps are assessed relevant to the evaluation of sediment source control status, and to the evaluation of whether further remedial actions may be necessary to protect human health and the environment. The data gaps discussed in this section form the basis for the investigation scope of work described in Section 6.

## 5.1 Nature and Extent of Contamination

Upland data gaps associated with delineation of the nature and extent of contamination are very limited. Specific upland data gaps that warrant additional investigation are limited to the following:

- **Rail Spur Area:** The source and lateral extent of arsenic contamination in soils and groundwater. This should include a review of data available for the adjacent Glacier property, as well as additional investigation at the Property.
- **2000 UST Removal Area:** The lateral and vertical extent of soil petroleum impacts in this area should be further delineated. Information for this area should be coordinated with evaluation of the adjacent Shipyard Nearshore Area.
- **South Property Area:** Previous environmental testing was not conducted in the South Property Area. DSI will perform soil and groundwater testing to address the data gap in this area.
- **Shipyard Nearshore Area:** Given the proximity of this area to the shoreline, additional information is required to assess the significance of groundwater petroleum contamination in the southern area of the property and soil metals contamination in the northern area of the property noted during 2006.
- **Parcel D Nearshore Area:** The source and extent of PAH contamination of soil and groundwater, and the significance of petroleum contamination detected in groundwater in this area, have not been determined. These factors should be assessed, given the proximity of this area to the shoreline.
- **Shoreline Bank Area:** Due to the presence of soil and groundwater impacts and historical shipyard operations in the nearshore and sediment areas of the Site, there is a potential for contamination in the shoreline bank area. DSI will perform bank soil testing in this area.

Patterns of sediment contamination have been generally defined, but data gaps exist that warrant collection of additional sediment quality information:

- **Surface and Subsurface Sediment Quality:** Additional surface and subsurface sediment sampling data are required to reduce the uncertainty of the extent of sediment contaminants to the north, east, and south of the Property. Specific testing parameters will be identified in the SAP. The collection of this information should be coordinated with gathering information applicable to sediment fate and transport processes and the evaluation of sediment cleanup levels.

## 5.2 Fate and Transport Processes

Data gaps affecting the analysis of fate and transport properties for upland soils and groundwater include the following:

- **Future Land Uses:** Future land uses will affect the potential for contaminant transport by stormwater or release of contaminants through construction activities at the Property. Information should be compiled regarding future land use plans as part of the current RI.
- **Groundwater Gradients and Aquifer Properties:** Additional information is required to verify presumed groundwater gradients, and to assess aquifer properties relevant to groundwater fate and transport. Gradient information must take into account potential influences of tidal fluctuations.
- **Groundwater Geochemical Properties:** Groundwater geochemical parameters may affect processes of contaminant biodegradation or geochemical transformations. These processes may be relevant to the fate and transport or destruction/immobilization of arsenic, petroleum, and/or vinyl chloride in groundwater.

Data gaps affecting the analysis of fate and transport properties for shoreline soils and aquatic sediments include the following:

- **Wind, Wave and River Scour Erosion Processes:** An assessment of the stability of sediments is required to assess whether shoreline soils or subsurface sediments may be subject to erosion. Some evaluations are being conducted as part of the LDW RI/FS

process. Other information will require site-specific evaluation.

- **Shoreline Stability:** The geotechnical stability of the current shoreline (above and below the water line) will affect the potential for any contaminated soils and subsurface sediments in this area to be exposed to environmental receptors. Shoreline stability should be evaluated, including an assessment of the extent and stability of current shoreline armoring, and the stability of the bulkhead currently located in the northeastern portion of the Property
- **Anthropogenic disturbances:** The stability of subsurface contaminated soils and sediments may also be affected by navigation uses (e.g., propwash) or potential future construction activities. Insufficient information currently exists regarding the nature and extent of these potential future disturbances. Evaluation of these processes should be coordinated with the assessment of potential future land uses, and should address potential issues associated with Port ownership of the berth areas.

## 5.3 Cleanup Levels and Exposure Assessment

Data gaps relevant to the analysis of cleanup levels and exposure risks in upland areas of the Property include the following:

- **Petroleum Fractionation:** Information on petroleum fractionation may be important for the impacted soils in the Northwest Area and in the 2000 UST Removal Area in order to determine site-specific cleanup levels for these media.
- **VOC Vapor Intrusion Risks:** Two areas of the Property are affected by VOCs, including benzene (2000 UST Removal Area) and vinyl chloride (Central Area). A preliminary assessment of potential vapor intrusion risks should be conducted to assess such risks, if any, and to determine applicable cleanup levels for these compounds.

Data gaps relevant to the development of cleanup levels in sediment areas of the Property include the following:

- **Review of LDW Risk Assessment Information:** Sediment cleanup levels for contaminants present at or in the vicinity of the Property will be affected by the outputs of the ongoing LDW RI/FS and Risk Assessment. Analysis of the nature and extent of contamination in sediments at or adjacent to the Property should be coordinated with the LDW evaluation. This is particularly true for arsenic, PCBs, and

dioxin/furans. This will also include development of protective cleanup levels for TBT.

# 6 REMEDIAL INVESTIGATION TASKS

This section describes the RI tasks, including the Phase 1 RI upland and sediment activities presented as part of the current Work Plan. Table 9 presents a summary of the RI data objectives and RI design components to fill data needs. These investigations will be implemented after finalization of the AO, and after subsequent development and approval of project plans including a SAP, QAPP, and HASP. Development of these three plans will be conducted as initial deliverables under the AO. Final upland and sediment sampling locations and testing parameters will be determined during development of the final SAP and QAPP.

## 6.1 Phase 1 Remedial Investigation Upland Activities

Upland investigations will be performed at the Property to fill the data gaps discussed in Section 5.

### *6.1.1 Review of Glacier Property Data*

Upland soil and groundwater quality data for the Glacier property will be obtained and reviewed. Relevant data will be integrated with information collected from the Property as part of DSI's project reports. For this purpose, relevant information includes groundwater gradient information, and the nature and extent of heavy metals, PAHs, TBT, or petroleum concentrations in soils and groundwater.

### *6.1.2 Assessment of Potential Future Land Uses*

Future land uses will affect the evaluation of upland and shoreline/sediment conditions. Information on future land use will be developed. This evaluation of future land uses will address both the Property owned by DSI, as well as the Port-owned berth areas adjacent to the Property.

### *6.1.3 Former Stormwater Vault, Piping, and UST Survey*

During the stormwater system cleanout activities performed in July and August of 2007, a former stormwater vault and potential UST were identified. A survey will be completed to determine the presence and size of the former stormwater vault and areas where a potential

UST may have been located during historic operations on the Property. In addition, the former stormwater vault piping and the current status of piping identified on City of Seattle public utility maps will be investigated.

### *6.1.4 Geoprobe Investigation*

A focused investigation will be conducted using temporary soil borings installed by a geoprobe. This study will provide data on the following:

- **Delineation of Rail Spur Area Arsenic Impacts:** The lateral extent of arsenic-impacted soil and groundwater in the Rail Spur Area will be defined. At least three soil borings will be installed in this area, with sampling of soils for total arsenic and groundwater sampling for dissolved arsenic.
- **TPH Fractionation in Northwestern Area Soil:** One soil boring will be placed in the vicinity of boring DSI-03 to collect a sample of gasoline-impacted soil for petroleum fractionation testing. This sample will be submitted for TPH fractionation testing for development of site-specific petroleum cleanup levels applicable to this area. Up to three additional borings will be placed to delineate petroleum-related impacts to soil and groundwater in this area.
- **Delineation of 2000 UST Removal Area Petroleum Impacts:** Four soil borings will be placed in areas adjacent to the 2000 UST Removal Area to delineate areas of soil and groundwater impacted by petroleum hydrocarbons and benzene. Soil samples will be tested for petroleum hydrocarbons and BTEX compounds. Two representative soil samples will be used for TPH fractionation testing for development of site-specific petroleum cleanup levels for these compounds.
- **South Property Area:** Three soil borings will be completed in the South Property Area adjacent to the Glacier property. Soil testing will include metals, SVOCs, and petroleum hydrocarbons. All three borings will include groundwater testing for dissolved arsenic, SVOCs, petroleum hydrocarbons, and VOCs.
- **Delineation of Nearshore Impacts:** Approximately seven soil borings will be placed in areas adjacent to former borings DSI-09, DSI-11, and DSI-12 in the areas where elevated soil and groundwater chemical concentrations were detected. These borings will be used to assess the extent and potential source of this contamination. Soils will be sampled for metals, SVOCs, and petroleum hydrocarbons.

### 6.1.5 Monitoring Well Installation and Geologic/Hydrogeologic Testing

Groundwater gradients at the Property are presumed to be toward the shoreline, with tidal influences on groundwater elevations occurring within 100 to 200 feet of the shoreline. Testing will be performed to confirm groundwater gradients and hydrogeologic properties. Wells installed as part of this work will also be used for focused groundwater quality testing and for assessment of groundwater geochemical properties as described below. One to two geotechnical borings will be completed in nearshore areas at depth to characterize geologic conditions and test for physical parameters.

- **Well and Piezometer Installation:** Ten groundwater monitoring wells, including three deeper monitoring well screens, and one piezometer will be installed. Monitoring well locations and testing parameters will be detailed in the SAP. One well will be located in the Rail Spur Area. One well will be located in the 2000 UST Removal Area. Three wells will be located in the Shipyard Nearshore Area, between DSI-09 and DSI-11, and another will be located in the Parcel D Nearshore Area near DSI-12 (Figure 8). One of these wells in the area of DSI-10 will include an additional deeper well to determine chemical concentrations and gradient characteristics deeper in the aquifer. A piezometer will be installed located in the Central Area near boring DSI-08. The wells and piezometer will be installed and developed to permit monitoring of groundwater gradients and aquifer properties. Soil samples will be selectively collected at the time of well and piezometer installation.
- **Measurement of Gradients and Tidal Influences:** The six new wells, one existing well (MW5) (if located), and the new piezometer will be surveyed. Initial groundwater elevations will be measured using a water level indicator. Recording pressure transducers will then be installed in selected wells and groundwater elevations will be measured over a 96-hour period. A transducer will also be installed in a stilling gauge placed in the Duwamish River. The measurements from the pressure transducers will be processed to determine tidal efficiencies and lags in each well, and to assess the mean groundwater gradients over a 72-hour tidal cycle. Results will be processed to estimate aquifer conductivity, discharge rates, and groundwater/surface water mixing factors near the shoreline.
- **Geotechnical Testing:** Approximately three geotechnical borings will be performed in nearshore areas to evaluate subsurface geologic conditions. Soil sampling for physical testing will be completed at approximately 2.5-foot intervals in the top 10

feet and continue at approximately 5-foot intervals to a depth of 60 feet. Physical testing will selectively include grain size, atterberg limits, specific gravity, and moisture content.

- **Groundwater Geochemistry Testing:** Groundwater geochemical parameters will be tested in each of the monitoring wells and in the piezometer. These parameters will include dissolved oxygen, redox potential, conductivity, and pH. Samples from four wells (two upland and two nearshore) will also be analyzed for nitrates, sulfate, hydrogen sulfide, total dissolved solids, and alkalinity. Well headspace measurements will be made for oxygen, carbon dioxide, carbon monoxide, and methane.
- **Groundwater Sampling:** Several of the groundwater wells will be used for groundwater sampling. Groundwater sampling will be performed following low-flow methodology. Groundwater testing parameters will be detailed in the SAP.

### *6.1.6 Evaluation of Applicable Cleanup Levels*

Results of the testing and analysis described above will be used to develop soil and groundwater cleanup levels protective of receptors at the Property. These cleanup levels will take into account the elements of the Preliminary CSM described in Section 4, and will address future land uses anticipated for the Property.

## 6.2 Phase 1 Remedial Investigation Sediment Activities

Sediment data gaps will be filled through a series of field investigation tasks, and through review of work conducted as part of the LDW RI/FS process.

### *6.2.1 Review of Channel and Berth Area Dredging Histories*

Information from the ACOE and other available sources will be compiled to document the history of dredging and shoreline modifications in the immediate vicinity of the Property. The information will be used, along with the subsurface sediment data, to assist in interpretation of sediment contamination patterns and sediment stability.

### *6.2.2 Evaluation of Sediment Stability*

The physical stability of sediments adjacent to the Property will be evaluated to support potential remedial alternative screening and FS evaluations. This evaluation will use a

combination of LDW RI/FS information, and new information compiled as part of the current study:

- **Armored Slope Evaluation:** The extent and properties of shoreline armoring will be assessed using chemical and physical testing, direct inspection, available records, and potentially a diver survey (if required). This information will be combined with the bathymetric and soil information from upland geologic observations to assess potential stability of the armored portions of the shoreline under static and seismically active conditions. This analysis will be used as a screening-level assessment for shoreline stability. A full geotechnical or seismic analysis will not be performed.
- **Bulkhead Assessment:** A preliminary evaluation of the bulkhead on the Property will be performed. Areas of impacted soil are known to exist behind the bulkhead. The current integrity of the bulkhead will be assessed by a structural engineer and areas of potential instability will be defined.
- **Wave Erosion Assessment:** Data on wind waves and vessel wakes will be compiled from available sources, including work being performed for the LDW RI/FS. These data will be used in conjunction with sediment physical and bathymetric data to assess potential sediment stability in intertidal and shallow subtidal areas.
- **River Scour Assessment:** Outputs from the LDW fate and transport modeling will be used to assess potential river scour and/or deposition in areas near the Property. Completion of a separate river scour assessment is not anticipated. Results will be compared against observations from subsurface sediment cores placed at or adjacent to the Property.
- **Propwash Evaluation**: A limited evaluation of propwash and related navigation impacts will be performed based on the anticipated land uses at the Property and associated or nearby berth areas. The evaluation will include simulation of potential prop-induced scour and associated sediment resuspension.

### *6.2.3 Surface and Subsurface Sediment Testing*

Surface and subsurface sediment testing will be performed at approximately 15 locations in the vicinity of the Property. The purpose of testing will be to delineate the lateral and vertical boundaries of sediment impacts. Testing will be performed at locations between those previously shown to contain heavy metals and TBT impacts, and those locations

bounding samples previously collected to the north, east, and south. Testing may include areas of the federal navigation channel and berth areas on either side of the channel. As part of the sediment sampling mobilization, bank soil sampling will also be performed to address the potential for contaminated bank soil releases to the Lower Duwamish Waterway. Final sampling locations and testing details will be defined in the SAP after review of historic dredging information for the LDW and associated berth areas.

A surface (0 to 10 cm) grab sample will be collected at each sampling location, using a Van Veen grab sampler. Subsurface sediment samples will then be collected using a vibracore sampler. The surface sample and up to three subsurface sediment samples will be selectively analyzed for SMS testing parameters. The bank soil sampling methodology will be finalized after inspection of the bank to support sampling equipment. Potential methodology to perform bank soil sampling includes manual devices, geoprobe, or a limited access auger. Sediment testing parameters will be detailed in the SAP.

The surface samples will also be analyzed for porewater TBT. These analyses will not be performed on subsurface samples. Surface and subsurface samples will be archived frozen for potential future analysis.

### *6.2.4 Review of LDW RI/FS Data*

As part of data analysis and reporting, applicable information from the LDW RI/FS and risk assessment will be compiled and reviewed. Potentially relevant information shall include the following:

- Risk-analysis outputs and sediment cleanup levels proposed for the LDW
- Results of surface and subsurface sediment testing near the Property
- Results of sediment transport evaluations
- Plans or potential plans for remediation within the LDW that may impact the Property
- Relevant land use or navigation information
- Information on the status of LDW source control efforts

## 6.3 Phase 1 Remedial Investigation Data Analysis and Reporting

All of the data developed under the current study shall be compiled in a Phase 1RI Data Memorandum. The Phase 1 RI Data Memorandum shall summarize data with appropriate figures and cross sections. All analytical data collected during the study shall be validated and submitted to Ecology in electronic format.

A Phase 2 Technical Memorandum will then be prepared that includes an updated version of the CSM and identifies potential data gaps and additional field data collection efforts, if warranted. Conclusions of the Phase 1 RI activities shall assess the status of sediment source control at the Property. Applicable cleanup levels shall be presented for different media. If areas are defined where additional actions are required to comply with applicable cleanup levels or to protect human health and the environment, these areas of concern shall be identified in the conclusion section of the Phase 2 Technical Memorandum and in a summary figure.

## 6.4 Phase 2 Remedial Investigation Activities (If Warranted)

Phase 2 RI activities will be performed at the Property, if determined to be warranted after Phase 1 RI data analysis and the data gaps assessment presented in the Phase 2 Technical Memorandum. If Phase 2 RI activities are determined to be warranted, the project plans (SAP, QAPP, and HASP) will be updated as applicable, and field data collection activities will be initiated.

# 7 FEASIBILITY STUDY TASKS

The FS will identify and evaluate remedial alternatives that protect human health and the environment by eliminating, reducing, or otherwise controlling risks posed by environmental conditions at the Property. Remedial alternatives will be developed consistent with ongoing LDW cleanup and source control activities and property use planning and development. The FS is intended to provide sufficient data, analysis, and engineering evaluations to enable the selection of a cleanup action alternative, which is protective of human health and the environment and considers local development plans. A phased approach will be taken, whereby remedial alternatives are developed and screened, followed by a detailed analysis of remedial alternatives in accordance with the MTCA cleanup regulations, WAC 173-340-360 (Ecology 2007).

## 7.1 Alternative Screening Memorandum

The first step in developing potentially practicable remedial alternatives for the Property will be the screening of alternatives, following the conceptual development of alternatives, and preceding the detailed analysis of alternatives. Prior to screening, technologies will be identified for each cleanup component and combined into potential alternatives. During the screening, the extent of remedial action (e.g., quantities of media to be affected), the sizes and capacities of treatment areas, and other details of each alternative will be further defined, as needed, so that screening evaluations can be conducted.

The objective of remedial alternatives screening is to narrow the list of potential alternatives that will be evaluated in detail. In some circumstances, the number of viable alternatives to address cleanup components may be limited, such that screening may be unnecessary or minimized. Screening is used as a tool throughout the alternative selection process to narrow the options being considered. When alternatives are being developed, individual remedial technologies should be screened primarily on their ability to meet the remedial action objective (RAO) for the Property. Preliminary RAOs will be developed as part of the screening process. Because the purpose of the screening evaluation is to reduce the number of alternatives that will undergo a more thorough and extensive analysis, alternatives should be evaluated more generally in this phase than during the detailed analysis. The result of the screening process will be to develop and present the shortlisted remedial alternatives that will be carried forward as part of the detailed evaluation of alternatives in the FS Report.

Additional testing may be necessary during the screening of cleanup technologies during the FS process to evaluate the implementability of remedial technologies.

The alternatives screening process will be documented in the Alternatives Screening Memorandum. Conceptual estimates of areas and volumes of contaminated media will be used to guide screening of potential remedial alternatives. The screening will broadly consider effectiveness, implementability, and cost, with modifying factors including agency and community acceptance. Each alternative carried forward will meet the threshold requirement of protection of human health and the environment, unless these levels are below background. The development and screening of alternatives will provide enough detail to differentiate between the alternatives, and the level of detail will be sufficient to ensure the cost estimates for each will be comparable. The most promising alternatives will be carried forward to the more detailed evaluation in the FS Report, while those that cannot be implemented will be discarded from further evaluation.

## 7.2 Feasibility Study Report

The FS Report will contain the primary elements described in the following sections.

### *7.2.1 Introduction and Objectives*

The first section of the FS Report will include an introduction and describe the objectives of the document. Reference will be made to previous work done at the Property. Additional work done to support the FS Report will also be described in this section.

### *7.2.2 Remedial Action Objectives*

The purpose of this section will be to identify site-specific RAOs that will impact remedial alternatives evaluation. The section will begin with a discussion of land use planning and ongoing cleanup and source control considerations for the LDW, which will influence screening of potential remedial alternatives. The RAO section will then describe the applicable and relevant or appropriate requirements (ARARs) that will be used in determining appropriate RAOs and the selected remedial alternative. RAOs will be consistent with the LDW, where appropriate. The preliminary RAOs for the Property are:

- Control or eliminate sources (e.g., groundwater) of COPCs to the surface water and

sediment of the LDW

- Reduce or eliminate human and ecological exposure to any contaminated media that may lead to potential current or future unacceptable risk
- Implement remedial actions in coordination with land use planning, property development, and LDW cleanup and source control activities.

### *7.2.3 Determination of Cleanup Standards and Applicable Laws*

This section will present and identify cleanup standards and applicable laws to be carried forward to the remedial alternatives development. Cleanup standards selected under MTCA will generally apply to the upland portion and will consist of two components: cleanup levels and points of compliance. MTCA (WAC 173-340-350) states that the purpose of the FS is to develop and evaluate cleanup alternatives to enable a cleanup action to be selected.

The SMS specifies a process for developing cleanup standards for sediment. The SMS (WAC 173-204-570) provide for cleanup standards that may range from SQS to minimum cleanup level (MCUL) concentrations. The potential for natural recovery over a 10-year time frame may also be considered, if appropriate. Site units may be defined for different areas of the Property, if physical, chemical or biological differences (e.g. navigation lanes, intertidal areas) in these areas create requirements for using different remediation levels or technologies. Development of sediment cleanup standards will also take into consideration ongoing cleanup activities related to the LDW.

### *7.2.4 Summary of Alternatives Screening of Cleanup Technologies*

This section of the FS Report will identify and provide an executive summary of the Alternatives Screening Memorandum and present the shortlisted alternatives carried forward. Further analysis of the alternatives carried forward from this memorandum will occur as part of the detailed evaluation of alternatives in the FS Report.

### *7.2.5 Detailed Evaluation of Remedial Alternatives*

This section in the FS Report will evaluate shortlisted alternatives. The detailed evaluation will further define the alternatives, as necessary, analyze the alternatives against MTCA and other evaluation criteria, and compare the alternatives against one another. The remedial

alternatives will be evaluated for compliance with the requirements of WAC 173-340-360, "Selection of Cleanup Actions." The following 13 evaluation criteria will be considered in the detailed evaluation of remedial alternatives:

- Compliance with Cleanup Standards and Applicable Laws
- Protection of Human Health
- Protection of the Environment
- Provision for a Reasonable Restoration Time Frame
- Use of Permanent Solutions to the Maximum Extent Practicable
- Degree to which Recycling, Reuse, and Waste Minimization are Employed
- Short-Term Effectiveness
- Long-Term Effectiveness
- Net Environmental Benefits
- Implementability
- Provision for Compliance Monitoring
- Cost-Effectiveness
- Prospective Community Acceptance

### *7.2.6 Cost Estimates*

Detailed costs will be prepared for each alternative with consideration of daily labor and equipment costs, material costs, production rates, transportation costs, and disposal fees. The detailed cost estimates will be prepared as a unit price style cost estimate, and will break down major construction elements into individual unit prices (e.g., mobilization/demobilization, dredging, capping, and disposal) to facilitate comparison between alternatives. Detailed cost tables will be included as an appendix to the FS Report, and summary tables will be included in the body of the text.

### *7.2.7 Comparative Analysis of Alternatives*

The comparative analysis will be prepared to assist in identifying the preferred alternative. The comparative analysis will describe the strengths and weaknesses of each alternative and associated uncertainties including development of a disproportionate cost analysis. The alternative evaluation criteria will be considered individually, and each alternative will be presented in order from the highest to the lowest ranking alternative for each criterion. The

alternatives will be listed in a summary matrix and the costs developed for the alternatives will be included with the matrix. The intent of the matrix is to provide a quick summary of the comparative analysis for the reader.

### *7.2.8 Recommended Remedial Alternative*

The remedial alternative that is determined to best satisfy the evaluation criteria in Section 7.2.5 will be identified. Justification for the selection will be provided, and the recommended remedial alternative will be further developed in the ensuing Draft Cleanup Action Plan.

# 8 PROJECT ORGANIZATION AND SCHEDULE

This section describes the overall project organizational structure to carry out the RI/FS activities consistent with the AO schedule and deliverables. DSI has the primary responsibility for managing the work completed at the Property. Anchor Environmental L.L.C. (Anchor) is the primary consultant for DSI and is responsible for the activities associated with implementing the RI/FS work. Project work includes the activities of various subcontractors.

Anchor is responsible for performing the RI/FS work under the direction of DSI. These responsibilities include preparing necessary project plans and reports for submittal to Ecology and other involved parties, as well as attending project meetings, performing field work, evaluating data generated during the RI, and overseeing subcontractors as necessary to complete the RI/FS in accordance with the AO SOW.

## 8.1 Project Schedule

The project schedule for all RI/FS tasks in this Work Plan is presented in the AO. If, at any time during the RI/FS process, unanticipated or changed circumstances are discovered that may result in a schedule delay, DSI shall bring such information to the attention of Ecology. Ecology will then determine whether a schedule extension is warranted under the AO.

## 8.2 Project Deliverables

The following is a summary of the major deliverables for this project, with interim technical memoranda prepared as appropriate during development of the work. In addition to these documents, supporting reports may need to be prepared for technical investigations that will be necessary to complete the FS (e.g., interim action, geotechnical evaluations, structural surveys).

- **Project Plans to Complete Remedial Investigation Tasks (SAP, QAPP, and HASP):** A SAP, QAPP, and HASP will be prepared consistent with the Phase 1 RI tasks outlined in Section 6 of this Work Plan.
- **Phase 1 Data Memorandum:** The purpose of the Phase 1 Data Memorandum will be to present the methodology and results of the Phase 1 RI tasks as described in this Work Plan (Section 6). The memorandum will include supporting data summary

tables and figures to report key findings of the study tasks.

- **Phase 2 Technical Memorandum:** In conjunction with the Phase 1 Data Memorandum, the Phase 2 Technical Memorandum will be prepared to evaluate the results of the Phase 1 RI tasks and identify the need for additional data collection to complete RI tasks. This memorandum will include the preparation of the streamlined risk assessment and identify the need for Phase 2 RI activities and detail additional work activities, if determined to be warranted. If necessary, the project plans prepared for the Phase 1 RI tasks will be updated to complete the identified Phase 2 RI tasks.
- **Alternatives Screening Memorandum:** An Alternatives Screening Memorandum will be prepared following RI data collection to evaluate potential cleanup technologies to be carried forward to the FS.
- **Remedial Investigation and Feasibility Study Report:** At the conclusion of the RI/FS tasks, a RI/FS report will be prepared that summarizes the work performed under this Work Plan and related plans.
- **Draft Cleanup Action Report:** At the conclusion of the RI/FS report, a draft Cleanup Acton Plan (CAP) report will be prepared as outlined in the AO that details the preferred remedy as presented in the FS.

Ecology will receive a draft and final version of each deliverable, unless otherwise specified. Comments from Ecology will be addressed in the final documents. All drafts will be submitted electronically in portable document format (PDF) as well as in other software formats (e.g., Microsoft Word and Excel), as appropriate. Hard copy submittals for draft versions of documents will determined on a case-by-case basis in consultation with Ecology. The final version of each document will be delivered in electronic and hard copy format to Ecology.

## 8.3 RI/FS Public Comment

The RI/FS report under this Work Plan will be prepared as a draft for review and comment. The draft RI/FS report will be submitted to Ecology for review under the current AO. Anchor expects that Ecology will provide written comments on the Draft RI/FS Report and Anchor will provide written responses to those comments. In addition, project meetings will be held with Ecology to discuss the comments and responses, if requested by DSI or Ecology.

After the comments from Ecology have been addressed, a revised RI/FS document will be prepared and submitted to Ecology. At this time, the RI/FS document will be available for public comment and review consistent with the MTCA regulations. A public meeting may be held to summarize the information presented in the RI/FS document.

Upon completion of the public comment period, a responsiveness summary will be prepared by Ecology (with review and input from DSI and Anchor), and the RI/FS document will be revised as necessary to address issues identified during the public comment process.

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# TABLES

**Table 1**
**DSI Historic Shipyard Operations and Potential Source Summary**

| Historic Shipyard Operations By Area | Historic Shipyard Process Summary | Historic Shipyard Process Equipment | Historic Shipyard Material Handling | Historic Shipyard Material Management | Potential Shipyard Contamination Source | Potential Media Pathway |
|---|---|---|---|---|---|---|
| **Northwest Area** | | | | | | |
| Underground storage tank | 500-gallon leaded gasoline storage | Vehicle and equipment fueling | Leaded gasoline (petroleum) | UST closed in-place in 1986 | Yes | Soil, Groundwater |
| Machine Shop - Inside | Small part fabrication (turning of propeller shafting, pump rebuilding) | Lathes (up to 38-inches), drill presses, milling machines, band saws, presses | Cutting tool coolant, small parts degreasers/solvents | Parts and used degreaser/solvents containers, used degreaser/solvent disposal | -- | -- |
| Machine Shop - Outside | Propeller, shafting, rudder, engine, gearbox removal/reinstallation; alignment of shafting to engines/gearboxes; installation of pumps and other machinery | Hand tools, lifts | Lubricating fluids | Used container disposal, drips/spills | Yes | Surface soil |
| Spent grit storage | Storage of spent blasting grit | -- | Spent blasting grit | Storage, transport/disposal manifest, recycling | Yes | Soil, Groundwater |
| **Rail Spur Area** | | | | | | |
| Rail spur | Northern Pacific Railway easement | Rail and train parking | -- | -- | -- | -- |
| Wood (Joiner) Shop | Vessel interior fabrication | Table saws, planers, drill press, router | Wood stain and varnish | Used container disposal | -- | -- |
| Electric Shop | Electrical system and component repair and testing | Drill presses, hand tools, testing equipment | Wiring, switches, breakers, contact cleaners | Parts and used cleaner container disposal | -- | -- |
| **Central Area** | | | | | | |
| Parking | Employee and visitor parking | -- | -- | -- | -- | -- |
| Office Building | Administrative | -- | -- | -- | -- | -- |
| Stormwater Line | Stormwater collection | Storm drain lines, catch basins | Surface erosion and groundwater infiltration | Filter inserts, yard sweeping, NPDES | Yes | Sediment |
| **UST Removal Area** | | | | | | |
| Underground storage tanks | Four USTs: 1) 3,000-gallon diesel, 2) 1,000-gallon gasoline, 3) 3,000-gallon gasoline, 4) 3,000-gallon gasoline | Vehicle and equipment fueling | Diesel and unleaded gasoline (petroleum) | USTs (4) removed in June 2000 with focused excavation | Yes | Soil, Groundwater |
| **South Property Area** | | | | | | |
| Spent grit storage | Storage of spent blasting grit | -- | Spent blasting grit | Containment, storage and manifest transport/disposal, recycling | Yes | Soil, Groundwater, Sediment |
| Hazardous waste storage | Storage of hazardous waste | -- | Used oil, used antifreeze, solvents | Containment, transport/disposal manifest, recycling | Yes | Soil, Groundwater |
| Paint storage | Storage of paint | -- | Paint | Used container disposal | -- | -- |
| Paint shop (booth) | Small parts painting | Paint sprayer or rolls/brushes | Paint, solvents (for thinning) | Air filter, curtain containment system | Yes | Soil, Groundwater |
| Waste oil storage | Storage of used oil | -- | Used oil (petroleum) | Containment, transport/disposal manifest | Yes | Soil, Groundwater |
| Solvent sill | Storage of solvent (for paint thinning) | Paint mixing, touch up wiping | Solvents | Containment | Yes | Soil, Groundwater |
| **Former Shipyard Nearshore Area** | | | | | | |
| Side Tracking Ways | Small boats work: hull repair and painting | Wooden hull repair and painting | Paint, solvents, used oil | Unknown | Yes | Soil, Groundwater |
| Cranes/Winch | Vessel and equipment handling | Crane and winch | Motor and lubricating oil | Used oil containment and transport/disposal manifest | Yes | Soil, Groundwater |
| Steel Shop | Cutting of plates and materials for installation and fabrication | Welding and joining equipment (oxygen/acetylene torches) | Scrap materials | Reuse and recycling | -- | -- |

**Table 1**
**DSI Historic Shipyard Operations and Potential Source Summary**

| Historic Shipyard Operations By Area | Historic Shipyard Process Summary | Historic Shipyard Process Equipment | Historic Shipyard Material Handling | Historic Shipyard Material Management | Potential Shipyard Contamination Source | Potential Media Pathway |
|---|---|---|---|---|---|---|
| Pipe Shop | Pipe fabrication and assembly | Manufacture and assembly of piping systems: saw cutting, bending pipe, pipe welding | Scrap materials | Reuse and recycling | -- | -- |
| Wastewater Treatment System | Treatment of wastewater collected in dry docks | Collection sump and flocculation pretreatment | Process wastewater from dry dock operations | Holding tanks and treatment prior to METRO discharge | Yes | Surface Water, Sediment |
| Sand blast handling | Sand blast grit use and disposal handling | Storage and various transport handling | Blasting grit and spent blasting grit, blasted paint | Containment, yard sweeping | Yes | Soil, Groundwater, Sediment |
| Backfilling | Bulkhead and nearshore development | Various | Backfill-soil, broken concrete, scrap steel, rock/riprap | Backfill materials | Yes | Soil, Groundwater, Sediment |
| **Parcel D Nearshore Area** | | | | | | |
| Storage yard | Miscellaneous storage | -- | -- | -- | -- | -- |
| Sandblast shed (booth) | Small parts shore side blasting | Blasting equipment, booth | Blasting grit and spent blasting grit, blasted paint | Containment, storage and manifest transport/disposal, recycling | Yes | Soil, Groundwater, Sediment |
| **Former Shipyard Adjacent Aquatic Area** | | | | | | |
| Marine Railway | Vessel docking-small boat transport to side tracking ways (1940s and 1950s), Small boat work | Railway, pilings, crane and winch operations, small boat work | Vessel storage, stormwater outfall (005) at bulkhead | Vessel hull paint, stormwater discharge, small boat works | Yes | Surface Water, Sediment |
| Dry Dock No. 1 | Haul-out activities: blasting, painting, repairs, installations | Pressure wash/blasting equipment, painting, various assembly/installation | Mill scale, rust, paint, pressure wash/blasting liquid/material, bilge water, blasting grit | Pressure wash/blasting containment, wastewater treatment | Yes | Surface Water, Sediment |
| Dry Dock No. 2 | Haul-out activities: blasting, painting, repairs, installations | Pressure wash/blasting equipment, painting, various assembly/installation | Mill scale, rust, paint, pressure wash/blasting liquid/material, bilge water, blasting grit | Pressure wash/blasting containment, wastewater treatment | Yes | Surface Water, Sediment |
| Grit hopper | Grit storage and handling | Hopper | Blasting grit | Containment | Yes | Surface Water, Sediment |
| Paint mixing sheds (2) | Paint mixing | Paint mixing equipment | Paint | Spill containment | Yes | Surface Water, Sediment |
| Stormwater Outfall (005) | Stormwater management | Storm drain lines | Surface erosion and groundwater infiltration | Stormwater centrifugal /separator system, NPDES permit/monitoring | Yes | Surface Water, Sediment |
| Graving Dock | Haul-out activities: blasting, painting, repairs, installations | Pressure wash/blasting equipment, painting, various assembly/installation | Mill scale, rust, paint, pressure wash/blasting liquid/material, bilge water, blasting grit | Pressure wash/blasting containment, wastewater treatment | Yes | Surface Water, Sediment |

**Table 2**

**Summary of Year 2000 UST Removal Confirmation Sampling Exceedances**

| Sample ID | Constituent | Concentration (mg/kg) | MTCA Method A Industrial Cleanup Level (mg/kg) |
|---|---|---|---|
| B3 | TPH-G | 170 | 100 |
| B4(1) | TPH-G | 800 | 100 |
| B1(2) | Benzene | 0.7 | 0.5 |
| SS-1 | TPH-G | 140 | 100 |
| SS-3(2) | TPH-G | 300 | 100 |

Notes:
mg/kg milligrams per kilogram
MTCA Model Toxics Control Act
TPH-G Total petroleum hydrocarbons – gasoline range

**Table 3**

**Summary of Year 2006 Upland Property Investigation Sample Coordinates and Intervals**

| Station ID | Soil/Catch Basin Sample ID | Sample Interval (feet) | | Groundwater Sample ID | Screened Sample Interval (feet) | | Northing (feet) | Easting (feet) | Ground Surface Elevation |
|---|---|---|---|---|---|---|---|---|---|
| DSI01 | DSI01-SO-A | 0 | 3 | DSI01-GW | 0 | 10 | 204362.38 | 1267483.65 | 15.85 |
| | DSI01-SO-B | 4 | 6 | - | | | 204362.38 | 1267483.65 | 15.85 |
| DSI02 | DSI02-SO-A | 0 | 3 | DSI02-GW | - | - | 204484.72 | 1267482.28 | 16.55 |
| | DSI02-SO-B | 3 | 5 | - | | | 204484.72 | 1267482.28 | 16.55 |
| DSI03 | DSI03-SO-A | 0 | 3 | DSI03-GW | 0 | 10 | 204614.54 | 1267538.20 | 16.56 |
| | DSI03-SO-B | 5 | 6.5 | - | | | 204614.54 | 1267538.20 | 16.56 |
| DSI04 | DSI04-SO-A | 0 | 3 | DSI04-GW | 0 | 10 | 204577.53 | 1267677.30 | 14.95 |
| | DSI04-SO-B | 3 | 5 | - | | | 204577.53 | 1267677.30 | 14.95 |
| DSI05 | DSI05-SO-A | 0 | 3 | DSI05-GW | 0 | 10 | 204414.79 | 1267664.49 | 15.38 |
| | DSI05-SO-B | 3 | 5 | - | | | 204414.79 | 1267664.49 | 15.38 |
| DSI06 | DSI06-SO-A | 0 | 3 | DSI06-GW | 0 | 10 | 204403.48 | 1267832.57 | 15.38 |
| | DSI06-SO-B | 4 | 6 | - | | | 204403.48 | 1267832.57 | 15.38 |
| DSI07 | DSI07-SO-A | 0 | 3 | DSI07-GW | 0 | 10 | 204440.17 | 1267843.29 | 15.30 |
| | DSI07-SO-B | 3 | 5 | - | | | 204440.17 | 1267843.29 | 15.30 |
| DSI08 | DSI08-SO-A | 0 | 3 | DSI08-GW | 0 | 10 | 204599.08 | 1267815.08 | 15.08 |
| | DSI08-SO-B | 3 | 5 | - | | | 204599.08 | 1267815.08 | 15.08 |
| DSI09 | DSI09-SO-A | 0 | 3 | DSI09-GW | 0 | 10 | 204599.10 | 1267972.09 | 15.10 |
| | DSI09-SO-B | 3 | 5 | - | | | 204599.10 | 1267972.09 | 15.10 |
| DSI10 | DSI10-SO-A | 0 | 3 | DSI10-GW | 0 | 10 | 204456.02 | 1267928.63 | 14.96 |
| | DSI10-SO-B | 3 | 5 | - | | | 204456.02 | 1267928.63 | 14.96 |
| DSI11 | DSI11-SO-A | 0 | 3 | DSI11-GW | 0 | 10 | 204358.81 | 1267970.43 | 14.74 |
| | DSI11-SO-B | 3 | 5 | - | | | 204358.81 | 1267970.43 | 14.74 |
| DSI12 | DSI12-SO-A | 0 | 3 | DSI12-GW | 0 | 10 | 204269.04 | 1267970.42 | 14.38 |
| | DSI12-SO-B | 3 | 5 | - | | | 204269.04 | 1267970.42 | 14.38 |
| DSI13 | DSI13-CB-YYMMDD | - | - | - | - | - | 204534.18 | 1267506.84 | 15.60 |
| DSI14 | DSI14-CB-YYMMDD | - | - | - | - | - | 204487.92 | 1267507.37 | 15.31 |
| DSI15 | DSI15-CB-YYMMDD | - | - | - | - | - | 204566.32 | 1267577.87 | 14.60 |
| DSI16 | DSI16-CB-YYMMDD | - | - | - | - | - | 204603.21 | 1267662.99 | 14.75 |
| DSI17 | DSI17-CB-YYMMDD | - | - | - | - | - | 204482.78 | 1267687.03 | 14.66 |
| DSI18 | DSI18-CB-YYMMDD | - | - | - | - | - | 204572.22 | 1267818.66 | 14.97 |

## Table 3
## Summary of Year 2006 Upland Property Investigation Sample Coordinates and Intervals

| Station ID | Soil/Catch Basin Sample ID | Sample Interval (feet) | | Groundwater Sample ID | Screened Sample Interval (feet) | | Northing (feet) | Easting (feet) | Ground Surface Elevation |
|---|---|---|---|---|---|---|---|---|---|
| DSI19 | DSI19-CB-YYMMDD | - | - | - | - | - | 204512.92 | 1267823.23 | 14.49 |
| DSI20 | DSI20-CB-YYMMDD | - | - | - | - | - | 204435.85 | 1267776.70 | 14.43 |
| DSI21 | DSI21-CB-YYMMDD | - | - | - | - | - | 204471.91 | 1267822.86 | 15.23 |
| DSI22 | DSI22-CB-YYMMDD | 0 | 1.5 | - | - | - | 204481.19 | 1268018.19 | - |
| DSI23 | DSI23-CB-YYMMDD | - | - | - | - | - | 204460.68 | 1267966.97 | 14.59 |
| MW-4 | - | - | - | MW4-GW-YYMMDD | 5 | 17 | 204675.26 | 1267474.81 | 20.09 |
| MW-5 | - | - | - | MW5-GW-YYMMDD | 11 | 16 | 204585.26 | 1267494.81 | 16.49 |

Notes:

Northing and Easting coordinates are referenced to the Washington State Coordinate System, North Zone in U.S. Survey feet

Ground surface elevation coordinates are referenced to mean lower low water (MLLW) in feet.

**Table 4**

**Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID | | DSI-01 | DSI-01 | DSI-02 | DSI-02 | DSI-03 | DSI-03 | DSI-04 | DSI-04 | DSI-05 | DSI-05 | DSI-06 | DSI-06 | DSI-07 | DSI-07 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | DSI01-SO-A | DSI01-SO-B | DSI02-SO-A | DSI02-SO-B | DSI03-SO-A | DSI03-SO-B | DSI04-SO-A | DSI04-SO-B | DSI05-SO-A | DSI05-SO-B | DSI06-SO-A | DSI06-SO-B | DSI07-SO-A | DSI07-SO-B |
| Sample Date | MTCA A | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/28/2006 | 9/28/2006 |
| Depth Interval | Industrial | 0-3 ft | 4-6 ft | 0-3 ft | 3-5 ft | 0-3 ft | 5-6.5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 4-6 ft | 0-3 ft | 3-5 ft |
| **Conventionals (%)** | | | | | | | | | | | | | | | |
| Total solids | -- | **88.40** | **80.20** | **96.10** | **78.60** | **96.10** | **89.40** | **74.30** | **87.60** | **76.70** | **88.90** | **78.40** | **90.20** | **74.10** | **95.50** |
| Total Organic Carbon | -- | **1.11** | **0.384** | **0.305** | **0.698** | **0.325** | **0.781** | **0.579** | **0.084** | **1.07** | **0.226** | **1.37** | **0.308** | **1.05** | **0.097** |
| **TPH (mg/kg)** | | | | | | | | | | | | | | | |
| TPH - Gasoline Range | 30/100[(1)] | 5.3 U | 6.3 U | 4.8 U | **22** | **92** | **110** | **20** | 6.4 U | **16** | **8.4** | **120** | **13** | **74** | **36** |
| TPH - Diesel Range | 2000 | **65** | **12** | **15** | **66** | **61** | **380** | **40** | 5.5 U | **46** | 5.7 U | **2700** | **2200** | **16** | **20** |
| TPH - Motor Oil Range | 2000 | **140** | **33** | **170** | **130** | **110** | **310** | **100** | 11 U | **160** | 11 U | **260** | **190** | **29** | **18** |
| **Metals (mg/kg)** | | | | | | | | | | | | | | | |
| Arsenic | 20 | **48.1 J** | **3.5** | **18.9** | **5.8** | **7.1** | **10.4** | **6.4** | **1.1** | **7.1** | **1.3** | **7.0** | **2.2** | **4.3 J** | **1.6** |
| Cadmium | 2 | **0.4** | **0.2** | 2 U | **0.3** | 1 U | **0.5** | **0.5** | 0.2 U | **0.6** | 0.2 U | **0.3** | 0.2 U | 0.3 U | 0.2 U |
| Chromium | 2000 | **20.4** | **15.9** | **5** | **21.7** | **61** | **34** | **27.2** | **10.4** | **21.1** | **11.0** | **20.0** | **15.2** | **19.6** | **25.9** |
| Chromium VI | 19 | 0.125 UJ | 0.135 UJ | 0.116 UJ | 0.140 UJ | 0.111 UJ | 0.126 UJ | 0.151 UJ | 0.127 UJ | 0.142 UJ | 0.127 UJ | 0.143 UJ | 0.120 UJ | 0.150 UJ | 0.115 UJ |
| Copper | -- | **103 J** | **20.4** | **55** | **33.6** | **539** | **238** | **45.9** | **9.0** | **122** | **11.9** | **37.1** | **18.2** | **52.1 J** | **10.3** |
| Lead | 1000 | **36 J** | **6** | 20 U | **32** | **460** | **94** | **14** | 2 U | **78** | **3** | **14** | **6** | **11 J** | **3** |
| Mercury | 2 | **0.09** | 0.05 U | **0.05** | **0.20** | 0.05 U | 0.05 U | **0.15** | 0.04 U | **0.27** | 0.04 U | **0.14** | 0.05 U | **0.72 J** | 0.04 U |
| Silver | -- | 0.3 U | 0.3 U | 3 U | 0.4 U | 2 U | 0.8 U | 0.4 U | 0.3 U | 0.4 U | 0.3 U | 0.4 U | 0.3 U | 0.4 U | 0.3 U |
| Zinc | -- | **192** | **36.8** | **57** | **57.7** | **129** | **160** | **85.4** | **21.9** | **127** | **26.4** | **57.5** | **33.6** | **53.2** | **29.1** |
| **Pesticides (µg/kg)** | | | | | | | | | | | | | | | |
| 4,4'-DDD | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | **28** | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| 4,4'-DDE | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| 4,4'-DDT | 4000 | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| Total DDT (U=1/2) | -- | 4.95 U | 4.8 U | 4.8 U | 4.95 U | 4.8 U | 4.8 U | 4.8 U | 4.65 U | **31.1** | 4.8 U | 4.8 U | 4.95 U | 4.8 U | 4.8 U |
| Aldrin | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| alpha-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| beta-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| delta-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| gamma-BHC (Lindane) | 10 | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| alpha-Chlordane | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| gamma-Chlordane | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| Dieldrin | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 8.5 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| Endosulfan I | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| Endosulfan II | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 9.9 U | 7.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| Endosulfan Sulfate | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 15 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| Endrin | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| Endrin aldehyde | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| Endrin ketone | -- | 3.3 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U | 3.2 U | 3.1 U | 3.1 U | 3.2 U | 3.2 U | 3.3 U | 3.2 U | 3.2 U |
| Heptachlor | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| Heptachlor Epoxide | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| Methoxychlor | -- | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U | 17 U | 16 U | 16 U |
| Toxaphene | -- | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 160 U | 170 U | 160 U | 160 U |
| **PCBs (µg/kg)** | | | | | | | | | | | | | | | |
| Aroclor 1016 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 9.8 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| Aroclor 1221 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 9.8 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |

**Table 4**

**Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID | | DSI-01 | DSI-01 | DSI-02 | DSI-02 | DSI-03 | DSI-03 | DSI-04 | DSI-04 | DSI-05 | DSI-05 | DSI-06 | DSI-06 | DSI-07 | DSI-07 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | DSI01-SO-A | DSI01-SO-B | DSI02-SO-A | DSI02-SO-B | DSI03-SO-A | DSI03-SO-B | DSI04-SO-A | DSI04-SO-B | DSI05-SO-A | DSI05-SO-B | DSI06-SO-A | DSI06-SO-B | DSI07-SO-A | DSI07-SO-B |
| Sample Date | MTCA A | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/28/2006 | 9/28/2006 |
| Depth Interval | Industrial | 0-3 ft | 4-6 ft | 0-3 ft | 3-5 ft | 0-3 ft | 5-6.5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 3-5 ft | 0-3 ft | 4-6 ft | 0-3 ft | 3-5 ft |
| Aroclor 1232 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 9.8 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| Aroclor 1242 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 9.8 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| Aroclor 1248 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 9.8 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| Aroclor 1254 | -- | 9.8 U | 9.8 U | 9.7 U | 9.7 U | 48 U | 9.5 U | 9.6 U | 9.5 U | 39 U | 9.6 U | 9.7 U | 9.7 U | 9.7 U | 9.6 U |
| Aroclor 1260 | -- | **43 J** | **10 J** | 9.7 UJ | 9.7 UJ | **300 J** | **94 J** | 9.6 UJ | 9.5 UJ | **46 J** | 9.6 UJ | 9.7 UJ | 9.7 UJ | 9.7 U | 9.6 U |
| Total PCBs (U=1/2) | 10000 | **72.4** | **39.4** | 34 U | 34 U | **444** | **122** | 33.6 U | 33.2 U | **90** | 33.6 U | 34 U | 34 U | 34 U | 33.6 U |
| **SVOCs (µg/kg)** | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | -- | 4.6 U | 5.6 U | 4.8 U | 5.2 U | 5.2 U | 4.6 U | 6.5 U | 5.6 U | 6.4 UJ | 6.4 U | 470 U | 5.5 U | 6.1 U | 6.2 U |
| 1,2,4-Trichlorobenzene | -- | 4.6 U | 5.6 U | 4.8 U | 5.2 U | 5.2 U | 4.6 U | 6.5 U | 5.6 U | 6.4 UJ | 6.4 U | 470 U | 5.5 U | 6.1 U | 6.2 U |
| 1,2,4-Trimethylbenzene | -- | 0.9 U | 1.1 U | **3.8** | **100** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | **120** | 1.1 U | **3200** | **51** |
| 1,2-Dichlorobenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,3,5-Trimethylbenzene | -- | 0.9 U | 1.1 U | **1.2** | **39** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | **80** | **15** |
| 1,3-Dichlorobenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,4-Dichlorobenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 2,4-Dimethylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | **19** | 5.0 U | **4.7** | **98** | 4.7 U | **40** | **16** | 5.0 U | **26** | 4.7 U | **33** | 27 U | **22** | **66** |
| 2-Methylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Methylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Acenaphthene | -- | **5.8** | 5.0 U | 4.7 U | **120** | **5.6** | 4.7 U | 5.0 U | 5.0 U | 4.9 U | 4.7 U | 30 U | 27 U | 5.0 U | **9.9** |
| Acenaphthylene | -- | **9.1** | 5.0 U | 4.7 U | 4.8 U | 4.7 U | 4.7 U | 5.0 U | 5.0 U | **6.4** | 4.7 U | 30 U | **48** | 5.0 U | 5.0 U |
| Anthracene | -- | **44** | **8.4** | 4.7 U | **100** | **5.1** | **8.5** | **5.9** | 5.0 U | **12** | 4.7 U | 30 U | 27 U | **5.5** | **7.9** |
| Benzo(a)anthracene | -- | **64** | **9.9** | 4.7 U | **110** | **9.8** | **11** | **14** | 5.0 U | **28** | 4.7 U | **30** | **43** | **14** | **6.4** |
| Benzo(a)pyrene | 2000 | **56** | **9.4** | **5.7** | **110** | **10** | **12** | **8.4** | 5.0 U | **29** | 4.7 U | **39** | **99** | **11** | **5.9** |
| Benzo(b)fluoranthene | -- | **120** | **15** | **11** | **72** | **12** | **21** | **16** | 5.0 U | **48** | 4.7 U | **57** | **91** | **16** | **5.9** |
| Benzo(g,h,i)perylene | -- | **65** | **9.4** | **5.7** | **38** | **7.0** | **5.2** | 5.0 U | 5.0 U | **13** | 4.7 U | 30 U | **54** | **9.5** | 5.0 U |
| Benzo(k)fluoranthene | -- | **74** | **17** | **9.4** | **90 J** | **14** | **15** | **13** | 5.0 U | **28** | 4.7 U | **54** | **94** | **14** | 5.0 U |
| Benzoic acid | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| bis(2-Ethylhexyl)phthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Butylbenzylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chrysene | -- | **130** | **22** | **10** | **140 J** | **17** | **31** | **25** | 5.0 U | **50** | 4.7 U | **78** | **120** | **22** | **6.9** |
| Dibenzo(a,h)anthracene | -- | **18** | 5.0 U | 4.7 U | **12** | 4.7 U | 4.7 U | 5.0 U | 5.0 U | 4.9 U | 4.7 U | 30 U | 27 U | 5.0 U | 5.0 U |
| Dibenzofuran | -- | **12** | 5.0 U | 4.7 U | **56** | 4.7 U | **9.4** | **5.4** | 5.0 U | **16** | 4.7 U | 30 U | 27 U | 5.0 U | 5.0 U |
| Diethylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dimethylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Di-n-butylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Di-n-octylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluoranthene | -- | **170** | **36** | **11** | **270** | **26** | **38** | **40** | 5.0 U | **96** | 4.7 U | **120** | **120** | **45** | **15** |
| Fluorene | -- | **11** | 5.0 U | 4.7 U | **120** | **5.1** | **19** | 5.0 U | 5.0 U | **6.9** | 4.7 U | 30 U | **27** | 5.0 U | **14** |
| Hexachlorobenzene | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| Hexachlorobutadiene | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | **54** | **8.9** | 4.7 U | **37** | **5.6** | 4.7 U | **5.4** | 5.0 U | **13** | 4.7 U | 30 U | **48** | **7.0** | 5.0 U |

**Table 4**

**Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date<br>Depth Interval | MTCA A Industrial | DSI-01<br>DSI01-SO-A<br>9/27/2006<br>0-3 ft | DSI-01<br>DSI01-SO-B<br>9/27/2006<br>4-6 ft | DSI-02<br>DSI02-SO-A<br>9/27/2006<br>0-3 ft | DSI-02<br>DSI02-SO-B<br>9/27/2006<br>3-5 ft | DSI-03<br>DSI03-SO-A<br>9/27/2006<br>0-3 ft | DSI-03<br>DSI03-SO-B<br>9/27/2006<br>5-6.5 ft | DSI-04<br>DSI04-SO-A<br>9/27/2006<br>0-3 ft | DSI-04<br>DSI04-SO-B<br>9/27/2006<br>3-5 ft | DSI-05<br>DSI05-SO-A<br>9/27/2006<br>0-3 ft | DSI-05<br>DSI05-SO-B<br>9/27/2006<br>3-5 ft | DSI-06<br>DSI06-SO-A<br>9/27/2006<br>0-3 ft | DSI-06<br>DSI06-SO-B<br>9/27/2006<br>4-6 ft | DSI-07<br>DSI07-SO-A<br>9/28/2006<br>0-3 ft | DSI-07<br>DSI07-SO-B<br>9/28/2006<br>3-5 ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 5000 | **24** | **5.0** | **5.2** | **180** | **6.5** | **12** | **13** | 5.0 U | **53** | 4.7 U | **57** | **27** | **69** | **47** |
| n-Nitrosodiphenylamine | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Phenanthrene | -- | **68** | **14** | **7.6** | **410 J** | **27** | **100** | **24** | 5.0 U | **91** | 4.7 U | **90** | **80** | **25** | **13** |
| Phenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pyrene | -- | **140** | **29** | **10** | **280** | **21** | **37** | **33** | 5.0 U | **72** | 4.7 U | **160** | **320** | **34** | **21** |
| Total PAHs (U=1/2) | -- | **1053** | **194** | **92** | **2091** | **176** | **319** | **210** | 40 U | **551** | 37.6 U | **790** | **1212** | **282** | **165** |
| **Volatiles (µg/kg)** | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,1,1-Trichloroethane | 2000 | **13** | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,1,2,2-Tetrachloroethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,1,2-Trichloroethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,1-Dichloroethane | -- | **10** | **7.9** | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,1-Dichloroethene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,1-Dichloropropene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,2,3-Trichloropropane | -- | 1.8 U | 2.2 U | 1.9 U | 2.1 U | 2.1 U | 1.8 U | 2.6 U | 2.2 U | 2.5 UJ | 2.6 U | 190 U | 2.2 U | 2.4 U | 2.5 U |
| 1,2-Dibromo-3-chloropropane | -- | 4.6 U | 5.6 U | 4.8 U | 5.2 U | 5.2 U | 4.6 U | 6.5 U | 5.6 U | 6.4 UJ | 6.4 U | 470 U | 5.5 U | 6.1 U | 6.2 U |
| 1,2-Dibromoethane | 5 | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,2-Dichloroethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,2-Dichloropropane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 1,3-Dichloropropane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 2,2-Dichloropropane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 2-Butanone | -- | **11** | **12** | **5.2** | **18** | **11** | **5.2** | **9.2** | 5.6 U | 6.4 U | **10** | **780** | **13** | **27** | **16** |
| 2-Chlorotoluene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 2-Hexanone | -- | 4.6 U | 5.6 U | 4.8 U | 5.2 U | 5.2 U | 4.6 U | 6.5 U | 5.6 U | 6.4 U | 6.4 U | 470 U | 5.5 U | 6.1 U | 6.2 U |
| 4-Chlorotoluene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| 4-Isopropyltoluene | -- | 0.9 U | 1.1 U | 1.0 U | **6.0** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | **1.3** |
| 4-Methyl-2-pentanone | -- | 4.6 U | 5.6 U | 4.8 U | 5.2 U | 5.2 U | 4.6 U | 6.5 U | 5.6 U | 6.4 U | 6.4 U | 470 U | 5.5 U | 6.1 U | 6.2 U |
| Acetone | -- | **77** | **70** | **83** | **160** | **85** | 41 U | **66** | 29 U | 51 U | **90** | **6500** | **92** | 6.1 U | **110** |
| Benzene | 30 | 0.9 U | **1.2** | 1.0 U | **2.0** | 1.0 U | 0.9 U | **1.6** | 1.1 U | **1.8** | 1.3 U | **260** | **1.7** | **50** | **6.0** |
| Bromobenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Bromochloromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Bromodichloromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Bromoform | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Bromomethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Carbon disulfide | -- | **1.8** | **11** | **1.2** | **4.9** | **1.4** | **1.2** | **8.6** | 1.1 U | 1.3 U | **17** | 93 U | **30** | **3.3** | **10** |
| Carbon tetrachloride | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Chloroethane | -- | **1.5** | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Chloroform | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Chloromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| cis-1,2-Dichloroethene | -- | 0.9 U | **2.2** | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| cis-1,3-Dichloropropene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Dibromochloromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |

**Table 4**

**Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date<br>Depth Interval | MTCA A<br>Industrial | DSI-01<br>DSI01-SO-A<br>9/27/2006<br>0-3 ft | DSI-01<br>DSI01-SO-B<br>9/27/2006<br>4-6 ft | DSI-02<br>DSI02-SO-A<br>9/27/2006<br>0-3 ft | DSI-02<br>DSI02-SO-B<br>9/27/2006<br>3-5 ft | DSI-03<br>DSI03-SO-A<br>9/27/2006<br>0-3 ft | DSI-03<br>DSI03-SO-B<br>9/27/2006<br>5-6.5 ft | DSI-04<br>DSI04-SO-A<br>9/27/2006<br>0-3 ft | DSI-04<br>DSI04-SO-B<br>9/27/2006<br>3-5 ft | DSI-05<br>DSI05-SO-A<br>9/27/2006<br>0-3 ft | DSI-05<br>DSI05-SO-B<br>9/27/2006<br>3-5 ft | DSI-06<br>DSI06-SO-A<br>9/27/2006<br>0-3 ft | DSI-06<br>DSI06-SO-B<br>9/27/2006<br>4-6 ft | DSI-07<br>DSI07-SO-A<br>9/28/2006<br>0-3 ft | DSI-07<br>DSI07-SO-B<br>9/28/2006<br>3-5 ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dibromomethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Dichlorodifluoromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Dichloromethane | 20 | 2.1 U | 2.6 U | 1.9 U | 2.1 U | 2.1 U | 1.8 U | 2.6 U | 2.2 U | 2.5 U | 2.6 U | 190 U | 2.5 U | **2.6** | 2.5 U |
| Ethylbenzene | 6000 | 0.9 U | 1.1 U | 1.0 U | **6.0** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | **60** | **7.4** |
| Isopropylbenzene | -- | 0.9 U | 1.1 U | 1.0 U | **19** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | **34** | **5.0** |
| n-Butylbenzene | -- | 0.9 U | 1.1 U | 1.0 U | **4.4** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | **22** | **20** |
| n-Propylbenzene | -- | 0.9 U | 1.1 U | 1.0 U | **9.9** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | **120** | **28** |
| sec-Butylbenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | **5.4** |
| Styrene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| tert-Butylbenzene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 UJ | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| tert-Butylmethylether | 100 | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Tetrachloroethene | 50 | **3.7** | **1.3** | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Toluene | 7000 | 0.9 U | 1.1 U | **1.8** | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | **5.5** | 1.2 U |
| trans-1,2-Dichloroethene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| trans-1,3-Dichloropropene | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Trichloroethene | 30 | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Trichlorofluoromethane | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| Vinyl chloride | -- | 0.9 U | 1.1 U | 1.0 U | 1.0 U | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | 93 U | 1.1 U | 1.2 U | 1.2 U |
| m,p-Xylenes | -- | 0.9 U | 1.1 U | **3.6** | **47** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | **290** | **1.5** | **160** | **13** |
| o-Xylene | -- | 0.9 U | 1.1 U | **1.8** | **26** | 1.0 U | 0.9 U | 1.3 U | 1.1 U | 1.3 U | 1.3 U | **100** | 1.1 U | **5.1** | 1.2 U |

**Table 4**

**Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date<br>Depth Interval | MTCA A Industrial | DSI-08<br>DSI08-SO-A<br>9/28/2006<br>0-3 ft | DSI-08<br>DSI08-SO-B<br>9/28/2006<br>3-5 ft | DSI-09<br>DSI09-SO-A<br>9/28/2006<br>0-3 ft | DSI-09<br>DSI09-SO-B<br>9/28/2006<br>3-5 ft | DSI-10<br>DSI10-SO-A<br>9/28/2006<br>0-3 ft | DSI-10<br>DSI10-SO-B<br>9/28/2006<br>3-5 ft | DSI-11<br>DSI11-SO-A<br>9/28/2006<br>0-3 ft | DSI-11<br>DSI11-SO-B<br>9/28/2006<br>3-5 ft | DSI-12<br>DSI12-SO-A<br>9/28/2006<br>0-3 ft | DSI-12<br>DSI12-SO-B<br>9/28/2006<br>3-5 ft |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Conventionals (%)** | | | | | | | | | | | |
| Total solids | -- | **70.40** | **92.90** | **92.60** | **89.60** | **69.70** | **95.30** | **76.10** | **93.70** | **87.70** | **86.70** |
| Total Organic Carbon | -- | **0.661** | **0.133** | **0.939** | **2.35** | **1.30** | **0.147** | **1.34** | **0.099** | **1.25** | **1.12** |
| **TPH (mg/kg)** | | | | | | | | | | | |
| TPH - Gasoline Range | 30/100[(1)] | 8.8 U | 6.7 U | **14** | **200** | 8.3 U | 6.0 U | **8.0** | 5.9 U | 6.6 U | **27** |
| TPH - Diesel Range | 2000 | 6.7 U | 5.4 U | **42** | **56** | **16** | 5.2 U | **120** | 5.5 U | **88** | **170** |
| TPH - Motor Oil Range | 2000 | **21** | 11 U | **87** | **110** | **39** | 10 U | **180** | 11 U | **130** | **240** |
| **Metals (mg/kg)** | | | | | | | | | | | |
| Arsenic | 20 | **4.8** | **0.7** | **3.7** | **20.2** | **6.2** | **1.9** | **4.4** | **1.4** | **17.1** | **3.3** |
| Cadmium | 2 | 0.3 U | 0.2 U | **0.3** | **8.5** | 0.3 U | 0.2 U | **0.3** | 0.2 U | **0.2** | 0.2 U |
| Chromium | 2000 | **17.7** | **9.7** | **17.4** | **36** | **20.2** | **14.2** | **17.1** | **11.4** | **20.1** | **15.5** |
| Chromium VI | 19 | 0.160 UJ | 0.116 UJ | 0.117 UJ | 0.124 UJ | 0.157 UJ | 0.117 UJ | **2.05 J** | 0.120 UJ | 0.125 UJ | 0.123 UJ |
| Copper | -- | **31.0** | **8.5** | **65.9** | **3310** | **29.0** | **8.8** | **49.0** | **8.4** | **34.2** | **18.1** |
| Lead | 1000 | **11** | 2 U | **118** | **4940** | **8** | **11** | **92** | 2 U | **20** | **6** |
| Mercury | 2 | **0.10** | 0.05 U | **0.31** | **0.18** | **0.11** | 0.04 U | **0.76** | 0.04 U | **0.08** | 0.05 U |
| Silver | -- | 0.4 U | 0.3 U | 0.3 U | **1.2** | 0.4 U | 0.3 U | 0.4 U | 0.3 U | 0.3 U | 0.3 U |
| Zinc | -- | **52.3** | **30.5** | **115** | **5840** | **43.7** | **25.2** | **78.3** | **23.0** | **77.4** | **36.8** |
| **Pesticides (µg/kg)** | | | | | | | | | | | |
| 4,4'-DDD | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 3.3 U |
| 4,4'-DDE | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 3.3 U |
| 4,4'-DDT | 4000 | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 12 U |
| Total DDT (U=1/2) | -- | 4.8 U | 4.8 U | 4.8 U | 4.95 U | 4.95 U | 4.95 U | 4.8 U | 4.95 U | 4.95 U | 9.3 U |
| Aldrin | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| alpha-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| beta-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 4.0 U | 3.1 U |
| delta-BHC | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| gamma-BHC (Lindane) | 10 | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| alpha-Chlordane | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| gamma-Chlordane | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| Dieldrin | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 3.3 U |
| Endosulfan I | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| Endosulfan II | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 3.3 U |
| Endosulfan Sulfate | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 19 U | 21 U |
| Endrin | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 14 U | 17 U |
| Endrin aldehyde | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 3.3 U | 3.3 U |
| Endrin ketone | -- | 3.2 U | 3.2 U | 3.2 U | 3.3 U | 3.3 U | 3.3 U | 3.2 U | 3.3 UJ | 15 U | 16 U |
| Heptachlor | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| Heptachlor Epoxide | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 3.8 U |
| Methoxychlor | -- | 16 U | 16 U | 16 U | 16 U | 16 U | 17 U | 16 U | 16 UJ | 16 U | 16 U |
| Toxaphene | -- | 160 U | 160 U | 160 U | 160 U | 160 U | 170 U | 160 U | 160 UJ | 160 U | 160 U |
| **PCBs (µg/kg)** | | | | | | | | | | | |
| Aroclor 1016 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| Aroclor 1221 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |

**Table 4**

**Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date<br>Depth Interval | MTCA A Industrial | DSI-08<br>DSI08-SO-A<br>9/28/2006<br>0-3 ft | DSI-08<br>DSI08-SO-B<br>9/28/2006<br>3-5 ft | DSI-09<br>DSI09-SO-A<br>9/28/2006<br>0-3 ft | DSI-09<br>DSI09-SO-B<br>9/28/2006<br>3-5 ft | DSI-10<br>DSI10-SO-A<br>9/28/2006<br>0-3 ft | DSI-10<br>DSI10-SO-B<br>9/28/2006<br>3-5 ft | DSI-11<br>DSI11-SO-A<br>9/28/2006<br>0-3 ft | DSI-11<br>DSI11-SO-B<br>9/28/2006<br>3-5 ft | DSI-12<br>DSI12-SO-A<br>9/28/2006<br>0-3 ft | DSI-12<br>DSI12-SO-B<br>9/28/2006<br>3-5 ft |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1232 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| Aroclor 1242 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| Aroclor 1248 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| Aroclor 1254 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | 9.8 U | 9.9 U | 29 U | 29 U |
| Aroclor 1260 | -- | 9.8 U | 9.5 U | 9.6 U | 9.8 U | 9.8 U | 9.4 U | **35** | 9.9 U | 29 U | 29 U |
| Total PCBs (U=1/2) | 10000 | 34.3 U | 33.2 U | 33.6 U | 34.3 U | 34.3 U | 32.9 U | **64.4** | 34.6 U | 102 U | 102 U |
| **SVOCs (µg/kg)** | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | -- | 6.4 U | 5.7 U | 5.2 U | 5.0 UJ- | 6.0 U | 5.1 U | 5.6 U | 5.3 U | 4.9 U | 5.4 U |
| 1,2,4-Trichlorobenzene | -- | 6.4 U | 5.7 U | 5.2 U | 5.0 UJ- | 6.0 U | 5.1 U | 5.6 U | 5.3 U | 4.9 U | 5.4 U |
| 1,2,4-Trimethylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | **1.4 J-** | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,2-Dichlorobenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,3,5-Trimethylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,3-Dichlorobenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,4-Dichlorobenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 2,4-Dimethylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | **5.0** | 4.9 U | **47** | **34** | **7.8** | 5.0 U | **19** | 4.8 U | **230** | **300** |
| 2-Methylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Methylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Acenaphthene | -- | 5.0 U | 4.9 U | **82** | **30** | 4.8 U | 5.0 U | **6.9** | 4.8 U | 37 U | **45** |
| Acenaphthylene | -- | 5.0 U | 4.9 U | **14** | **5.4** | 4.8 U | 5.0 U | **14** | 4.8 U | **880** | **1700** |
| Anthracene | -- | 5.0 U | 4.9 U | **87** | **19** | **11** | 5.0 U | **18** | 4.8 U | **290** | **450** |
| Benzo(a)anthracene | -- | **12** | 4.9 U | **160** | **27** | **18** | 5.0 U | **54** | 4.8 U | **1800** | **3600** |
| Benzo(a)pyrene | 2000 | **12** | 4.9 U | **180** | **23** | **15** | 5.0 U | **61** | 4.8 U | **3000** | **7900** |
| Benzo(b)fluoranthene | -- | **18** | 4.9 U | **240** | **35** | **20** | 5.0 U | **73** | 4.8 U | **1700** | **3400** |
| Benzo(g,h,i)perylene | -- | **8.4** | 4.9 U | **110** | **9.9** | **6.3** | 5.0 U | **37** | 4.8 U | **1300** | **2900** |
| Benzo(k)fluoranthene | -- | **13** | 4.9 U | **230** | **26** | **18** | 5.0 U | **67** | 4.8 U | **2100** | **5600** |
| Benzoic acid | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| bis(2-Ethylhexyl)phthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Butylbenzylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chrysene | -- | **22** | 4.9 U | **280** | **54** | **23** | 5.0 U | **87** | 4.8 U | **3000** | **7500** |
| Dibenzo(a,h)anthracene | -- | 5.0 U | 4.9 U | **38** | 5.0 U | 4.8 U | 5.0 U | **8.4** | 4.8 U | **390** | **900** |
| Dibenzofuran | -- | 5.0 U | 4.9 U | **32** | **18** | **6.8** | 5.0 U | **7.9** | 4.8 U | 37 U | 38 U |
| Diethylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dimethylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Di-n-butylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Di-n-octylphthalate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluoranthene | -- | **37** | 4.9 U | **480** | **91** | **61** | 5.0 U | **120** | 4.8 U | **2500** | **6000** |
| Fluorene | -- | 5.0 U | 4.9 U | **88** | **35** | **7.3** | 5.0 U | **7.9** | 4.8 U | **67** | **53** |
| Hexachlorobenzene | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| Hexachlorobutadiene | -- | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | **7.4** | 4.9 U | **110** | **9.4** | **6.3** | 5.0 U | **35** | 4.8 U | **1200** | **2700** |

**Table 4**

**Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date<br>Depth Interval | MTCA A<br>Industrial | DSI-08<br>DSI08-SO-A<br>9/28/2006<br>0-3 ft | DSI-08<br>DSI08-SO-B<br>9/28/2006<br>3-5 ft | DSI-09<br>DSI09-SO-A<br>9/28/2006<br>0-3 ft | DSI-09<br>DSI09-SO-B<br>9/28/2006<br>3-5 ft | DSI-10<br>DSI10-SO-A<br>9/28/2006<br>0-3 ft | DSI-10<br>DSI10-SO-B<br>9/28/2006<br>3-5 ft | DSI-11<br>DSI11-SO-A<br>9/28/2006<br>0-3 ft | DSI-11<br>DSI11-SO-B<br>9/28/2006<br>3-5 ft | DSI-12<br>DSI12-SO-A<br>9/28/2006<br>0-3 ft | DSI-12<br>DSI12-SO-B<br>9/28/2006<br>3-5 ft |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene | 5000 | 5.0 U | 4.9 U | **74** | **58** | **7.3** | 5.0 U | **24** | 4.8 U | **340** | **470** |
| n-Nitrosodiphenylamine | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Phenanthrene | -- | **26** | 4.9 U | **370** | **140** | **27** | 5.0 U | **54** | 4.8 U | **510** | **640** |
| Phenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pyrene | -- | **32** | 4.9 U | **400** | **110** | **51** | 5.0 U | **120** | 4.8 U | **4000** | **10000** |
| Total PAHs (U=1/2) | -- | **203** | 39.2 U | **2943** | **675** | **278** | 40 U | **787** | 38.4 U | **23096** | **53858** |
| **Volatiles (µg/kg)** | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,1,1-Trichloroethane | 2000 | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,1,2,2-Tetrachloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,1,2-Trichloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,1-Dichloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,1-Dichloroethene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,1-Dichloropropene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,2,3-Trichloropropane | -- | 2.6 U | 2.3 U | 2.1 U | 2.0 UJ- | 2.4 U | 2.0 U | 2.2 U | 2.1 U | 2.0 U | 2.2 U |
| 1,2-Dibromo-3-chloropropane | -- | 6.4 U | 5.7 U | 5.2 U | 5.0 UJ- | 6.0 U | 5.1 U | 5.6 U | 5.3 U | 4.9 U | 5.4 U |
| 1,2-Dibromoethane | 5 | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,2-Dichloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,2-Dichloropropane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,3-Dichloropropane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 2,2-Dichloropropane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 2-Butanone | -- | **6.6** | 5.7 U | **10** | 5.0 U | **6.5** | 5.1 U | **12** | **9.4** | **5.6** | 5.4 U |
| 2-Chlorotoluene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 2-Hexanone | -- | 6.4 U | 5.7 U | 5.2 U | 5.0 UJ- | 6.0 U | 5.1 U | 5.6 U | 5.3 U | 4.9 U | 5.4 U |
| 4-Chlorotoluene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 4-Isopropyltoluene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 4-Methyl-2-pentanone | -- | 6.4 U | 5.7 U | 5.2 U | 5.0 U | 6.0 U | 5.1 U | 5.6 U | 5.3 U | 4.9 U | 5.4 U |
| Acetone | -- | **62** | **49** | **100** | **55** | **55** | 35 U | **96** | **70** | **57** | **45** |
| Benzene | 30 | 1.3 U | 1.2 U | **1.0** | **1.3** | 1.2 U | 1.0 U | **2.3** | 1.1 U | **1.4** | **3.0** |
| Bromobenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Bromochloromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Bromodichloromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Bromoform | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Bromomethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Carbon disulfide | -- | 1.3 U | 1.2 U | 1.0 U | **1.6** | 1.2 U | **1.0** | **1.9** | **15** | 1.0 U | 1.1 U |
| Carbon tetrachloride | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Chloroethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Chloroform | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Chloromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| cis-1,2-Dichloroethene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| cis-1,3-Dichloropropene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Dibromochloromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |

**Table 4**

**Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date<br>Depth Interval | MTCA A<br>Industrial | DSI-08<br>DSI08-SO-A<br>9/28/2006<br>0-3 ft | DSI-08<br>DSI08-SO-B<br>9/28/2006<br>3-5 ft | DSI-09<br>DSI09-SO-A<br>9/28/2006<br>0-3 ft | DSI-09<br>DSI09-SO-B<br>9/28/2006<br>3-5 ft | DSI-10<br>DSI10-SO-A<br>9/28/2006<br>0-3 ft | DSI-10<br>DSI10-SO-B<br>9/28/2006<br>3-5 ft | DSI-11<br>DSI11-SO-A<br>9/28/2006<br>0-3 ft | DSI-11<br>DSI11-SO-B<br>9/28/2006<br>3-5 ft | DSI-12<br>DSI12-SO-A<br>9/28/2006<br>0-3 ft | DSI-12<br>DSI12-SO-B<br>9/28/2006<br>3-5 ft |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dibromomethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Dichlorodifluoromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Dichloromethane | 20 | **2.8** | 2.3 U | 2.1 U | 2.0 U | 2.4 U | **2.3** | 2.2 U | 2.1 U | 2.0 U | 2.2 U |
| Ethylbenzene | 6000 | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Isopropylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| n-Butylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| n-Propylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| sec-Butylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Styrene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| tert-Butylbenzene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| tert-Butylmethylether | 100 | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Tetrachloroethene | 50 | **3.6** | **1.4** | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Toluene | 7000 | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | **3.4** |
| trans-1,2-Dichloroethene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| trans-1,3-Dichloropropene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Trichloroethene | 30 | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Trichlorofluoromethane | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| Vinyl chloride | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 U | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| m,p-Xylenes | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| o-Xylene | -- | 1.3 U | 1.2 U | 1.0 U | 1.0 UJ- | 1.2 U | 1.0 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U |

## Table 4

## Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels

Qualifiers:

| | |
|---|---|
| N | normal field sample |
| FD | field duplicate |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| U | The analyte was analyzed for, but not detected above the sample reporting limit. |
| | Denotes criteria exceedance |
| **Bold** | Denotes detections |

Notes:

| | |
|---|---|
| -- | No numerical criterion of this type or sample not analyzed for this chemical. |
| MTCA | Model Toxics Control Act (WAC 173-340) |
| HPAH | High molecular weight polycyclic aromatic hydrocarbon |
| LPAH | Low molecular weight polycyclic aromatic hydrocarbon |
| mg/kg | milligrams per kilogram |
| µg/kg | micrograms per kilogram |
| (1) | If benzene is present, the cleanup level is 30 mg/kg. If benzene is not present, the cleanup level is 100 mg/kg. |

**Table 5**

**Summary of Year 2006 Investigation Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date | MTCA A<br>Industrial | DSI-01<br>DSI01-GW<br>9/27/2006 | DSI-02<br>DSI02-GW<br>9/27/2006 | DSI-03<br>DSI03-GW<br>9/27/2006 | DSI-04<br>DSI04-GW<br>9/27/2006 | DSI-05<br>DSI05-GW<br>9/27/2006 | DSI-06<br>DSI06-GW<br>9/27/2006 | DSI-07<br>DSI07-GW<br>9/28/2006 | DSI-07<br>DSI57-GW<br>9/28/2006 | DSI-08<br>DSI08-GW<br>9/28/2006 | DSI-09<br>DSI09-GW<br>9/28/2006 | DSI-10<br>DSI10-GW<br>9/28/2006 | DSI-11<br>DSI11-GW<br>9/28/2006 | DSI-12<br>DSI12-GW<br>9/28/2006 | MW-4<br>MW-4-GW-060929<br>9/29/2006 | MW-5<br>MW-5-GW-060929<br>9/29/2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TPH (mg/L)** | | | | | | | | | | | | | | | | |
| TPH - Gasoline Range | 0.8/1.0[(1)] | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | **2.0** | **2.2** | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| TPH - Diesel Range | 0.5 | 0.25 U | 0.25 U | **0.93** | 0.25 U | 0.25 U | 0.25 U | **1.9** | **1.9** | 0.25 U | 0.25 U | 0.25 U | **3.2** | **0.63** | **0.35** | 0.25 U |
| TPH - Motor Oil Range | 0.5 | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| **Metals-dissolved (µg/L)** | | | | | | | | | | | | | | | | |
| Arsenic | 5 | **68.4** | **2.4** | **1.5** | **2.2** | **0.6** | **1.8** | **3.8** | **4.2** | **1.4** | **1.6** | **0.8** | **0.8** | **5.0** | **1.0** | **3.4** |
| Cadmium | 5 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chromium | 50 | 0.5 UJ | 0.5 U | 2 U | 2 U | 2 U | 0.5 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U | 0.5 U | 1 U | **42** |
| Copper | -- | 0.5 U | 0.5 U | **0.8** | **0.7** | 0.5 U | 0.5 U | **0.6** | **1.1** | **0.7** | **0.9** | 0.5 U | 0.5 U | 0.5 U | 0.5 U | **14.3** |
| Lead | 15 | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Mercury | 2 | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U |
| Silver | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.4** |
| Zinc | -- | **5** | 4 U | **13** | 4 U | **7** | **5** | **6** | **7** | 4 U | **44** | **7** | **8** | 4 U | **4** | **8** |
| **Metals-total (µg/L) [2]** | | | | | | | | | | | | | | | | |
| Arsenic | -- | **84.4** | **16.4** | **9.5** | **11.2** | **2** | **2.3** | **9.5** | **7.2** | **11.8** | **2.6** | **2.4** | **6.7** | **32.5** | **1.0** | **4.9** |
| Cadmium | -- | **0.3** | **0.3** | **0.2** | **0.2** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.3** | 0.2 U | **0.3** | **1.6** | **0.3** | 0.2 U | 0.2 U |
| Chromium | -- | **7** | **49** | **38** | **29** | **6** | 2 U | **21** | **14** | **37** | 5 U | **5** | **34** | **20** | 1 U | **54** |
| Copper | -- | **18.5** | **86.7** | **53** | **55.6** | **15.2** | **7.5** | **39.1** | **24** | **70.4** | **34.4** | **26.1** | **49.2** | **126** | 0.5 U | **29** |
| Lead | -- | **3** | **11** | **8** | **13** | **6** | **2** | **6** | **5** | **12** | **55** | **14** | **10** | **27** | 1 U | **2** |
| Mercury | -- | 0.1 U | **0.1** | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.10 U | 0.10 U | **0.12** | 0.10 U | 0.10 U | 0.10 U | **0.12** | 0.10 U | 0.10 U |
| Silver | -- | 0.2 UJ | **0.3** | **0.3** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.4** | **0.2** | 0.2 U | 0.2 U | **0.2** | 0.2 U | **0.8** |
| Zinc | -- | **33** | **137** | **147** | **92** | **25** | **9** | **61** | **42** | **103** | **98** | **19** | **154** | **109** | **4** | **14** |
| **Pesticides (µg/L)** | | | | | | | | | | | | | | | | |
| 4,4'-DDD | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| 4,4'-DDE | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| 4,4'-DDT | 0.3 | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Total DDT (U=1/2) | -- | 0.017 U | 0.017 U | 0.017 U | 0.017 U | 0.017 U | 0.017 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U |
| Aldrin | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| alpha-BHC | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| beta-BHC | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| delta-BHC | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| gamma-BHC (Lindane) | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.018 U | 0.0050 U | 0.0050 U |
| alpha-Chlordane | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| gamma-Chlordane | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Dieldrin | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endosulfan I | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Endosulfan II | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endosulfan Sulfate | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin aldehyde | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin ketone | -- | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Heptachlor | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Heptachlor Epoxide | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |

**Table 5**

**Summary of Year 2006 Investigation Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date | MTCA A Industrial | DSI-01<br>DSI01-GW<br>9/27/2006 | DSI-02<br>DSI02-GW<br>9/27/2006 | DSI-03<br>DSI03-GW<br>9/27/2006 | DSI-04<br>DSI04-GW<br>9/27/2006 | DSI-05<br>DSI05-GW<br>9/27/2006 | DSI-06<br>DSI06-GW<br>9/27/2006 | DSI-07<br>DSI07-GW<br>9/28/2006 | DSI-07<br>DSI57-GW<br>9/28/2006 | DSI-08<br>DSI08-GW<br>9/28/2006 | DSI-09<br>DSI09-GW<br>9/28/2006 | DSI-10<br>DSI10-GW<br>9/28/2006 | DSI-11<br>DSI11-GW<br>9/28/2006 | DSI-12<br>DSI12-GW<br>9/28/2006 | MW-4<br>MW-4-GW-060929<br>9/29/2006 | MW-5<br>MW-5-GW-060929<br>9/29/2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Methoxychlor | -- | 0.054 U | 0.056 U | 0.055 U | 0.054 U | 0.053 U | 0.055 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Toxaphene | -- | 0.54 U | 0.56 U | 0.55 U | 0.54 U | 0.53 U | 0.55 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| **PCBs (µg/L)** | | | | | | | | | | | | | | | | |
| Aroclor 1016 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1221 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.080 U | 0.080 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1232 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.040 U | 0.080 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1242 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1248 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1254 | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 UJ |
| Aroclor 1260 | -- | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 U | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 U | 0.020 UJ |
| Total PCBs (U=1/2) | 0.1 | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.11 U | 0.13 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U |
| **SVOCs (µg/L)** | | | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 1.5 U |
| 1,2,4-Trichlorobenzene | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 1.5 U |
| 1,2,4-Trimethylbenzene | -- | 0.2 U | **0.4** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **24** | **26** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,2-Dichlorobenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,3,5-Trimethylbenzene | -- | 0.2 U | **0.3** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **10** | **12** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,3-Dichlorobenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,4-Dichlorobenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 2-Methylnaphthalene | -- | 0.10 U | 0.07 U | **0.11** | 0.02 U | **0.12** | 0.06 U | **32** | **28** | 0.06 U | 0.08 U | 0.06 U | 0.07 U | **0.47** | **1.3** | 0.01 U |
| Acenaphthene | -- | **0.07** | **0.03** | **0.01** | 0.01 U | **0.06** | **0.09** | **0.54** | **0.53** | **0.01 J** | **0.05** | **0.11** | **0.22** | **2.2** | **2.9** | 0.01 U |
| Acenaphthylene | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | **0.06** | **0.06** | 0.01 U | 0.01 U | 0.01 U | **0.02** | **1.8** | **0.08** | 0.01 U |
| Anthracene | -- | **0.02** | **0.01 J** | **0.02** | 0.01 U | **0.01 J** | **0.01 J** | **0.03** | **0.03** | **0.01 J** | **0.02** | 0.01 U | **0.01** | **2.6** | **0.14** | 0.01 U |
| Benzo(a)anthracene | -- | **0.01 J** | 0.01 U | **0.03** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01** | 0.01 U | 0.01 U | **3.4** | 0.01 U | 0.01 U |
| Benzo(a)pyrene | 0.1 | 0.01 U | 0.01 U | **0.02** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | **3.5** | 0.01 U | 0.01 U |
| Benzo(b)fluoranthene | -- | 0.01 U | 0.01 U | **0.02** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | **0.01 J** | 0.01 U | **2.0** | 0.01 U | 0.01 U |
| Benzo(g,h,i)perylene | -- | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | **0.01 J** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | **1.9** | 0.01 U | 0.01 U |
| Benzo(k)fluoranthene | -- | 0.01 U | 0.01 U | **0.03** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | **0.01 J** | 0.01 U | **2.2** | 0.01 U | 0.01 U |
| Chrysene | -- | **0.01** | **0.01 J** | **0.06** | 0.01 U | **0.02** | **0.01 J** | **0.01 J** | **0.01 J** | **0.01 J** | **0.02** | **0.02** | **0.01 J** | **5.0** | 0.01 U | 0.01 U |
| Dibenzo(a,h)anthracene | -- | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.65** | 0.01 U | 0.01 U |
| Dibenzofuran | -- | **0.03** | **0.01** | **0.01** | 0.01 U | **0.01 J** | **0.01 J** | **0.14** | **0.14** | **0.01 J** | **0.01 J** | 0.01 U | **0.03** | **0.44** | **0.13** | 0.01 U |
| Fluoranthene | -- | **0.05** | **0.02** | **0.02** | **0.01** | **0.02** | **0.03** | **0.02** | **0.02** | **0.02** | **0.04** | **0.01 J** | **0.03** | **8.5** | **0.13** | **0.01 J** |
| Fluorene | -- | **0.06** | **0.03** | **0.02** | 0.01 U | **0.01** | **0.03** | **0.57** | **0.54** | **0.01 J** | **0.03** | **0.01 J** | **0.16** | **3.3** | **2.0** | **0.01 J** |
| Hexachlorobenzene | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Hexachlorobutadiene | -- | 0.0054 U | 0.0056 U | 0.0055 U | 0.0054 U | 0.0053 U | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **1.5** | 0.01 U | 0.01 U |
| Naphthalene | 160 | **0.12** | **0.12** | **0.13** | **0.07** | **0.16** | **0.15** | **4.7** | **4.2** | **0.08** | **0.10** | **0.10** | **0.20** | **1.2** | **8.7** | **0.01 J** |
| Phenanthrene | -- | **0.14** | **0.05** | **0.06** | **0.01** | **0.04** | **0.04** | **0.31** | **0.31** | **0.03** | **0.13** | **0.02** | **0.04** | **5.6** | **0.15** | **0.02** |
| Pyrene | -- | **0.04** | **0.02** | **0.01** | **0.01 J** | **0.02** | **0.05** | **0.02** | **0.02** | **0.01** | **0.05** | **0.01** | **0.02** | **11** | **0.07** | **0.01 J** |
| Total PAHs (U=1/2) | -- | **0.55** | **0.33** | **0.46** | **0.16** | **0.41** | **0.45** | **6.3** | **5.75** | **0.22** | **0.5** | **0.34** | **0.74** | **56.4** | **14.2** | **0.11** |

**Table 5**

**Summary of Year 2006 Investigation Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID | | DSI-01 | DSI-02 | DSI-03 | DSI-04 | DSI-05 | DSI-06 | DSI-07 | DSI-07 | DSI-08 | DSI-09 | DSI-10 | DSI-11 | DSI-12 | MW-4 | MW-5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | MTCA A | DSI01-GW | DSI02-GW | DSI03-GW | DSI04-GW | DSI05-GW | DSI06-GW | DSI07-GW | DSI57-GW | DSI08-GW | DSI09-GW | DSI10-GW | DSI11-GW | DSI12-GW | MW-4-GW-060929 | MW-5-GW-060929 |
| Sample Date | Industrial | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/27/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/28/2006 | 9/29/2006 | 9/29/2006 |
| **Volatiles (µg/L)** | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,1,1-Trichloroethane | 200 | **1.0** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,1,2,2-Tetrachloroethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,1,2-Trichloroethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,1-Dichloroethane | -- | **0.2** | 0.2 U | 0.2 U | 0.2 U | **0.2** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.4** | 0.6 U |
| 1,1-Dichloroethene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,1-Dichloropropene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,2,3-Trichloropropane | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 1.5 U |
| 1,2-Dibromo-3-chloropropane | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 1.5 U |
| 1,2-Dibromoethane | 0.01 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,2-Dichloroethane | 5 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,2-Dichloropropane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 1,3-Dichloropropane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 2,2-Dichloropropane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 2-Butanone | -- | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 3.0 U |
| 2-Chlorotoluene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 2-Hexanone | -- | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 9.0 U |
| 4-Chlorotoluene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 4-Isopropyltoluene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| 4-Methyl-2-pentanone | -- | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 3.0 U |
| Acetone | -- | **5.4** | **8.0** | **6.3** | **3.8** | 3.0 U | **3.8** | 3.0 U | 3.0 U | **5.5** | **4.7** | **4.7** | **6.3** | **6.3** | **4.1** | 9.0 U |
| Benzene | 5 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.2** | **0.6** | **180** | **210** | **0.3** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Bromobenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Bromochloromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Bromodichloromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Bromoform | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Bromomethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Carbon disulfide | -- | **0.2** | **0.6** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.3** | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Carbon tetrachloride | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Chloroethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Chloroform | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Chloromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| cis-1,2-Dichloroethene | -- | **0.5** | 0.2 U | **0.2** | **0.6** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| cis-1,3-Dichloropropene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Dibromochloromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Dibromomethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Dichlorodifluoromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Dichloromethane | 5 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | **0.3** | 0.9 U |
| Ethylbenzene | 700 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **10** | **11** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Isopropylbenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **25** | **28** | 0.2 U | 0.2 U | 0.2 U | **0.5** | **0.5** | 0.2 U | 0.6 U |
| n-Butylbenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **14** | **13** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| n-Propylbenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **94** | **110** | 0.2 U | 0.2 U | 0.2 U | **0.5** | **0.5** | 0.2 U | 0.6 U |

**Table 5**

**Summary of Year 2006 Investigation Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels**

| Location ID<br>Sample ID<br>Sample Date | MTCA A<br>Industrial | DSI-01<br>DSI01-GW<br>9/27/2006 | DSI-02<br>DSI02-GW<br>9/27/2006 | DSI-03<br>DSI03-GW<br>9/27/2006 | DSI-04<br>DSI04-GW<br>9/27/2006 | DSI-05<br>DSI05-GW<br>9/27/2006 | DSI-06<br>DSI06-GW<br>9/27/2006 | DSI-07<br>DSI07-GW<br>9/28/2006 | DSI-07<br>DSI57-GW<br>9/28/2006 | DSI-08<br>DSI08-GW<br>9/28/2006 | DSI-09<br>DSI09-GW<br>9/28/2006 | DSI-10<br>DSI10-GW<br>9/28/2006 | DSI-11<br>DSI11-GW<br>9/28/2006 | DSI-12<br>DSI12-GW<br>9/28/2006 | MW-4<br>MW-4-GW-060929<br>9/29/2006 | MW-5<br>MW-5-GW-060929<br>9/29/2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| sec-Butylbenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **8.2** | **8.5** | 0.2 U | 0.2 U | 0.2 U | **0.2** | **0.2** | 0.2 U | 0.6 U |
| Styrene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| tert-Butylbenzene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.5** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| tert-Butylmethylether | 20 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Tetrachloroethene | 5 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Toluene | 1000 | **0.5** | **0.7** | **0.6** | **0.5** | **0.4** | **0.4** | **4.4** | **4.6** | **0.4** | **0.4** | **0.7** | **0.5** | **0.4** | 0.2 U | 0.6 U |
| trans-1,2-Dichloroethene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| trans-1,3-Dichloropropene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Trichloroethene | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Trichlorofluoromethane | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| Vinyl chloride | 0.2 | 0.2 U | 0.2 U | 0.2 U | **0.6** | **0.3** | 0.2 U | 0.2 U | 0.2 U | **0.4** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.6 U |
| m,p-Xylenes | 1000 | 0.4 U | **0.5** | **0.5** | 0.4 U | 0.4 U | **0.4** | **6.4** | **7.1** | 0.4 U | 0.4 U | 0.4 U | **0.5** | **0.5** | 0.4 U | 1.2 U |
| o-Xylene | -- | 0.2 U | **0.2** | **0.2** | 0.2 U | 0.2 U | **0.2** | 0.2 U | **0.9** | 0.2 U | 0.2 U | 0.2 U | **0.3** | **0.3** | 0.2 U | 0.6 U |

Qualifiers:

| | |
|---|---|
| N | Normal field sample |
| FD | Field duplicate |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| U | The analyte was analyzed for, but not detected above the sample reporting limit. |
| | Denotes criteria exceedance |
| **Bold** | Denotes detections |

Notes:

| | |
|---|---|
| -- | No numerical criterion of this type or sample not analyzed for this chemical. |
| MTCA | Model Toxics Control Act (WAC 173-340) |
| HPAH | High molecular weight polycyclic aromatic hydrocarbon |
| LPAH | Low molecular weight polycyclic aromatic hydrocarbon |
| mg/L | milligrams per liter |
| µg/L | micrograms per liter |
| 1 | If benzene is present, the cleanup level is 800 mg/L. If benzene is not present, the cleanup level is 1,000 mg/L. |
| 2 | Due to turbidity in tested groundwater samples, the groundwater data for dissolved metals are used for comparison to groundwater cleanup levels. Total metals data are provided for information purposes, but are not considered representative of groundwater quality. |

**Table 6**

**Summary of Year 2006 Investigation Analytical Results for Selected Soil Samples (Organic Carbon Normalized) and Comparison with Washington Sediment Management Standards**

| Location ID<br>Sample ID<br>Sample Date<br>Depth Interval | SMS<br>SQS | SMS<br>CSL | DSI-09<br>DSI09-SO-A<br>9/28/2006<br>0-3 ft | DSI-09<br>DSI09-SO-B<br>9/28/2006<br>3-5 ft | DSI-10<br>DSI10-SO-A<br>9/28/2006<br>0-3 ft | DSI-10<br>DSI10-SO-B<br>9/28/2006<br>3-5 ft | DSI-11<br>DSI11-SO-A<br>9/28/2006<br>0-3 ft | DSI-11<br>DSI11-SO-B<br>9/28/2006<br>3-5 ft | DSI-12<br>DSI12-SO-A<br>9/28/2006<br>0-3 ft | DSI-12<br>DSI12-SO-B<br>9/28/2006<br>3-5 ft | DSI-22<br>DSI22-CB-060929<br>9/29/2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Conventionals (%)** | | | | | | | | | | | |
| Total solids | -- | -- | **92.60** | **89.60** | **69.70** | **95.30** | **76.10** | **93.70** | **87.70** | **86.70** | **67.00** |
| Total Organic Carbon | -- | -- | **0.939** | **2.35** | **1.30** | **0.147** | **1.34** | **0.099** | **1.25** | **1.12** | **3.28** |
| **Metals (mg/kg)** | | | | | | | | | | | |
| Arsenic | 57 | 93 | **3.7** | **20.2** | **6.2** | **1.9** | **4.4** | **1.4** | **17.1** | **3.3** | **29.7 J** |
| Cadmium | 5.1 | 6.7 | **0.3** | **8.5 * #** | 0.3 U | 0.2 U | **0.3** | 0.2 U | **0.2** | 0.2 U | **2** |
| Chromium | 260 | 270 | **17.4** | **36** | **20.2** | **14.2** | **17.1** | **11.4** | **20.1** | **15.5** | **87** |
| Chromium VI | | | 0.117 UJ | 0.124 UJ | 0.157 UJ | 0.117 UJ | **2.05 J** | 0.120 UJ | 0.125 UJ | 0.123 UJ | -- |
| Copper | 390 | 390 | **65.9** | **3310 * #** | **29.0** | **8.8** | **49.0** | **8.4** | **34.2** | **18.1** | **2450 * #** |
| Lead | 450 | 530 | **118** | **4940 * #** | **8** | **11** | **92** | 2 U | **20** | **6** | **350 J** |
| Mercury | 0.41 | 0.59 | **0.31** | **0.18** | **0.11** | 0.04 U | **0.76 * #** | 0.04 U | **0.08** | 0.05 U | **1.05 * #** |
| Silver | 6.1 | 6.1 | 0.3 U | **1.2** | 0.4 U | 0.3 U | 0.4 U | 0.3 U | 0.3 U | 0.3 U | 2 U |
| Zinc | 410 | 960 | **115** | **5840 * #** | **43.7** | **25.2** | **78.3** | **23.0** | **77.4** | **36.8** | **2600 * #** |
| **PCBs (mg/kg-OC)** | | | | | | | | | | | |
| Total PCBs (SMS) | 12 | 65 | 1.02 U | 0.417 U | 0.754 U | 6.39 U | **2.61** | 10 U | 2.32 U | 2.59 U | 11.9 U |
| **LPAH (mg/kg-OC)** | | | | | | | | | | | |
| Naphthalene | 99 | 170 | **7.88** | **2.47** | **0.562** | 3.4 U | **1.79** | 4.85 U | **27.2** | **42** | **12.5** |
| Acenaphthylene | 66 | 66 | **1.49** | **0.23** | 0.369 U | 3.4 U | **1.04** | 4.85 U | **70.4 * #** | **152 * #** | 1.8 U |
| Acenaphthene | 16 | 57 | **8.73** | **1.28** | 0.369 U | 3.4 U | **0.515** | 4.85 U | 2.96 U | **4.02** | **22.6 J *** |
| Fluorene | 23 | 79 | **9.37** | **1.49** | **0.562** | 3.4 U | **0.59** | 4.85 U | **5.36** | **4.73** | **17.7** |
| Phenanthrene | 100 | 480 | **39.4** | **5.96** | **2.08** | 3.4 U | **4.03** | 4.85 U | **40.8** | **57.1** | **67.1** |
| Anthracene | 220 | 1200 | **9.27** | **0.809** | **0.846** | 3.4 U | **1.34** | 4.85 U | **23.2** | **40.2** | **13.4** |
| 2-Methylnaphthalene | 38 | 64 | **5.01** | **1.45** | **0.6** | 3.4 U | **1.42** | 4.85 U | **18.4** | **26.8** | **4.88** |
| Total LPAH (SMS) | 370 | 780 | **76.1** | **12.2** | **4.05** | 3.4 U | **9.33** | 4.85 U | **167** | **300** | **133** |
| **HPAH (mg/kg-OC)** | | | | | | | | | | | |
| Fluoranthene | 160 | 1200 | **51.1** | **3.87** | **4.69** | 3.4 U | **8.96** | 4.85 U | **200 *** | **536 *** | **97.6** |
| Pyrene | 1000 | 1400 | **42.6** | **4.68** | **3.92** | 3.4 U | **8.96** | 4.85 U | **320** | **893** | **79.3 J** |
| Benzo(a)anthracene | 110 | 270 | **17** | **1.15** | **1.38** | 3.4 U | **4.03** | 4.85 U | **144 *** | **321 * #** | **14.6** |
| Chrysene | 110 | 460 | **29.8** | **2.3** | **1.77** | 3.4 U | **6.49** | 4.85 U | **240 *** | **670 * #** | **39.6** |
| Benzo(a)pyrene | 99 | 210 | **19.2** | **0.979** | **1.15** | 3.4 U | **4.55** | 4.85 U | **240 * #** | **705 * #** | **21** |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | **11.7** | **0.4** | **0.485** | 3.4 U | **2.61** | 4.85 U | **96 * #** | **241 * #** | **8.54** |
| Dibenzo(a,h)anthracene | 12 | 33 | **4.05** | 0.213 U | 0.369 U | 3.4 U | **0.627** | 4.85 U | **31.2 *** | **80.4 * #** | **2.44** |
| Benzo(g,h,i)perylene | 31 | 78 | **11.7** | **0.421** | **0.485** | 3.4 U | **2.76** | 4.85 U | **104 * #** | **259 * #** | **9.76** |
| Total benzofluoranthenes (SMS) | 230 | 450 | **50.1** | **2.6** | **2.92** | 3.4 U | **10.4** | 4.85 U | **304 *** | **804 * #** | **50.9** |
| Total HPAH (SMS) | 960 | 5300 | **237** | **16.4** | **16.8** | 3.4 U | **49.4** | 4.85 U | **1679 *** | **4509 *** | **324** |
| **Chlorinated Hydrocarbons (mg/kg-OC)** | | | | | | | | | | | |
| 1,4-Dichlorobenzene | 3.1 | 9 | 0.106 U | 0.0426 UJ- | 0.0923 U | 0.68 U | 0.0821 U | 1.11 U | 0.08 U | 0.0982 U | 1.8 U |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | 0.106 U | 0.0426 UJ- | 0.0923 U | 0.68 U | 0.0821 U | 1.11 U | 0.08 U | 0.0982 U | 1.8 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | 0.554 U | 0.213 UJ- | 0.462 U | 3.47 U | 0.418 U | 5.35 U | 0.392 U | 0.482 U | 1.8 U |
| Hexachlorobenzene | 0.38 | 2.3 | 0.17 U | 0.0681 U | 0.123 U | 1.16 U | 0.119 U | 1.62 UJ | 0.128 U | 0.143 U | 1.8 U |

**Table 6**

**Summary of Year 2006 Investigation Analytical Results for Selected Soil Samples (Organic Carbon Normalized) and Comparison with Washington Sediment Management Standards**

| Location ID<br>Sample ID<br>Sample Date<br>Depth Interval | SMS<br>SQS | SMS<br>CSL | DSI-09<br>DSI09-SO-A<br>9/28/2006<br>0-3 ft | DSI-09<br>DSI09-SO-B<br>9/28/2006<br>3-5 ft | DSI-10<br>DSI10-SO-A<br>9/28/2006<br>0-3 ft | DSI-10<br>DSI10-SO-B<br>9/28/2006<br>3-5 ft | DSI-11<br>DSI11-SO-A<br>9/28/2006<br>0-3 ft | DSI-11<br>DSI11-SO-B<br>9/28/2006<br>3-5 ft | DSI-12<br>DSI12-SO-A<br>9/28/2006<br>0-3 ft | DSI-12<br>DSI12-SO-B<br>9/28/2006<br>3-5 ft | DSI-22<br>DSI22-CB-060929<br>9/29/2006 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phthalates (mg/kg-OC)** | | | | | | | | | | | |
| Dimethylphthalate | 53 | 53 | -- | -- | -- | -- | -- | -- | -- | -- | 1.8 U |
| Diethylphthalate | 61 | 110 | -- | -- | -- | -- | -- | -- | -- | -- | 1.8 U |
| Di-n-butylphthalate | 220 | 1700 | -- | -- | -- | -- | -- | -- | -- | -- | **5.49** |
| Butylbenzylphthalate | 4.9 | 64 | -- | -- | -- | -- | -- | -- | -- | -- | **14.3 *** |
| bis(2-Ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | -- | -- | -- | -- | **488 * #** |
| Di-n-octylphthalate | 58 | 4500 | -- | -- | -- | -- | -- | -- | -- | -- | **24.4** |
| **Misc Extractables (mg/kg-OC)** | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | **3.41** | **0.766** | **0.523** | 3.4 U | **0.59** | 4.85 U | 2.96 U | 3.39 U | **14.6** |
| Hexachlorobutadiene | 3.9 | 6.2 | 0.17 U | 0.0681 U | 0.123 U | 1.16 U | 0.119 U | 1.62 UJ | 0.128 U | 0.143 U | 1.8 U |
| n-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | -- | -- | -- | -- | 3.96 UJ |
| **Phenols (µg/kg)** | | | | | | | | | | | |
| Phenol | 420 | 1200 | -- | -- | -- | -- | -- | -- | -- | -- | **140 J** |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | -- | -- | -- | -- | 59 U |
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | -- | -- | -- | -- | **96** |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | -- | -- | -- | -- | 59 U |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | -- | -- | -- | -- | 290 UJ |
| **Misc Extractables (µg/kg)** | | | | | | | | | | | |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | -- | -- | -- | -- | 240 U |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | -- | -- | -- | -- | 590 U |
| Dibenzofuran | -- | -- | **32** | **18** | **6.8** | 5.0 U | **7.9** | 4.8 U | 37 U | 38 U | **480** |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 59 U |
| Hexachlorobutadiene | -- | -- | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 UJ | 1.6 U | 1.6 U | 59 U |
| n-Nitrosodiphenylamine | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 130 UJ |

**Table 6**

**Summary of Year 2006 Investigation Analytical Results for Selected Soil Samples (Organic Carbon Normalized) and Comparison with Washington Sediment Management Standards**

Qualifiers:

| | |
|---|---|
| N | normal field sample |
| FD | field duplicate |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| U | The analyte was analyzed for, but not detected above the sample reporting limit. |
| | Denotes criteria exceedance |
| * | Exceeds SQS criteria |
| # | Exceeds CSL criteria |
| **Bold** | Denotes detections |

Notes:

| | |
|---|---|
| -- | No numerical criterion of this type or sample not analyzed for this chemical. |
| HPAH | High molecular weight polycyclic aromatic hydrocarbon |
| LPAH | Low molecular weight polycyclic aromatic hydrocarbon |
| SMS | Sediment Management Standards (WAC 173-204) |
| SQS | Sediment Quality Standards (WAC 173-204-320) |
| CSL | Cleanup Screening Level (WAC 173-204-520) |
| mg/kg | miligrams per kilogram |
| µg/kg | micrograms per kilogram |
| OC | organic carbon normalized |

Where laboratory analysis indicates a chemical is not detected in a sediment sample, the detection limit will be reported, except as noted. Where chemical criteria in this table represent the sums of individual compounds (e.g., total LPAHs and total HPAHs), isomers (e.g., total benzofluoranthenes), or groups of aroclors/congeners (e.g., total PCBs), and a chemical analysis identifies an undetected value for one or more individual compounds, isomers, or groups of congeners, the SMS require that the sum of the detected values should be used as the sum of the respective compounds or groups of isomers or aroclors/congeners. If all values are undetected, then the highest detection limit should be used as the sum of the respective compounds or groups of isomers or aroclors/congeners.

The listed values represent concentrations in parts per million (ppm) “normalized” on a total organic carbon (TOC) basis. To normalize to TOC, the dry-weight concentration for each parameter is divided by the decimal fraction representing the percent TOC content of the sediment.

The total LPAH criteria will be compared to the sum of the concentrations of the following LPAH compounds: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, and anthracene. 2‑methylnaphthalene is not included in the LPAH definition under the SMS. Inclusion of 2-methylnaphthalene in the LPAH definition under the SMS is being considered. The total LPAH criteria are not the sums of the corresponding criteria listed for the individual LPAH compounds.

The total HPAH criteria will be compared to the sum of the concentrations of the following HPAH compounds: fluoranthene, pyrene, benz[a]-anthracene, chrysene, total benzo-fluoranthenes, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenz[a,h]anthracene, and benzo-[g,h,i]-perylene. The total HPAH criteria are not the sums of the corresponding criteria listed for the individual HPAH compounds.

The total benzofluoranthenes criteria will be compared to the sums of the concentrations of the b, j, and k isomers of benzofluoranthene.

**Table 7**

**Summary of Year 2006 Investigation Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria**

| Location ID<br>Sample ID<br>Sample Date | Washington Marine Chronic | Washington Marine Acute | DSI-06<br>DSI06-GW<br>9/27/2006 | DSI-07<br>DSI07-GW<br>9/28/2006 | DSI-07<br>DSI57-GW<br>9/28/2006 | DSI-08<br>DSI08-GW<br>9/28/2006 | DSI-09<br>DSI09-GW<br>9/28/2006 | DSI-10<br>DSI10-GW<br>9/28/2006 | DSI-11<br>DSI11-GW<br>9/28/2006 | DSI-12<br>DSI12-GW<br>9/28/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| **TPH (mg/L)** | | | | | | | | | | |
| TPH - Gasoline Range | -- | -- | 0.25 U | **2.0** | **2.2** | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| TPH - Diesel Range | -- | -- | 0.25 U | **1.9** | **1.9** | 0.25 U | 0.25 U | 0.25 U | **3.2** | **0.63** |
| TPH - Motor Oil Range | -- | -- | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| **Metals-dissolved (µg/L)** | | | | | | | | | | |
| Arsenic | 36 | 69 | **1.8** | **3.8** | **4.2** | **1.4** | **1.6** | **0.8** | **0.8** | **5.0** |
| Cadmium | 9.3 | 42 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chromium | -- | -- | 0.5 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U | 0.5 U |
| Copper | 3.1 | 4.8 | 0.5 U | **0.6** | **1.1** | **0.7** | **0.9** | 0.5 U | 0.5 U | 0.5 U |
| Lead | 8.1 | 210 | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Mercury | 0.025 | 1.8 | 0.1 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U |
| Silver | -- | 1.9 | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Zinc | 81 | 90 | **5** | **6** | **7** | 4 U | **44** | **7** | **8** | 4 U |
| **Metals-total (µg/L)** | | | | | | | | | | |
| Arsenic | -- | -- | **2.3** | **9.5** | **7.2** | **11.8** | **2.6** | **2.4** | **6.7** | **32.5** |
| Cadmium | -- | -- | 0.2 U | 0.2 U | 0.2 U | **0.3** | 0.2 U | **0.3** | **1.6** | **0.3** |
| Chromium | -- | -- | 2 U | **21** | **14** | **37** | 5 U | **5** | **34** | **20** |
| Copper | -- | -- | **7.5** | **39.1** | **24** | **70.4** | **34.4** | **26.1** | **49.2** | **126** |
| Lead | -- | -- | **2** | **6** | **5** | **12** | **55** | **14** | **10** | **27** |
| Mercury | -- | -- | 0.1 U | 0.10 U | 0.10 U | **0.12** | 0.10 U | 0.10 U | 0.10 U | **0.12** |
| Silver | -- | -- | 0.2 U | 0.2 U | 0.2 U | **0.4** | **0.2** | 0.2 U | 0.2 U | **0.2** |
| Zinc | -- | -- | **9** | **61** | **42** | **103** | **98** | **19** | **154** | **109** |
| **Pesticides (µg/L)** | | | | | | | | | | |
| 4,4'-DDD | 0.001 | 0.13 | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| 4,4'-DDE | 0.001 | 0.13 | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| 4,4'-DDT | 0.001 | 0.13 | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Total DDT (U=1/2) | -- | -- | 0.017 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U |
| Aldrin | 0.0019 | 0.71 | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| alpha-BHC | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| beta-BHC | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |

**Table 7**

**Summary of Year 2006 Investigation Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria**

| Location ID<br>Sample ID<br>Sample Date | Washington Marine Chronic | Washington Marine Acute | DSI-06<br>DSI06-GW<br>9/27/2006 | DSI-07<br>DSI07-GW<br>9/28/2006 | DSI-07<br>DSI57-GW<br>9/28/2006 | DSI-08<br>DSI08-GW<br>9/28/2006 | DSI-09<br>DSI09-GW<br>9/28/2006 | DSI-10<br>DSI10-GW<br>9/28/2006 | DSI-11<br>DSI11-GW<br>9/28/2006 | DSI-12<br>DSI12-GW<br>9/28/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| delta-BHC | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| gamma-BHC (Lindane) | -- | 0.16 | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.018 U |
| alpha-Chlordane | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| gamma-Chlordane | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Dieldrin | 0.0019 | 0.71 | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endosulfan I | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Endosulfan II | -- | -- | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endosulfan Sulfate | -- | -- | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin | 0.0023 | 0.037 | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin aldehyde | -- | -- | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Endrin ketone | -- | -- | 0.011 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| Heptachlor | 0.0036 | 0.053 | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Heptachlor Epoxide | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Methoxychlor | -- | -- | 0.055 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Toxaphene | 0.0002 | 0.21 | 0.55 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U |
| **PCBs (µg/L)** | | | | | | | | | | |
| Aroclor 1016 | -- | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1221 | -- | -- | 0.020 U | 0.080 U | 0.080 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1232 | -- | -- | 0.020 U | 0.040 U | 0.080 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1242 | -- | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1248 | -- | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1254 | -- | -- | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Aroclor 1260 | -- | -- | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 U | 0.020 UJ | 0.020 UJ | 0.020 UJ | 0.020 UJ |
| Total PCBs (U=1/2) | 0.03 | 10 | 0.07 U | 0.11 U | 0.13 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U | 0.07 U |
| **SVOCs (µg/L)** | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | -- | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2,4-Trichlorobenzene | -- | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2,4-Trimethylbenzene | -- | -- | 0.2 U | **24** | **26** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,2-Dichlorobenzene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,3,5-Trimethylbenzene | -- | -- | 0.2 U | **10** | **12** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |

**Table 7**

**Summary of Year 2006 Investigation Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria**

| Location ID<br>Sample ID<br>Sample Date | Washington Marine Chronic | Washington Marine Acute | DSI-06<br>DSI06-GW<br>9/27/2006 | DSI-07<br>DSI07-GW<br>9/28/2006 | DSI-07<br>DSI57-GW<br>9/28/2006 | DSI-08<br>DSI08-GW<br>9/28/2006 | DSI-09<br>DSI09-GW<br>9/28/2006 | DSI-10<br>DSI10-GW<br>9/28/2006 | DSI-11<br>DSI11-GW<br>9/28/2006 | DSI-12<br>DSI12-GW<br>9/28/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,4-Dichlorobenzene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 2-Methylnaphthalene | -- | -- | 0.06 U | **32** | **28** | 0.06 U | 0.08 U | 0.06 U | 0.07 U | **0.47** |
| Acenaphthene | -- | -- | **0.09** | **0.54** | **0.53** | **0.01 J** | **0.05** | **0.11** | **0.22** | **2.2** |
| Acenaphthylene | -- | -- | **0.01 J** | **0.06** | **0.06** | 0.01 U | 0.01 U | 0.01 U | **0.02** | **1.8** |
| Anthracene | -- | -- | **0.01 J** | **0.03** | **0.03** | **0.01 J** | **0.02** | 0.01 U | **0.01** | **2.6** |
| Benzo(a)anthracene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01** | 0.01 U | 0.01 U | **3.4** |
| Benzo(a)pyrene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | **3.5** |
| Benzo(b)fluoranthene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | **0.01 J** | 0.01 U | **2.0** |
| Benzo(g,h,i)perylene | -- | -- | 0.01 U | **0.01 J** | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | 0.01 U | **1.9** |
| Benzo(k)fluoranthene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.01 J** | **0.01 J** | 0.01 U | **2.2** |
| Chrysene | -- | -- | **0.01 J** | **0.01 J** | **0.01 J** | **0.01 J** | **0.02** | **0.02** | **0.01 J** | **5.0** |
| Dibenzo(a,h)anthracene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **0.65** |
| Dibenzofuran | -- | -- | **0.01 J** | **0.14** | **0.14** | **0.01 J** | **0.01 J** | 0.01 U | **0.03** | **0.44** |
| Fluoranthene | -- | -- | **0.03** | **0.02** | **0.02** | **0.02** | **0.04** | **0.01 J** | **0.03** | **8.5** |
| Fluorene | -- | -- | **0.03** | **0.57** | **0.54** | **0.01 J** | **0.03** | **0.01 J** | **0.16** | **3.3** |
| Hexachlorobenzene | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Hexachlorobutadiene | -- | -- | 0.0055 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U | 0.0050 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | **1.5** |
| Naphthalene | -- | -- | **0.15** | **4.7** | **4.2** | **0.08** | **0.10** | **0.10** | **0.20** | **1.2** |
| Phenanthrene | -- | -- | **0.04** | **0.31** | **0.31** | **0.03** | **0.13** | **0.02** | **0.04** | **5.6** |
| Pyrene | -- | -- | **0.05** | **0.02** | **0.02** | **0.01** | **0.05** | **0.01** | **0.02** | **11** |
| Total PAHs (U=1/2) | -- | -- | **0.45** | **6.3** | **5.75** | **0.22** | **0.5** | **0.34** | **0.74** | **56.4** |
| **Volatiles (µg/L)** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1,1-Trichloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1,2,2-Tetrachloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1,2-Trichloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1-Dichloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1-Dichloroethene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |

**Table 7**

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| Location ID<br>Sample ID<br>Sample Date | Washington Marine Chronic | Washington Marine Acute | DSI-06<br>DSI06-GW<br>9/27/2006 | DSI-07<br>DSI07-GW<br>9/28/2006 | DSI-07<br>DSI57-GW<br>9/28/2006 | DSI-08<br>DSI08-GW<br>9/28/2006 | DSI-09<br>DSI09-GW<br>9/28/2006 | DSI-10<br>DSI10-GW<br>9/28/2006 | DSI-11<br>DSI11-GW<br>9/28/2006 | DSI-12<br>DSI12-GW<br>9/28/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloropropene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,2,3-Trichloropropane | -- | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2-Dibromo-3-chloropropan | -- | -- | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2-Dibromoethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,2-Dichloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,2-Dichloropropane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,3-Dichloropropane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 2,2-Dichloropropane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 2-Butanone | -- | -- | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| 2-Chlorotoluene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 2-Hexanone | -- | -- | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U |
| 4-Chlorotoluene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 4-Isopropyltoluene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 4-Methyl-2-pentanone | -- | -- | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Acetone | -- | -- | **3.8** | 3.0 U | 3.0 U | **5.5** | **4.7** | **4.7** | **6.3** | **6.3** |
| Benzene | -- | -- | **0.6** | **180** | **210** | **0.3** | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromobenzene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromochloromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromodichloromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromoform | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromomethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Carbon disulfide | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | **0.3** | 0.2 U | 0.2 U |
| Carbon tetrachloride | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chloroethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chloroform | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chloromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| cis-1,2-Dichloroethene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| cis-1,3-Dichloropropene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Dibromochloromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Dibromomethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |

## Table 7

## Summary of Year 2006 Investigation Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria

| Location ID<br>Sample ID<br>Sample Date | Washington Marine Chronic | Washington Marine Acute | DSI-06<br>DSI06-GW<br>9/27/2006 | DSI-07<br>DSI07-GW<br>9/28/2006 | DSI-07<br>DSI57-GW<br>9/28/2006 | DSI-08<br>DSI08-GW<br>9/28/2006 | DSI-09<br>DSI09-GW<br>9/28/2006 | DSI-10<br>DSI10-GW<br>9/28/2006 | DSI-11<br>DSI11-GW<br>9/28/2006 | DSI-12<br>DSI12-GW<br>9/28/2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Dichloromethane | -- | -- | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylbenzene | -- | -- | 0.2 U | **10** | **11** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Isopropylbenzene | -- | -- | 0.2 U | **25** | **28** | 0.2 U | 0.2 U | 0.2 U | **0.5** | **0.5** |
| n-Butylbenzene | -- | -- | 0.2 U | **14** | **13** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| n-Propylbenzene | -- | -- | 0.2 U | **94** | **110** | 0.2 U | 0.2 U | 0.2 U | **0.5** | **0.5** |
| sec-Butylbenzene | -- | -- | 0.2 U | **8.2** | **8.5** | 0.2 U | 0.2 U | 0.2 U | **0.2** | **0.2** |
| Styrene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| tert-Butylbenzene | -- | -- | 0.2 U | 0.2 U | **0.5** | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| tert-Butylmethylether | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Tetrachloroethene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Toluene | -- | -- | **0.4** | **4.4** | **4.6** | **0.4** | **0.4** | **0.7** | **0.5** | **0.4** |
| trans-1,2-Dichloroethene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| trans-1,3-Dichloropropene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Trichloroethene | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Trichlorofluoromethane | -- | -- | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Vinyl chloride | -- | -- | 0.2 U | 0.2 U | 0.2 U | **0.4** | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| m,p-Xylenes | -- | -- | **0.4** | **6.4** | **7.1** | 0.4 U | 0.4 U | 0.4 U | **0.5** | **0.5** |
| o-Xylene | -- | -- | **0.2** | 0.2 U | **0.9** | 0.2 U | 0.2 U | 0.2 U | **0.3** | **0.3** |

Qualifiers:

- N normal field sample
- FD field duplicate
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- U The analyte was analyzed for, but not detected above the sample reporting limit.
- Denotes criteria exceedance
- * Exceeds chronic criteria
- # Exceeds acute criteria
- **Bold** Denotes detections

Notes:

- -- No numerical criterion of this type for this chemical
- mg/L milligrams per liter
- µg/L micrograms per liter

**Table 8**
**Potentially Relevant Fate and Transport Processes**

| Fate & Transport Processes | Description and Applicability |
|---|---|
| **Processes Potentially Applicable to Upland Areas** | |
| **Transport Processes** | |
| Stormwater Entrainment | Potentially relevant only to catch basin solids or to contaminated surface soils not capped with clean soil or pavement (e.g., Rail Spur Area). |
| Soil Leaching | Soil contamination can leach to groundwater, resulting in groundwater impacts. Due to the age of the site, the potential leachability of site contmainants can be directly assessed using site groundwater data. |
| Groundwater Migration | Groundwater generally migrates toward the Duwamish River. Only petroleum and PAH compounds have been detected above screening levels in nearshore areas adjacent to the river. |
| Groundwater Extraction | City codes prohibit consumptive use of site groundwater. Groundwater extraction only considered significant potential risk if utility corridors installed with preferential drainage toward the river. |
| Vapor Migration | Potentially relevant only for vinyl chloride (Central Site Area) and for benzene (2000 UST Removal Area). Potential receptor would be future industrial user. |
| **Natural Attenuation Processes** | |
| Biodegradation | Biodegradation processes can effectively destroy organic compounds such as petroleum hydrocarbons, benzene and vinyl chloride. Biodegradation can also degrade PAH compounds, though with lower overall performance. |
| Geochemical Stabilization | Geochemical processes can precipitate inorganic constituents such as arsenic, reducing or preventing their transport through groundwater. |
| Tidally-Influenced Mixing | Groundwater mixing in nearshore areas occurs due to tidal influences, reducing the concentration of groundwater constituents prior to discharge of site groundwater into the sediment bioactive zone and surface water. |
| **Processes Potentially Applicable to Shoreline or Sediment Areas** | |
| **Transport Processes** | |
| Wind and Wave Erosion | Wind and wave erosion can cause resuspension of shallow sediments or erosion of river-bank soils, resulting in exposure of contaminated soils or sediments to the bioactive zone or water column. Erosional forces generally decrease with increasing water depth, and are significant mainly for intertidal and shallow sub-tidal areas. |
| River Scour | River scour can cause sediment or river-bank erosion, resulting in exposure of contaminated soils or sediments to the bioactive zone or water column. |
| Seismic Disturbances | Seismic events can cause instability of river-bank soils and/or sediments, resulting in exposure of contaminated soils or sediments to the bioactive zone or water column. |
| Prop Wash or Anchor Drag | Vessel navigation activity in waterway and/or berth areas can resuspend buried sediments through prop wash, anchor drag or vessel groundings. Such resuspension can re-expose contaminated sediments to aquatic receptors of the bioactive zone or within the water column. |

**Table 8**
**Potentially Relevant Fate and Transport Processes**

| Fate & Transport Processes | Description and Applicability |
|---|---|
| Construction Disturbances | Construction activities can disturb sediments or shoreline soils through dredging, bank cutting or structure removal. |
| **Natural Attenuation Processes** | |
| Sediment Deposition | Natural sediment deposition can bury contaminated sediments and isolate them from the water column and bioactive zone. |
| Contaminant Degradation and Weathering | The toxicity and mobility of sediment contaminants can be reduced through natural degradation and weathering processes. The extent of these processes is dependent on the type of contaminant and the conditions to which the contaminants are exposed. |

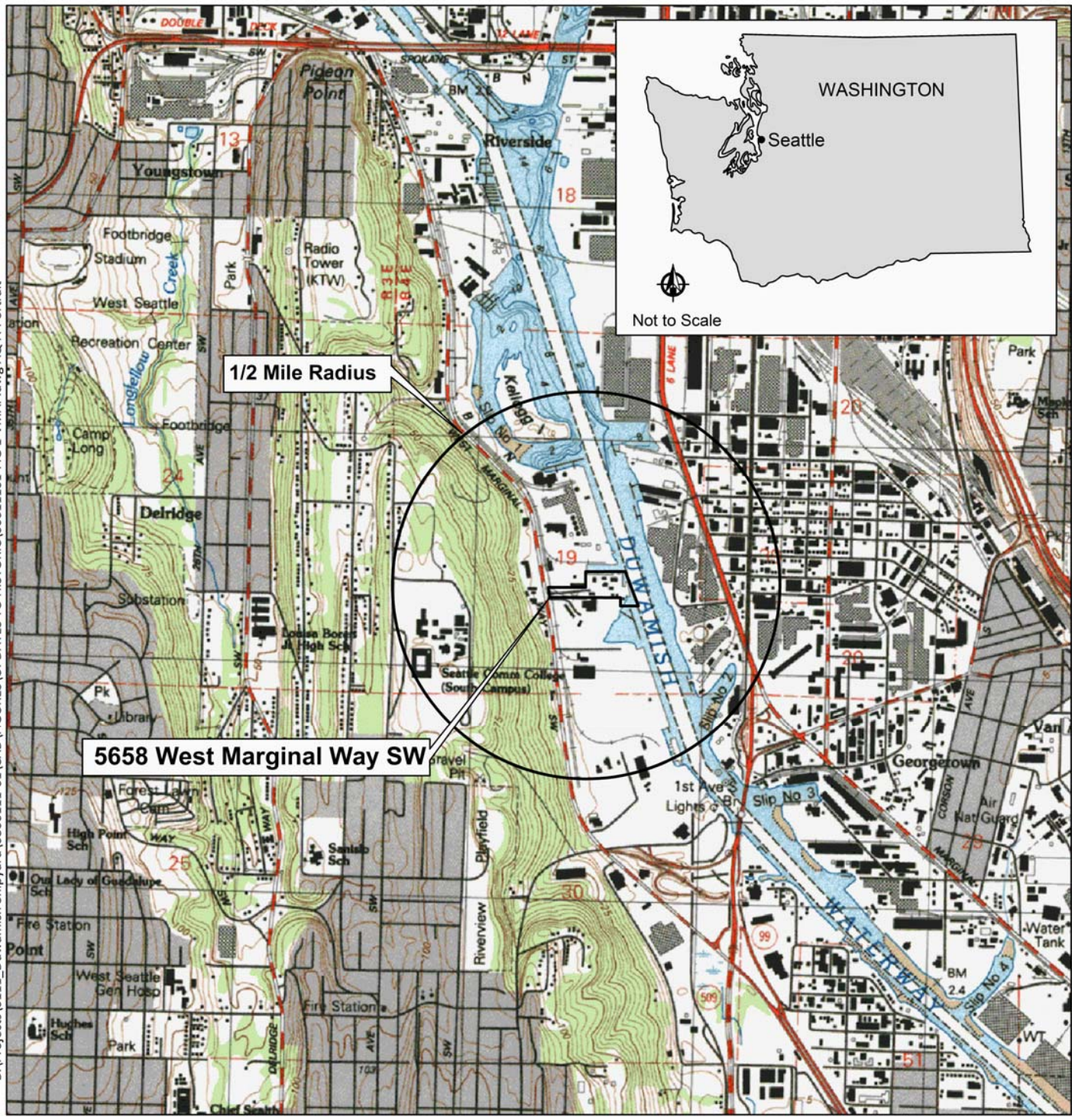
Notes:
This list of fate and transport processes is preliminary and is subject to change in response to new information.

**Table 9**

**Summary of Remedial Investigation Data Objectives and Design Data Needs**

| RI Component | Data Objective | Data Need | Remedial Investigaiton Components to Fill Identified Data Needs |
|---|---|---|---|
| **Nature and Extent - Upland** | | | |
| Soil Quality | Verifty Nature and Extent of Contamination | Reduce the uncertainty of the lateral and vertical extent of COCs | Perform soil sampling in areas identified during the 2006 investigation including: rail spur area, 2000 UST removal area, shipyard nearshore area, and Parcel D nearshore area. |
| Groundwater Quality | Verifty Nature and Extent of Contamination | Reduce the uncertainty of the lateral and vertical extent of COCs | Install monitoring wells and perform groundwater sampling in areas identified during the 2006 investigation including: rail spur area, 2000 UST removal area, shipyard nearshore area, and Parcel D nearshore area. |
| **Nature and Extent - Sediment** | | | |
| Surface Sediment Quality | Verifty Nature and Extent of Contamination | Reduce the uncertainty of the lateral extent of COCs | Perform surface sediment sampling in adjacent areas to the north, south, and east of the property. |
| Subsurface Sediment Quality | Verifty Nature and Extent of Contamination | Reduce the uncertainty of the lateral and vertical extent of COCs | Perform subsurface sediment sampling in adjacent areas to the north, south, and east of the property. |
| **Survey and Shoreline Stability Evaluation** | | | |
| Stormwater vault and UST Identification | Survey | Condition and location of existing stormwater vault and potential UST | Verify presence and features of potential stormwater vault and UST at the shipyard nearshore area. |
| Armored Slope Evaluation | Survey | Sediment slope stability | Evaluation of armored slope including testing, direct inspection, review of available records, and potential diver survey. |
| Bulkhead Assessment | Survey | Bulkhead integrity | Assessment of bulkhead by structural engineer. |
| Shoreline Geotechnical Stability | Shoreline stability and erosion | Evaluate existing shoreline conditions | Collect available information and perform a reconnaisance survey to assess shoreline stability. Perform geotechnical sampling at nearshore and slope areas. |
| **Fate and Transport Processes** | | | |
| Future Land Uses | Future property use | Identify future property use | Identify potential future property uses as part of property planning to inform RI activties. |
| Groundwater Gradients, Aquifer, and Geochemical Properties | Groundwater contaminant migration | Obtain additional information to evaluate groundwater properties | Perform gradient and tidal groundwater study from installed RI monitoring wells. Perform geochemical testing as part of groundwater sampling activities. |
| Wind, Wave, River Scour, propwash and Redeposition Processes | Sediment stability | Evaluate stability and potential transport of sediment | Collect available information to assess potential sediment stability and transport |

# FIGURES




B:\Projects\0111_Duwamish Shipyard\0800111-01\CAD\FIGURES\UPDATES TO HISTORIC\00011101-FIG 1-VMAP.dwg AQ-A-Portrait

Feb 05, 2010 6:02pm epipkin

**SOURCE**: Base map prepared from Terrain Navigator Pro, USGS 7.5 minute quadrangle map, South Seattle.

0 2000

Scale in Feet

ANCHOR QEA

**Figure 1**
Vicinity Map
Duwamish Shipyard, Inc.
Seattle, Washington

ALASKA MARINE LINES

GRAVING DOCK LOCATION

WEST MARGINAL WAY SOUTH

CONC. RETAINING WALL

Municipal Sanitary Sewer Line

Connection to Metro System

GLACIER NORTHWEST

CONCRETE

ASPHALT

ASPHALT COVERED CONCRETE

CONCRETE AND WOOD PILES AREA

CONCRETE ON OLD WOOD DOCK

WOOD PILES AREA

DRY DOCK WATERWAY

GRAVEL/BLACKBERRIES

003

004

CRANE RAILS

Paint Mixing Shed

Fixed Wood Wharf

100'

150'

DUWAMISH WATERWAY

CHANNEL LIMIT

Dry Dock No.1

BOLLARDS

Crane

Steel Shop

Pipe Shop

Machine Shop

UST

Spent Grit Storage

Shed

NORTHWEST AREA

Wastewater Treatment System

Winch House

Warehouse

Paint Mixing Shed

006

Outfall 005

Centrifugal Stormwater Separator System

005

Office

FORMER DUWAMISH SHIPYARD

214,287 S. F.

4.92 Acres

Saw

Former Side-Tracking Ways

Marine Railway

ADJACENT AQUATIC AREA

UST REMOVAL AREA

4 UST's

FORMER SHIPYARD NEARSHORE AREA

Fixed Wood Dock

Paint Mixing Shed

RAIL SPUR AREA

Electric and Joiner Shops

Spent Grit Storage

Haz. Waste Storage

Storage and Paint Shop

SOUTH PROPERTY AREA

Waste Oil

Solvent Sill

Bulkhead

Dry Dock No.2

Fixed Dock

14" Wood Beam

002

PARCEL D NEARSHORE AREA

Small Parts Blasting Shed

Floating Dock

B:\Projects\0111_Duwamish Shipyard\0800111-01\CAD\FIGURES\UPDATES TO HISTORIC\000111101-FIG2.dwg FIG2-AQ Style

Feb 09, 2010 3:00pm epipkin

**SURVEY SOURCE**: Bathymetric survey by Blue Water, 10/2006
Topographic survey by APS Survey and Mapping, LLC.
Underdock survey by AML and DSI, 12/2006

**HORIZONTAL DATUM**: Washington State Plane North, NAD83 Feet.
**VERTICAL DATUM**: Mean Lower Low Water (MLLW).

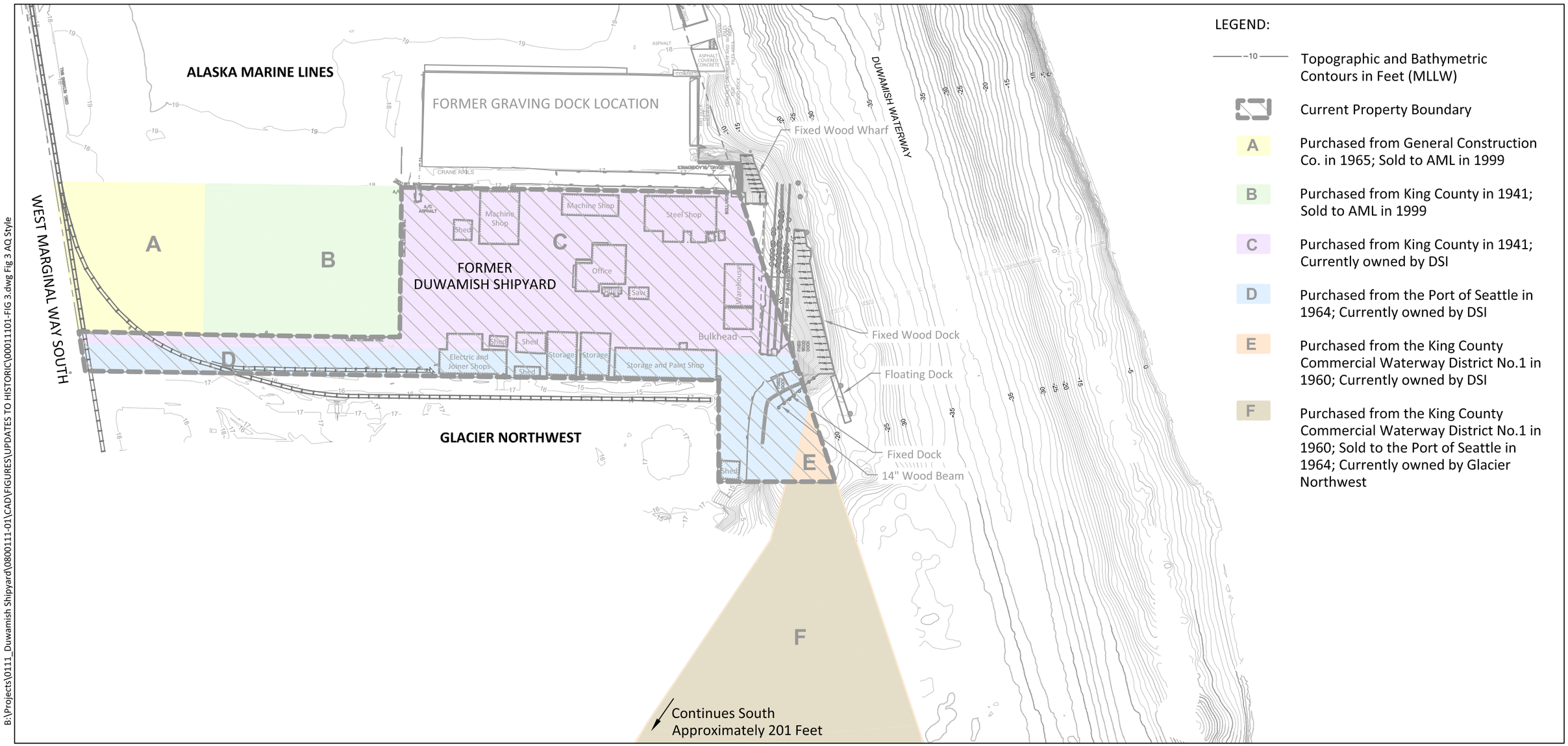
LEGEND:

- Former Stormwater Line
- Municipal Sanitary Sewer Line
- Top of Bank
- Subject Property Boundary
- Former NPDES Outfall
- Topographic and Bathymetric Contours in Feet (MLLW)
- Former Catch Basin Location

0 100
Scale in Feet

ANCHOR QEA

**Figure 2**
Historic Property and Operational Features
Duwamish Shipyard, Inc.
Seattle, Washington




LEGEND:

- Topographic and Bathymetric Contours in Feet (MLLW)
- Current Property Boundary
- A — Purchased from General Construction Co. in 1965; Sold to AML in 1999
- B — Purchased from King County in 1941; Sold to AML in 1999
- C — Purchased from King County in 1941; Currently owned by DSI
- D — Purchased from the Port of Seattle in 1964; Currently owned by DSI
- E — Purchased from the King County Commercial Waterway District No.1 in 1960; Currently owned by DSI
- F — Purchased from the King County Commercial Waterway District No.1 in 1960; Sold to the Port of Seattle in 1964; Currently owned by Glacier Northwest

**SURVEY SOURCE**:
Bathymetric survey by Blue Water, 10/2006.
Topographic survey by APS Survey and Mapping, LLC.
Underdock survey by AML and DSI, 12/2006.

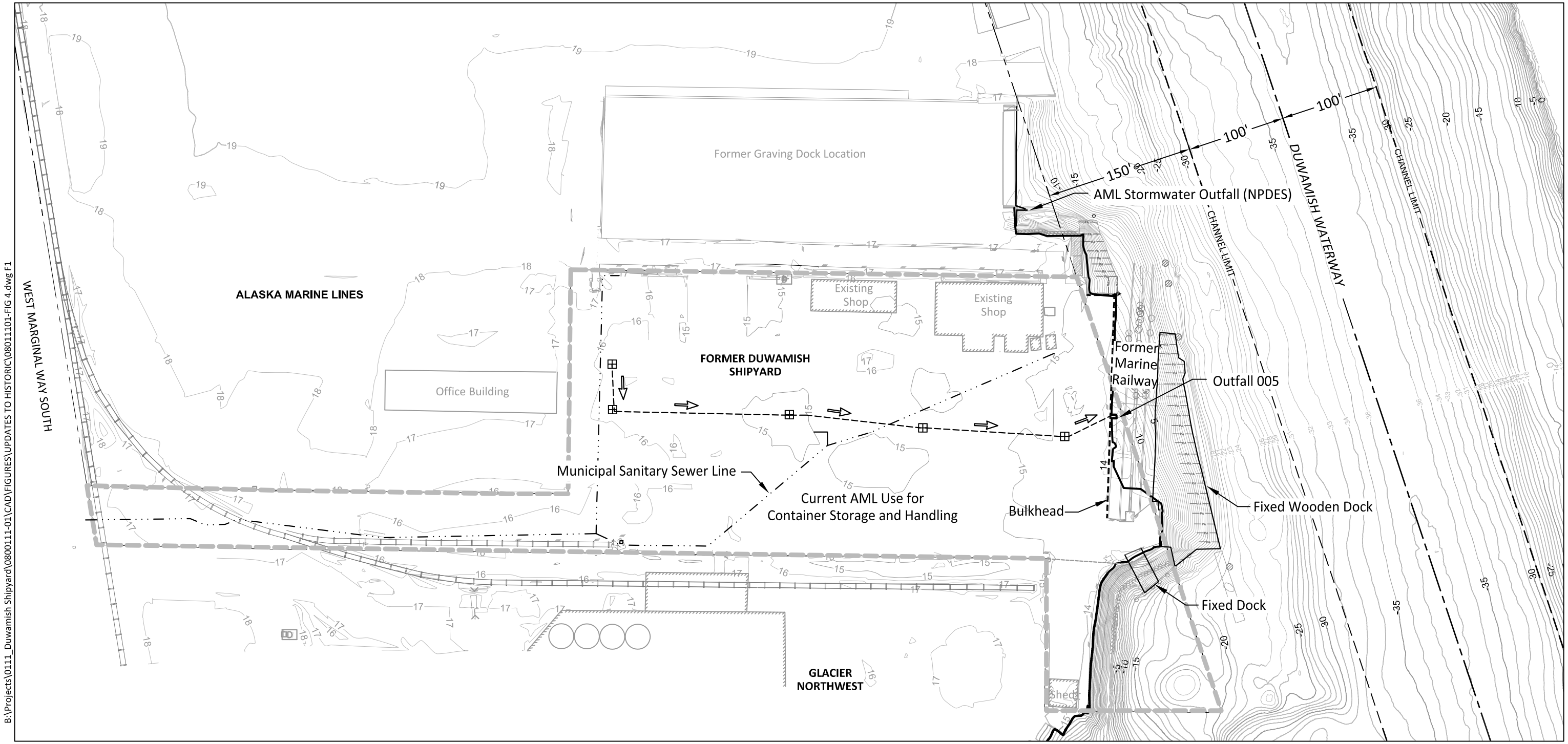
**HORIZONTAL DATUM**: Washington State Plane North, NAD83.
**VERTICAL DATUM**: Mean Lower Low Water (MLLW, Feet).

0 150
Scale in Feet

B:\Projects\0111_Duwamish Shipyard\0800111-01\CAD\FIGURES\UPDATES TO HISTORIC\000111101-FIG 3.dwg Fig 3 AQ Style
Feb 04, 2010 4:40pm epipkin

ANCHOR QEA

**Figure 3**
Historic Property Boundaries
Duwamish Shipyard, Inc.
Seattle, Washington




B:\Projects\0111_Duwamish Shipyard\0800111-01\CAD\FIGURES\UPDATES TO HISTORIC\080111101-FIG 4.dwg F1

Feb 09, 2010 2:43pm epipkin

**SURVEY SOURCE**:
Bathymetric survey by Blue Water, 10/2006.
Topographic survey by APS Survey and Mapping, LLC.
Underdock survey by AML and DSI, 12/2006.

**HORIZONTAL DATUM**: Washington State Plane North, NAD83.
**VERTICAL DATUM**: Mean Lower Low Water (MLLW, Feet).

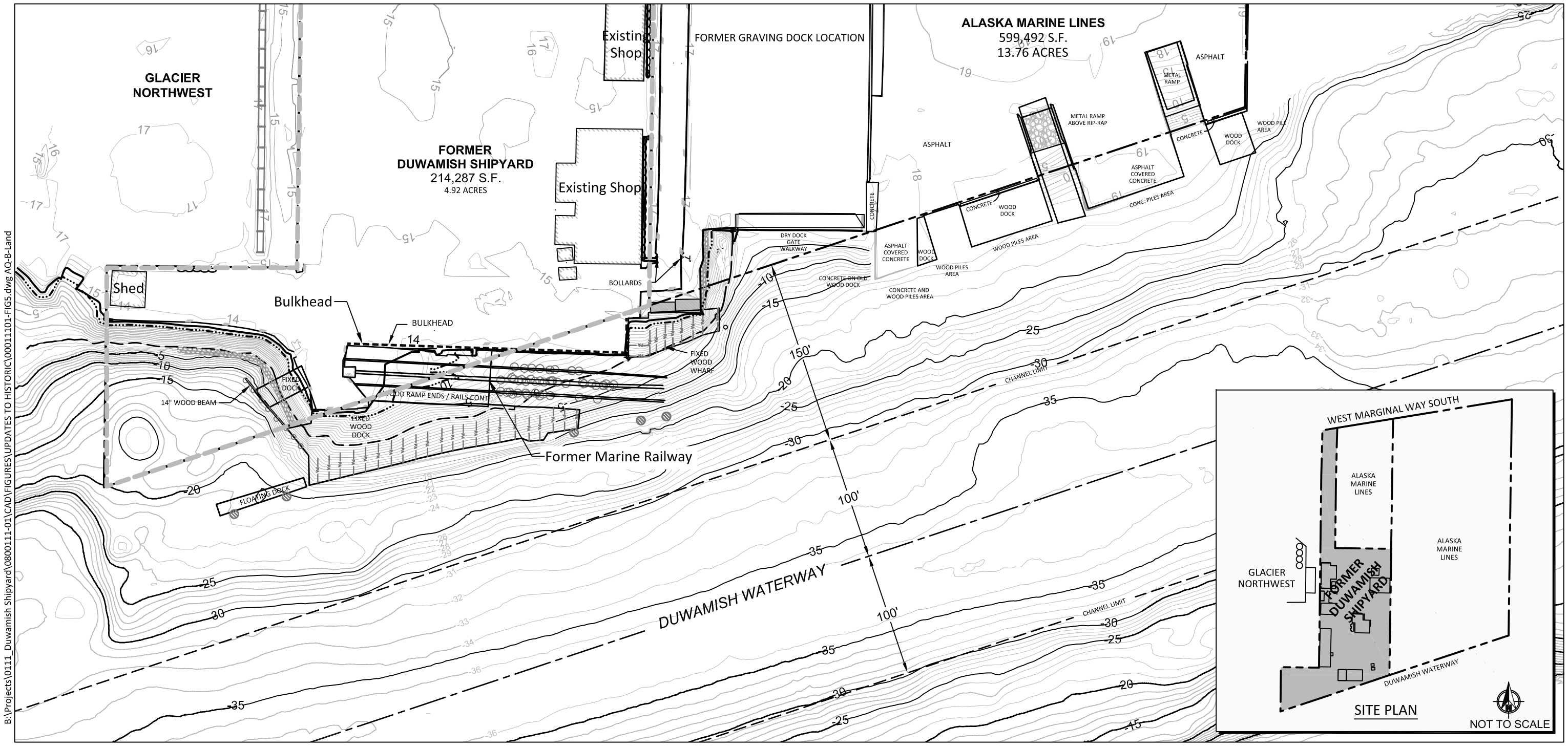
LEGEND

- As-Built Storm Line and Direction of Flow
- Municipal Sanitary Sewer Line
- Top of Bank
- Subject Property Boundary
- Topographic and Bathymetric Contours in Feet (MLLW)
- Former Catch Basin Location

0 100
Scale in Feet

ANCHOR QEA

**Figure 4**
Current Property and Features
Duwamish Shipyard, Inc.
Seattle, Washington




B:\Projects\0111_Duwamish Shipyard\0800111-01\CAD\FIGURES\UPDATES TO HISTORIC\000111101-FIG5.dwg AQ-B-Land

Feb 09, 2010 3:02pm epipkin

**HORIZONTAL DATUM**: Washington State Plane North, NAD83 Feet.
**VERTICAL DATUM**: Mean Lower Low Water (MLLW).

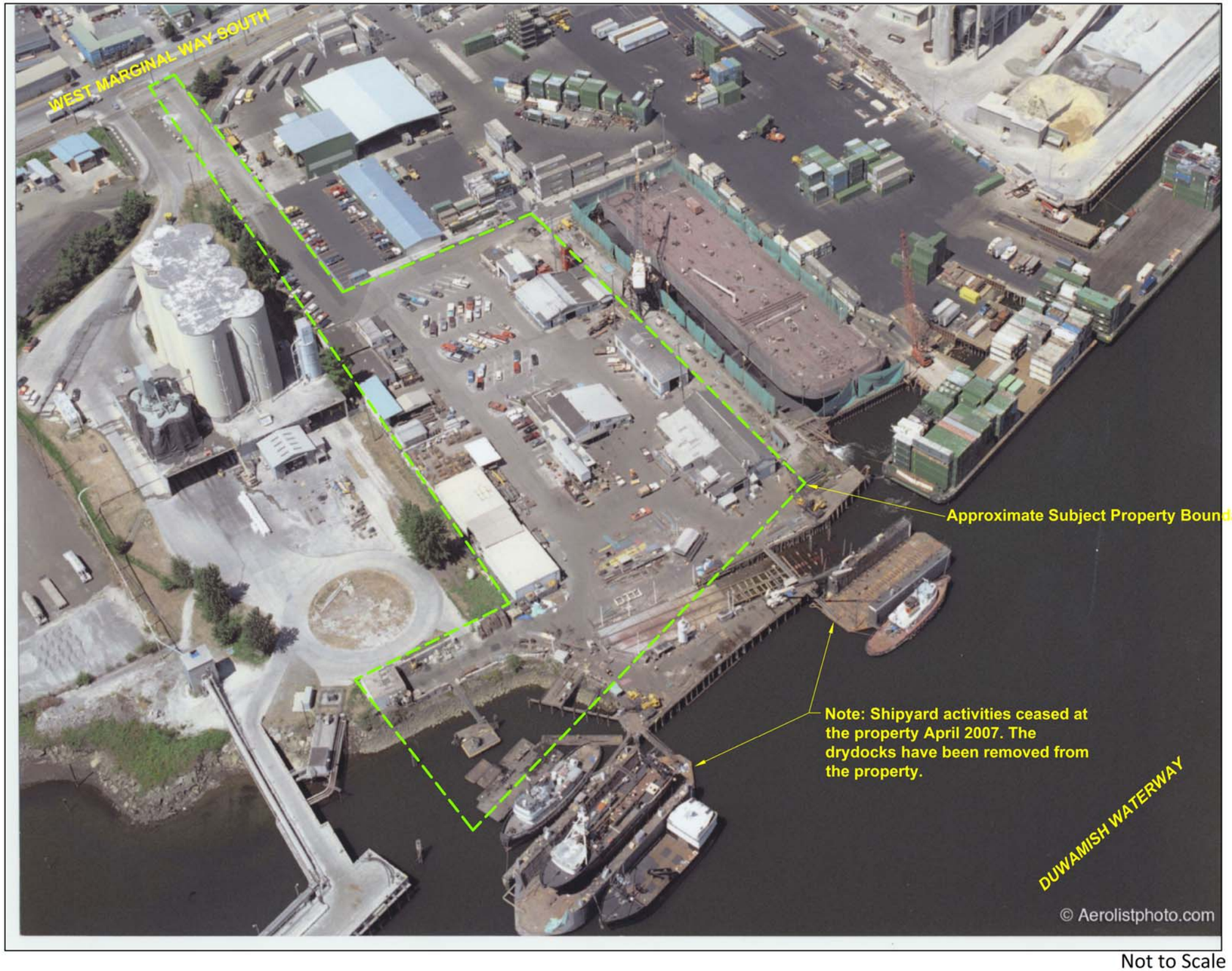
**NOTES**:
1. Area of overwater structures is approximately 11,750 S.F. (0.27ac).

**LEGEND**:
- Top of Bank (TOB)
- Mean Higher High Water (MHHW)
- Mean Lower Low Water (MLLW)
- Subject Property Boundary

0 1
Scale in Feet

ANCHOR QEA

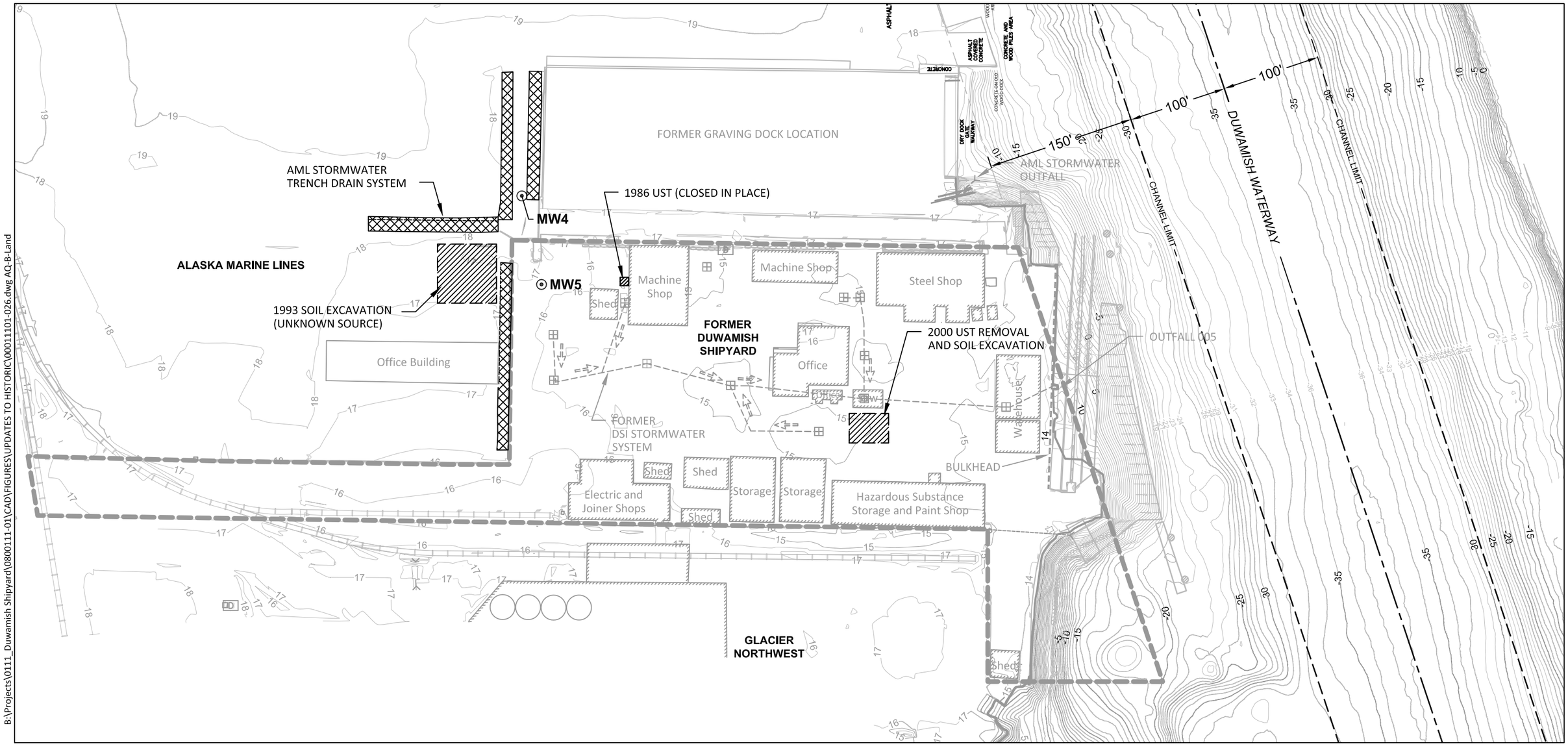
**Figure 5**
Existing Top of Bank Structures
Duwamish Shipyard, Inc.
Seattle, Washington




Not to Scale

**Figure 6**
Oblique Aerial Photograph Showing Shoreline Structures - 1994
Duwamish Shipyard, Inc.
Seattle, Washington

ANCHOR QEA




B:\Projects\0111_Duwamish Shipyard\08000111-01\CAD\FIGURES\UPDATES TO HISTORIC\000111101-026.dwg AQ-B-Land

Feb 05, 2010 4:27pm epipkin

**HORIZONTAL DATUM**: Washington State Plane North, NAD83 Feet.
**VERTICAL DATUM**: Mean Lower Low Water (MLLW).

**NOTES**:
1. Location of underground structures has not been field verified with subsurface techniques such as cameras.

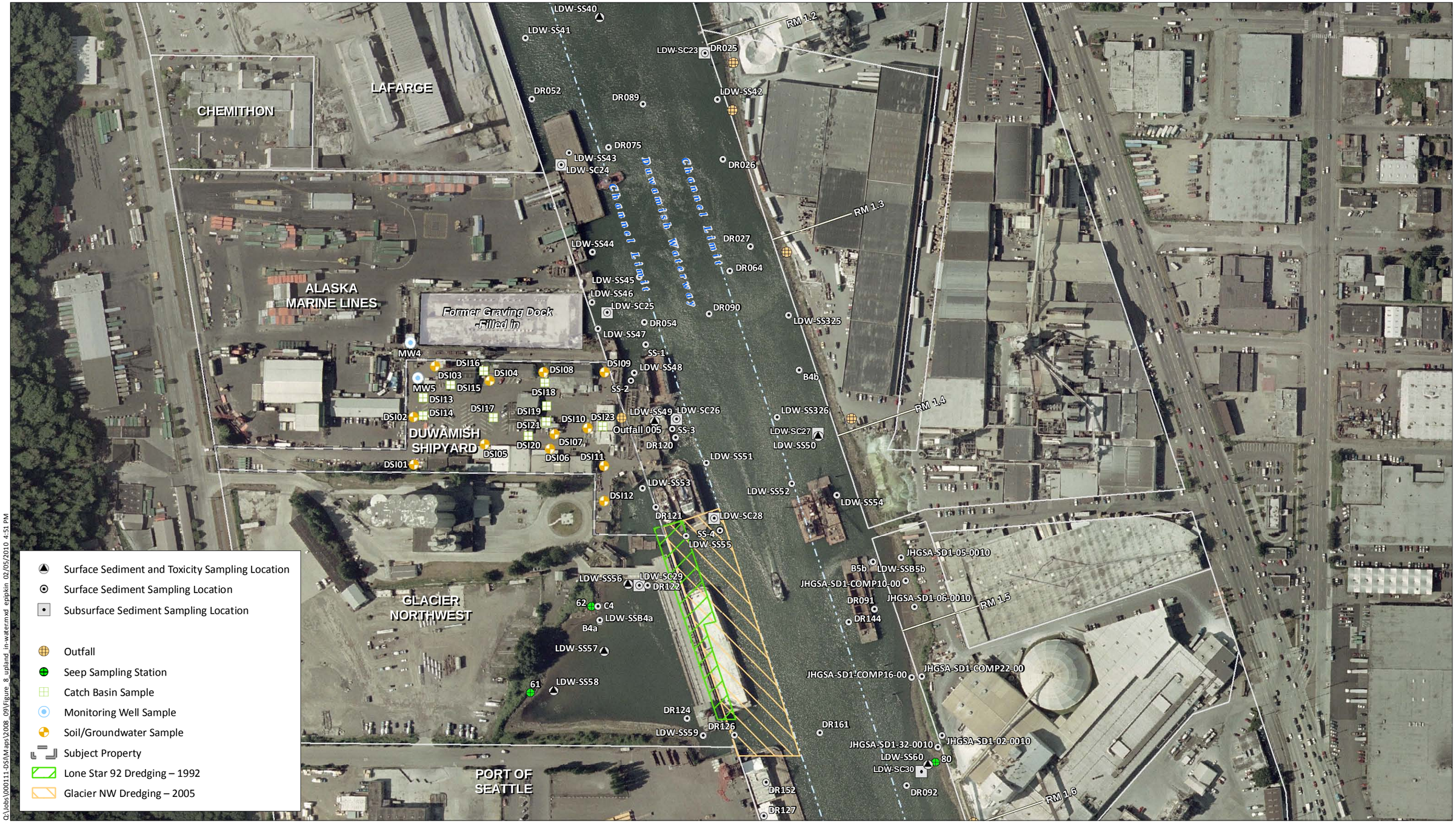
LEGEND:

- Former Storm Line and Direction of Flow
- Top of Bank (TOB)
- Subject Property Boundary
- Topographic and Bathymetric Contours (MLLW Feet)
- Catch Basin
- Independent Remedial Action Areas
- Trench Drain
- MW4 Monitoring Well (Installed in 1993 by Others)

0 100
Scale in Feet

ANCHOR QEA

**Figure 7**
Independend Remedial Action Areas
Duwamish Shipyard, Inc.
Seattle, Washington




Q:\Jobs\000111-05\Maps\2008_09\Figure_8_upland_in-watermxd epipkin 02/05/2010 4:51 PM

ANCHOR QEA

**NOTES:**
1. Surface sediment data queried from the Lower Duwamish Water Group database (April 2007).
2. Outfall locations are approximate.
3. Glacier NW and Lone Star 92 dredging locations are approximate.
4. River Mile = RM.
5. Aerial Image 2002, pre-dates closure of Graving Dock

Feet
0 100 200 300 400

**Figure 8**
Upland and In-Water Sampling Stations
Duwamish Shipyard, Inc.
Seattle, Washington


**NOTES:**
1. Surface sediment data queried from the Lower Duwamish Water Group database (April 2007).
2. Sediment Quality Standard (SQS) = 57 mg/kg dry weight.
3. Cleanup Screening Level (CSL) = 93 mg/kg dry weight.
4. Outfall locations are approximate.
5. Glacier NW and Lone Star 92 dredging locations are approximate.
6. River Mile = RM.
7. Aerial Image 2002, pre-dates closure of Graving Dock

ANCHOR QEA

Feet
0 100 200 300 400

**Figure 9**
Surface Sediment Arsenic Sampling Stations and Concentrations
Duwamish Shipyard, Inc.
Seattle, Washington


Q:\Jobs\000111-DSI\Maps\2008_09\Figure_10_Surf_Cu.mxd epipkin 02/05/2010 5:16 PM

ANCHOR QEA

**NOTES:**
1. Surface sediment data queried from the Lower Duwamish Water Group database (April 2007).
2. Cleanup Screening Level (CSL) = 390 mg/kg dry weight.
3. Outfall locations are approximate.
4. Glacier NW and Lone Star 92 dredging locations are approximate.
5. River Mile = RM.
6. Aerial Image 2002, pre-dates closure of Graving Dock

Feet
0 100 200 300 400

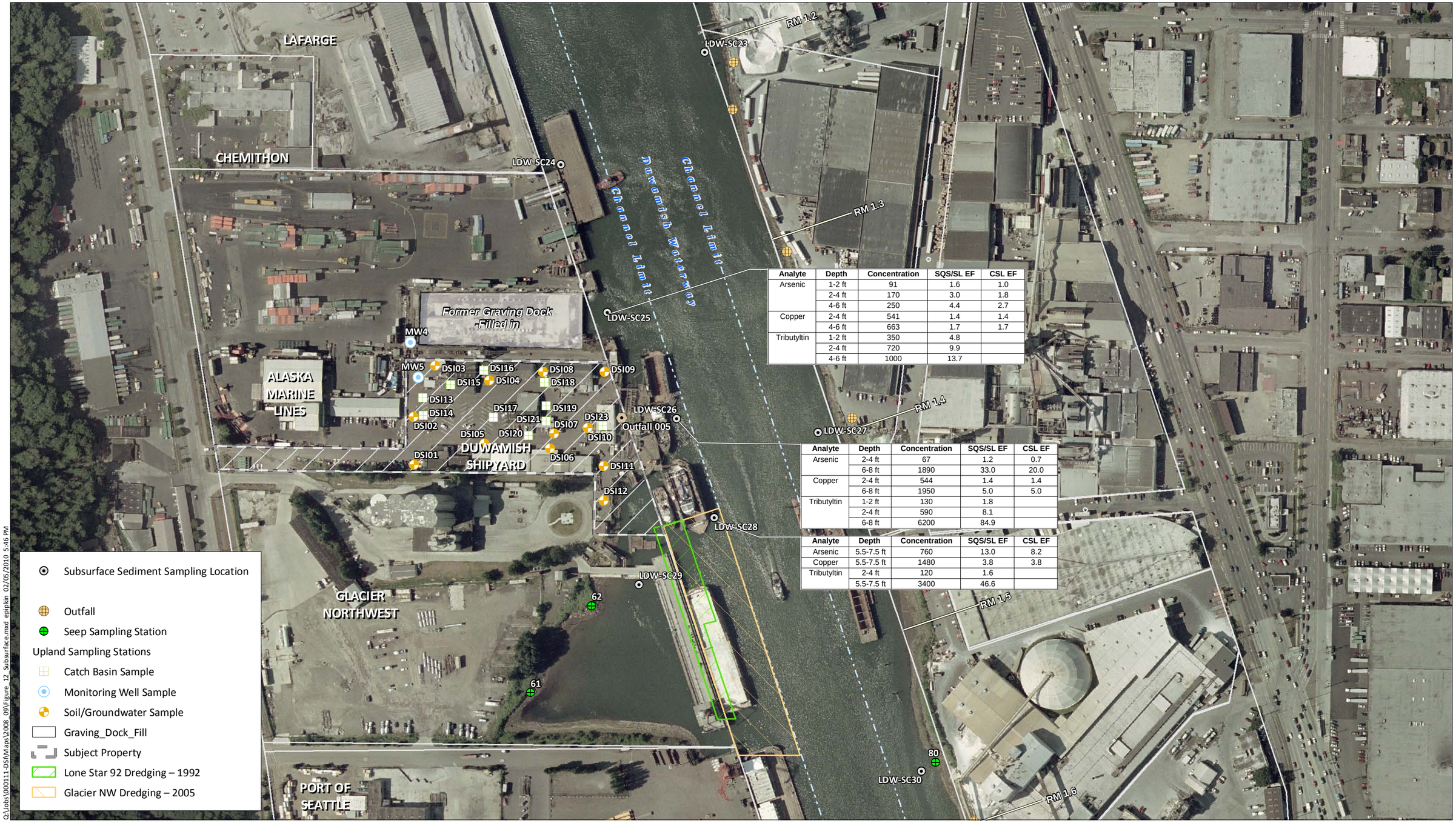
**Figure 10**
Surface Sediment Copper Sampling Stations and Concentrations
Duwamish Shipyard, Inc.
Seattle, Washington


Q:\Jobs\000111-DS\Maps\2008_09\Figure_11_Surf_TBT.mxd epipkin 02/05/2010 5:30 PM

**NOTES:**
1. Surface sediment data queried from the Lower Duwamish Water Group database (April 2007).
2. Former Puget Sound Dredge Disposal Act (PSDDA) screening level (SL) for Tributyltin (TBT) = 73 ug/kg dry weight as ion.
3. Outfall locations are approximate.
4. Glacier NW and Lone Star 92 dredging locations are approximate.
5. River Mile = RM.
6. Aerial Image 2002, pre-dates closure of Graving Dock

Feet
0 100 200 300 400

**Figure 11**
Surface Sediment Tributyltin Sampling Stations and Concentrations
Duwamish Shipyard, Inc.
Seattle, Washington




| Analyte | Depth | Concentration | SQS/SL EF | CSL EF |
|---|---|---|---|---|
| Arsenic | 1-2 ft | 91 | 1.6 | 1.0 |
| | 2-4 ft | 170 | 3.0 | 1.8 |
| | 4-6 ft | 250 | 4.4 | 2.7 |
| Copper | 2-4 ft | 541 | 1.4 | 1.4 |
| | 4-6 ft | 663 | 1.7 | 1.7 |
| Tributyltin | 1-2 ft | 350 | 4.8 | |
| | 2-4 ft | 720 | 9.9 | |
| | 4-6 ft | 1000 | 13.7 | |

| Analyte | Depth | Concentration | SQS/SL EF | CSL EF |
|---|---|---|---|---|
| Arsenic | 2-4 ft | 67 | 1.2 | 0.7 |
| | 6-8 ft | 1890 | 33.0 | 20.0 |
| Copper | 2-4 ft | 544 | 1.4 | 1.4 |
| | 6-8 ft | 1950 | 5.0 | 5.0 |
| Tributyltin | 1-2 ft | 130 | 1.8 | |
| | 2-4 ft | 590 | 8.1 | |
| | 6-8 ft | 6200 | 84.9 | |

| Analyte | Depth | Concentration | SQS/SL EF | CSL EF |
|---|---|---|---|---|
| Arsenic | 5.5-7.5 ft | 760 | 13.0 | 8.2 |
| Copper | 5.5-7.5 ft | 1480 | 3.8 | 3.8 |
| Tributyltin | 2-4 ft | 120 | 1.6 | |
| | 5.5-7.5 ft | 3400 | 46.6 | |

Q:\Jobs\000111-05\Maps\2008_09\Figure_12_Subsurface.mxd epipkin 02/05/2010 5:46 PM

**NOTES:**
1. Surface sediment data queried from the Lower Duwamish Water Group database (April 2007).
2. -Arsenic Sediment Quality Standard (SQS) = 390 mg/kg dry weight.
-Arsenic Cleanup Screening Level (CSL) = 390 mg/kg dry weight.
-Copper Cleanup Screening Level (CSL) = 390 mg/kg dry weight.
-Copper Cleanup Screening Level (CSL) = 390 mg/kg dry weight.
-Former Puget Sound Dredge Disposal Act (PSDDA) screening level (SL) for Tributyltin (TBT) = 73 ug/kg dry weight as ion.
3. Exceedance Factor (EF) = Concentration/Criteria.
4. Outfall locations are approximate.
5. Glacier NW and Lone Star 92 dredging locations are approximate.
6. River Mile = RM.
7. Aerial Image 2002, pre-dates closure of Graving Dock

ANCHOR QEA

Feet
0 100 200 300 400

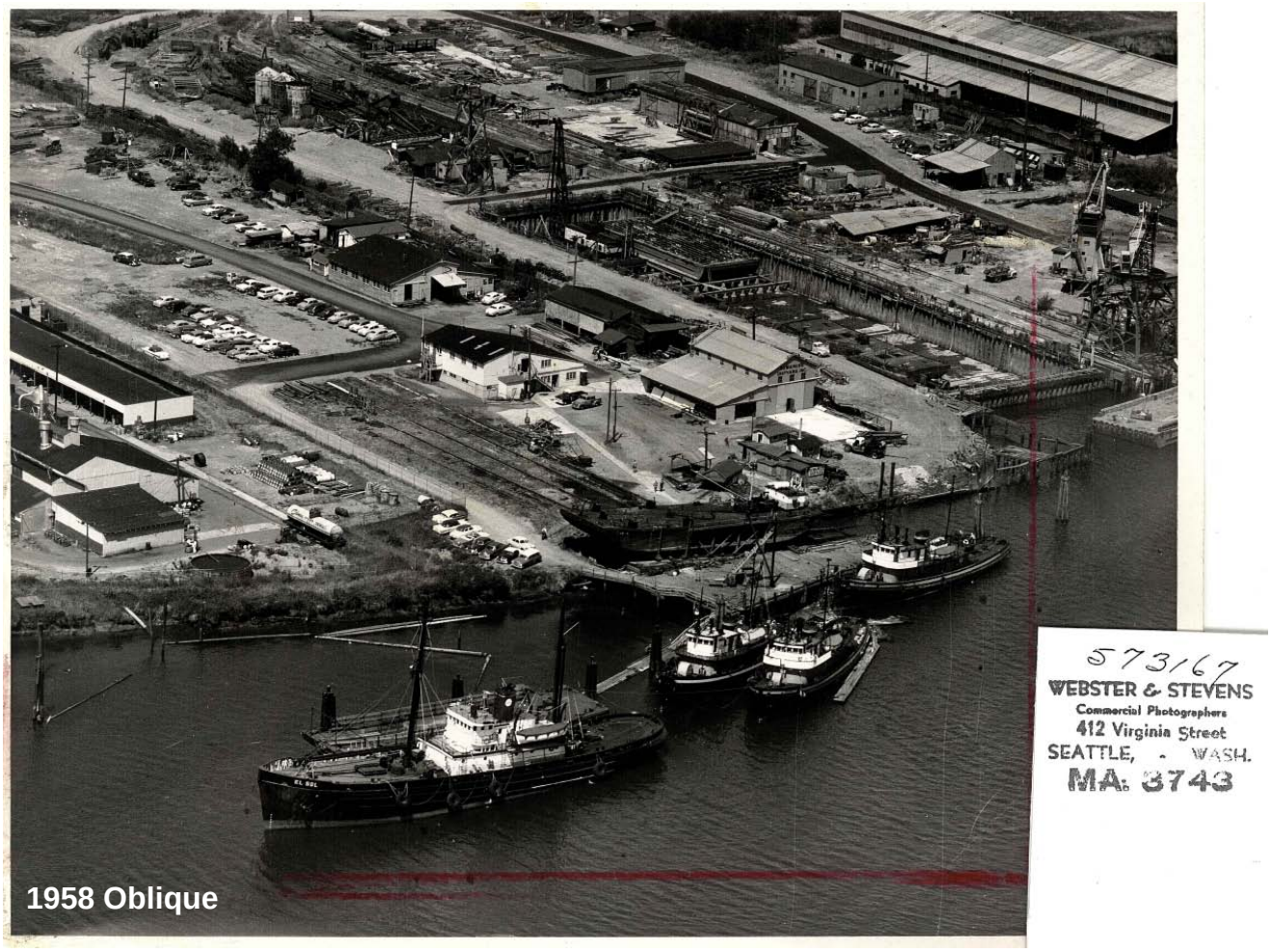
**Figure 12**
Subsurface Sediment Arsenic, Copper, and TBT Concentrations
Duwamish Shipyard, Inc.
Seattle, Washington

# APPENDIX A
# AERIAL PHOTOGRAPHS


1936 Walker & Associates


1946 Walker & Associates


1956 Walker & Associates


573167
WEBSTER & STEVENS
Commercial Photographers
412 Virginia Street
SEATTLE, WASH.
MA. 3743
1958 Oblique


1960 Walker & Associates


1969 Walker & Associates


1974 Walker & Associates

# APPENDIX B
# SUMMARY OF AVAILABLE LOWER DUWAMISH WATERWAY SEDIMENT CONCENTRATIONS (CD)

## List of Tables

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0030<br>CH09-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1033<br>CH10-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1034<br>CH10-02<br>10/17/1997<br>0-10 cm<br>Nav. Channel - Lafarge | EIT085<br>EIT12-01<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EIT086<br>EIT12-02<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST203<br>EST19-02<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST204<br>EST19-03<br>10/23/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST215<br>EST20-05<br>10/14/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST216<br>EST20-06<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L10535-1<br>3/6/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 5.2 | 4.4 | 18 | 79 | 84 | 4 | 5.4 | 13 | 13 | 10.1 |
| Silt (total calc'd) | -- | -- | -- | -- | 67 | 60 | 41 | 2.5 | 2 | 61 | 64 | 54 | 49 | 67 |
| Clay (total calc'd) | -- | -- | -- | -- | 28 | 35 | 37 | 1.8 | 1.9 | 35 | 31 | 31 | 37 | 22.8 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.94 | 2.08 | 1.61 | 0.79 | 0.34 | 2.23 | 2.15 | 1.71 | 2.21 | 2.67 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 49.1 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 38.7 |
| **Metals (mg/kg dry weight)** | | | | | | | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 27900 |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.9 J |
| Arsenic | 57 | 93 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.37 |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.31 J |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8920 |
| Chromium | 260 | 270 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 34.4 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 64.2 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 36000 J |
| Lead | 450 | 530 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 29.5 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9630 |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.18 |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 31.2 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3220 |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.3 U |
| Silver | 6.1 | 6.1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.41 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11600 |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 20 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 110 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0030<br>CH09-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1033<br>CH10-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1034<br>CH10-02<br>10/17/1997<br>0-10 cm<br>Nav. Channel - Lafarge | EIT085<br>EIT12-01<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EIT086<br>EIT12-02<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST203<br>EST19-02<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST204<br>EST19-03<br>10/23/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST215<br>EST20-05<br>10/14/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST216<br>EST20-06<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L10535-1<br>3/6/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U |
| Acenaphthylene | 66 | 66 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.2 U |
| Acenaphthene | 16 | 57 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.06 |
| Anthracene | 220 | 1200 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.1 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 12 J |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10 J |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.2 J |
| Chrysene | 110 | 460 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.5 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U |
| Fluoranthene | 160 | 1200 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 29 J |
| Fluorene | 23 | 79 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.4 J |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.6 J |
| Naphthalene | 99 | 170 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 UJ |
| Phenanthrene | 100 | 480 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15 J |
| Pyrene | 1000 | 1400 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 27 J |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 24.9 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 25 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 130 J |
| **PAHs (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 88 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 33 U |
| Acenaphthene | -- | -- | 500 | 730 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 81.7 |
| Anthracene | -- | -- | 960 | 4400 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 110 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 320 J |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 270 J |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 464 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 200 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 140 J |
| Chrysene | -- | -- | 1400 | 2800 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 440 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 88 U |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 770 J |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | SMS 2LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>Nav. Channel - Lafarge | CH0030<br>CH09-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1033<br>CH10-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1034<br>CH10-02<br>10/17/1997<br>0-10 cm<br>Nav. Channel - Lafarge | EIT085<br>EIT12-01<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EIT086<br>EIT12-02<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST203<br>EST19-02<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST204<br>EST19-03<br>10/23/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST215<br>EST20-05<br>10/14/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST216<br>EST20-06<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L10535-1<br>3/6/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | -- | -- | 540 | 1000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 92 J |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 150 J |
| Naphthalene | -- | -- | 2100 | 2400 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 88 UJ |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 390 J |
| Pyrene | -- | -- | 2600 | 3300 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 710 J |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 664 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 670 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3460 J |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4140 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.052 UJ |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.13 J |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.052 UJ |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.052 UJ |
| **Benzenes (µg/kg dry weight)** | | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.4 UJ |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.4 UJ |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.5 J |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.4 UJ |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.4 UJ |
| Nitrobenzene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 UJ |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 28.6 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.6 |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.1 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.82 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.1 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.2 UJ |
| **Phthalates (µg/kg dry weight)** | | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 764 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 43 |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 22 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 33 UJ |
| **Phenols (µg/kg dry weight)** | | | | | | | | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 110 UJ |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 110 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 U |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0030<br>CH09-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1033<br>CH10-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1034<br>CH10-02<br>10/17/1997<br>0-10 cm<br>Nav. Channel - Lafarge | EIT085<br>EIT12-01<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EIT086<br>EIT12-02<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST203<br>EST19-02<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST204<br>EST19-03<br>10/23/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST215<br>EST20-05<br>10/14/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST216<br>EST20-06<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L10535-1<br>3/6/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 110 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 UJ |
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 UJ |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 220 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 220 U |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 U |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 110 U |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 UJ |
| Phenol | 420 | 1200 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 220 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.4 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.1 UJ |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.1 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 220 U |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 220 UJ |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 U |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 220 U |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 U |
| Dibenzofuran | -- | -- | 540 | 700 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 65 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 UJ |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 UJ |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 UJ |
| Isophorone | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 220 UJ |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 55 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 22 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 33 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 33 UJ |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 110 UJ |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0030<br>CH09-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1033<br>CH10-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1034<br>CH10-02<br>10/17/1997<br>0-10 cm<br>Nav. Channel - Lafarge | EIT085<br>EIT12-01<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EIT086<br>EIT12-02<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST203<br>EST19-02<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST204<br>EST19-03<br>10/23/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST215<br>EST20-05<br>10/14/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST216<br>EST20-06<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L10535-1<br>3/6/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 4.3 J | 4.8 | 3.2 J | 0.51 J | -- | 3.7 J | 5.6 | 6.4 | **14** | 5.1 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 26 U |
| Aroclor-1221 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 26 U |
| Aroclor-1232 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 26 U |
| Aroclor-1242 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 26 U |
| Aroclor-1248 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 26 U |
| Aroclor-1254 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 85 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0030<br>CH09-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1033<br>CH10-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1034<br>CH10-02<br>10/17/1997<br>0-10 cm<br>Nav. Channel - Lafarge | EIT085<br>EIT12-01<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EIT086<br>EIT12-02<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST203<br>EST19-02<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST204<br>EST19-03<br>10/23/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST215<br>EST20-05<br>10/14/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST216<br>EST20-06<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L10535-1<br>3/6/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 51 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 83 J | 100 | 51 J | 4 J | 14 J | 83 J | 120 | 110 | 300 | 136 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | 310 U | 330 U | 280 U | 190 U | 180 U | 270 U | 260 U | 240 U | 280 U | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 23000 J | 30000 J | 16000 J | 5800 J | 5500 J | 26000 J | 34000 J | 29000 J | 85000 J | -- |
| PCB-105 | -- | -- | -- | -- | 2900 | 3000 | 620 | 280 J | 440 J | 2500 | 3900 | 3500 | 230 U | -- |
| PCB-110 | -- | -- | -- | -- | 5500 | 6700 | 4000 | 2000 | 1700 | 6500 | 9200 | 7700 | 29000 | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | 5100 | 6200 | 3800 | 1300 U | 1700 U | 6900 | 9400 | 8100 | 25000 | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | 280 U | 290 U | 250 U | 170 U | 160 U | 240 U | 240 U | 220 U | 260 U | -- |
| PCB-128 | -- | -- | -- | -- | 4000 J | 4900 J | 2700 J | 2900 J | 1300 J | 3700 U | 4900 J | 4300 J | 12000 J | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 5100 | 7100 | 3100 | 1900 | 1600 | 5900 | 8000 | 6900 | 25000 | -- |
| PCB-153 | -- | -- | -- | -- | 18000 J | 22000 J | 11000 J | 3200 J | 3600 J | 19000 J | 26000 J | 22000 J | 57000 J | -- |
| PCB-156 | -- | -- | -- | -- | 690 | 640 | 220 U | 150 U | 140 U | 440 J | 840 | 940 | 2900 | -- |
| PCB-157 | -- | -- | -- | -- | 220 U | 230 U | 200 U | 130 U | 130 U | 180 U | 190 U | 410 | 2100 | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | 710 U | 730 U | 630 U | 410 U | 400 U | 550 U | 580 U | 540 U | 630 U | -- |
| PCB-170 | -- | -- | -- | -- | 5300 | 5700 | 1100 | 1000 | 820 | 3200 | 5200 | 4900 | 10000 | -- |
| PCB-180 | -- | -- | -- | -- | 8300 | 7800 | 3100 | 2200 | 1400 | 5000 | 7600 | 6100 | 13000 | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 320 U | 330 U | 290 U | 190 U | 180 U | 250 U | 270 U | 240 U | 290 U | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0030<br>CH09-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1033<br>CH10-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - Lafarge | CH1034<br>CH10-02<br>10/17/1997<br>0-10 cm<br>Nav. Channel - Lafarge | EIT085<br>EIT12-01<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EIT086<br>EIT12-02<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST203<br>EST19-02<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST204<br>EST19-03<br>10/23/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST215<br>EST20-05<br>10/14/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | EST216<br>EST20-06<br>9/17/1997<br>0-10 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L10535-1<br>3/6/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

**a** The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WQABRAN L10601-1<br>3/12/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10623-1<br>3/27/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10785-1<br>4/3/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10786-1<br>4/8/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10787-1<br>4/17/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10788-1<br>4/24/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10930-1<br>5/1/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10931-1<br>5/8/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L11124-1<br>5/15/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L11178-1<br>5/20/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 10.3 | 9.3 | 8 | 10.9 | 9.4 | 11.4 | 7.4 | 8.2 | 6.2 | 11.3 |
| Silt (total calc'd) | -- | -- | -- | -- | 64.6 | 64.1 | 67.6 | 66.8 | 67.8 | 60.7 | 62 | 68.6 | 68.9 | 58.7 |
| Clay (total calc'd) | -- | -- | -- | -- | 26 | 25.6 | 24.5 | 22 | 23.6 | 28.9 | 30.4 | 23 | 23.7 | 29.2 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.72 | 2.54 | 2.56 | 2.53 | 2.53 | 2.54 | 2.57 | 2.65 | 2.54 | 2.77 |
| Total solids | -- | -- | -- | -- | 50.8 | 48.1 | 50.4 | 48.7 | 49 | 50.4 | 50.2 | 49 | 50 | 45.9 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | 92.5 | 39.5 | 83.3 | 34.9 | 40.8 | 31.7 | 85.7 | 49 | 140 | 129 |
| **Metals (mg/kg dry weight)** | | | | | | | | | | | | | | |
| Aluminum | -- | -- | -- | -- | 27800 | 26000 J | 23000 J | 26000 J | 24000 J | 23000 J | 25000 J | 24000 J | 24000 J | 25000 J |
| Antimony | -- | -- | -- | -- | -- | -- | 3.2 UJ | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | 15 | 18 | 15 | 15 | 18 | 14 | 18 | 20 | 22 | 22 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | 0.35 | 0.42 | 0.38 | 0.39 | 0.37 | 0.36 | 0.36 | 0.57 | 0.56 | 0.59 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.3 J | 0.5 | 0.36 | 0.43 | 0.35 | 0.42 | 0.42 | 0.35 | 0.36 | 0.39 |
| Calcium | -- | -- | -- | -- | 9070 | 8610 | 8020 | 8830 | 21600 | 7780 | 8450 | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 34.1 | 34.1 | 30.4 | 32.9 | 30.8 | 40.7 | 32.9 | 32.9 | 33 | 35.3 |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | 61 | 62.8 | 58.5 | 60.2 | 59.6 | 75.8 | 65.5 | 62.2 | 63.6 | 78 |
| Iron | -- | -- | -- | -- | 35000 J | 34000 J | 31000 J | 34000 J | 31000 J | 29000 J | 32000 J | 32000 J | 33000 J | 34000 J |
| Lead | 450 | 530 | -- | -- | 29.9 | 31.8 | 26.6 | 29.2 | 25.1 | 26.8 | 30.9 | 31.6 | 30.6 | 34 |
| Magnesium | -- | -- | -- | -- | 9210 | 9270 | 8510 | 9200 | 8820 | 8190 | 8920 | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.22 | 0.18 | 0.17 | 0.15 | 0.18 | 0.28 | 0.18 | 0.24 | 0.18 | 0.26 |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | 30.3 | 30.4 | 28 | 30.4 | 28.6 | 28.2 | 30.5 | 32.4 | 29.2 | 33.3 |
| Potassium | -- | -- | -- | -- | 3210 | 3220 | 2960 | 3240 | 3060 | 2860 | 3090 | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 4.9 U | 5.2 U | 5.2 U | 5.3 U | 5.1 U | 5 U | 5.2 U | 5.1 U | 5.2 U | 5.4 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.39 U | 0.42 U | 0.42 U | 0.43 U | 0.41 U | 0.77 | 0.42 U | 0.47 | 0.46 | 0.5 |
| Sodium | -- | -- | -- | -- | 10800 | 11900 | 11100 | 11600 | 11700 | 10200 | 11200 | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 20 U | 21 U | 20 U | 21 U | 20 U | 20 U | 20 U | 20 U | 20 U | 22 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | 107 | 105 | 104 | 115 | 100 | 99.6 | 112 | 111 | 112 | 126 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WQABRAN L10601-1<br>3/12/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10623-1<br>3/27/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10785-1<br>4/3/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10786-1<br>4/8/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10787-1<br>4/17/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10788-1<br>4/24/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10930-1<br>5/1/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10931-1<br>5/8/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L11124-1<br>5/15/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L11178-1<br>5/20/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 3.1 U | -- | 3.3 U | -- | 3.5 U | -- | 3.3 U | 3.3 U | -- | 3.4 U |
| Acenaphthylene | 66 | 66 | -- | -- | 1.1 U | -- | 1.3 U | -- | 1.3 U | -- | 1.2 U | 1.2 U | -- | 1.3 U |
| Acenaphthene | 16 | 57 | -- | -- | 2 | -- | 2.02 | -- | 3.19 | -- | 3.43 | 1.2 | -- | 2.71 |
| Anthracene | 220 | 1200 | -- | -- | 5.1 J | -- | 4.7 J | -- | 4.7 J | -- | 4.7 J | 3 J | -- | 3.5 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 11 J | -- | 11 J | -- | 11 J | -- | 12 J | 9.4 J | -- | 12 J |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 9.6 J | -- | 9.4 J | -- | 8.3 J | -- | 8.2 J | 7.2 J | -- | 7.9 J |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 5.5 J | -- | 4.7 J | -- | 13 J | -- | 6.2 J | 5.7 J | -- | 6.1 J |
| Chrysene | 110 | 460 | -- | -- | 16.1 | -- | 16.7 | -- | 17.2 | -- | 17.3 | 14.8 | -- | 15.7 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 3.1 U | -- | 3.3 U | -- | 3.5 U | -- | 3.3 U | 3.3 U | -- | 3.4 U |
| Fluoranthene | 160 | 1200 | -- | -- | 28 J | -- | 33 J | -- | 35 J | -- | 43 J | 27 J | -- | 36 J |
| Fluorene | 23 | 79 | -- | -- | 2.7 J | -- | 2.1 J | -- | 4.3 J | -- | 5.1 J | 1.9 J | -- | 3.4 J |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 5.9 J | -- | 5.9 J | -- | 7.5 J | -- | 6.6 J | 6 J | -- | 6.5 J |
| Naphthalene | 99 | 170 | -- | -- | 3.1 UJ | -- | 3.3 UJ | -- | 3.5 UJ | -- | 3.3 UJ | 3.3 UJ | -- | 3.4 UJ |
| Phenanthrene | 100 | 480 | -- | -- | 14 J | -- | 11 J | -- | 18 J | -- | 25 J | 9.4 J | -- | 17 J |
| Pyrene | 1000 | 1400 | -- | -- | 26 J | -- | 23 J | -- | 26 J | -- | 32 J | 23 J | -- | 26 J |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 24.3 | -- | 23 J | -- | 28 J | -- | 26 J | 24 J | -- | 27 J |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 24 J | -- | 20 J | -- | 30 J | -- | 39 J | 15 J | -- | 27 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 130 J | -- | 130 J | -- | 150 J | -- | 150 J | 120 J | -- | 140 J |
| **PAHs (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 85 U | -- | 85 U | -- | 88 U | -- | 86 U | 88 U | -- | 94 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 31 U | -- | 32 U | -- | 33 U | -- | 32 U | 33 U | -- | 35 U |
| Acenaphthene | -- | -- | 500 | 730 | 54.5 | -- | 51.6 | -- | 80.6 | -- | 88.2 | 31 | -- | 75.2 |
| Anthracene | -- | -- | 960 | 4400 | 140 J | -- | 120 J | -- | 120 J | -- | 120 J | 79 J | -- | 97 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 300 J | -- | 290 J | -- | 280 J | -- | 320 J | 250 J | -- | 330 J |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 260 J | -- | 240 J | -- | 210 J | -- | 210 J | 190 J | -- | 220 J |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 470 | -- | 440 | -- | 514 | -- | 498 | 449 | -- | 519 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 191 | -- | 160 J | -- | 190 J | -- | 180 J | 180 J | -- | 240 J |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 150 J | -- | 120 J | -- | 320 J | -- | 160 J | 150 J | -- | 170 J |
| Chrysene | -- | -- | 1400 | 2800 | 437 | -- | 427 | -- | 435 | -- | 444 | 392 | -- | 436 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 85 U | -- | 85 U | -- | 88 U | -- | 86 U | 88 U | -- | 94 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 750 J | -- | 850 J | -- | 880 J | -- | 1100 J | 710 J | -- | 1000 J |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WQABRAN L10601-1<br>3/12/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10623-1<br>3/27/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10785-1<br>4/3/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10786-1<br>4/8/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10787-1<br>4/17/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10788-1<br>4/24/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10930-1<br>5/1/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10931-1<br>5/8/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L11124-1<br>5/15/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L11178-1<br>5/20/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | -- | -- | 540 | 1000 | 74 J | -- | 55 J | -- | 110 J | -- | 130 J | 51 J | -- | 95 J |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 160 J | -- | 150 J | -- | 190 J | -- | 170 J | 160 J | -- | 180 J |
| Naphthalene | -- | -- | 2100 | 2400 | 85 UJ | -- | 85 UJ | -- | 88 UJ | -- | 86 UJ | 88 UJ | -- | 94 UJ |
| Phenanthrene | -- | -- | 1500 | 5400 | 370 J | -- | 280 J | -- | 450 J | -- | 650 J | 250 J | -- | 480 J |
| Pyrene | -- | -- | 2600 | 3300 | 710 J | -- | 600 J | -- | 670 J | -- | 820 J | 610 J | -- | 720 J |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 661 | -- | 600 J | -- | 700 J | -- | 680 J | 630 J | -- | 760 J |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 640 J | -- | 510 J | -- | 760 J | -- | 990 J | 410 J | -- | 750 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3430 J | -- | 3280 J | -- | 3690 J | -- | 3900 J | 3090 J | -- | 3800 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 4070 J | -- | 3780 J | -- | 4450 J | -- | 4900 J | 3500 J | -- | 4600 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.051 UJ | -- | 0.055 UJ | -- | 0.055 UJ | -- | 0.054 UJ | 0.053 UJ | -- | 0.054 UJ |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.11 J | -- | 0.086 J | -- | 0.13 J | -- | 0.086 J | 0.14 J | -- | 0.1 J |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.051 UJ | -- | 0.055 UJ | -- | 0.055 UJ | -- | 0.054 UJ | 0.053 UJ | -- | 0.054 UJ |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.051 UJ | -- | 0.055 UJ | -- | 0.055 UJ | -- | 0.054 UJ | 0.053 UJ | -- | 0.054 UJ |
| **Benzenes (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 1.4 UJ | -- | 1.4 UJ | -- | 1.4 UJ | -- | 1.4 UJ | 1.4 UJ | -- | 1.5 UJ |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 1.4 UJ | -- | 1.4 UJ | -- | 1.4 UJ | -- | 1.4 UJ | 1.4 UJ | -- | 1.5 UJ |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 3.1 J | -- | 2.2 J | -- | 3.2 J | -- | 2.2 J | 3.7 J | -- | 2.8 J |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 1.4 UJ | -- | 1.4 UJ | -- | 1.4 UJ | -- | 1.4 UJ | 1.4 UJ | -- | 1.5 UJ |
| Hexachlorobenzene | -- | -- | 22 | 70 | 1.4 UJ | -- | 1.4 UJ | -- | 1.4 UJ | -- | 1.4 UJ | 1.4 UJ | -- | 1.5 UJ |
| Nitrobenzene | -- | -- | -- | -- | 53 UJ | -- | 54 U | -- | 55 U | -- | 54 U | 55 U | -- | 59 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 27.7 | -- | 24 | -- | 18.6 | -- | 23.1 | 21.4 | -- | 26.8 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.7 | -- | 1.7 | -- | 1.5 | -- | 1.3 | 1.3 | -- | 1.4 |
| Diethyl phthalate | 61 | 110 | -- | -- | 1.9 U | -- | 2.1 U | -- | 2.2 U | -- | 2.1 U | 2.1 U | -- | 2.1 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.81 U | -- | 0.86 U | -- | 0.87 U | -- | 0.86 U | 0.83 U | -- | 0.87 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 1.9 U | -- | 2.1 U | -- | 2.2 U | -- | 2.1 U | 2.1 U | -- | 2.1 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 1.1 UJ | -- | 1.3 U | -- | 1.3 U | -- | 1.2 U | 1.2 U | -- | 1.3 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 754 | -- | 610 | -- | 471 | -- | 594 | 567 | -- | 741 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 47 | -- | 44 | -- | 37 | -- | 34 | 35 | -- | 39 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 53 U | -- | 54 U | -- | 55 U | -- | 54 U | 55 U | -- | 59 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 22 U | -- | 22 U | -- | 22 U | -- | 22 U | 22 U | -- | 24 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 53 U | -- | 54 U | -- | 55 U | -- | 54 U | 55 U | -- | 59 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 31 UJ | -- | 32 U | -- | 33 U | -- | 32 U | 33 U | -- | 35 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 100 UJ | -- | 110 UJ | -- | 110 UJ | -- | 110 UJ | 110 UJ | -- | 120 UJ |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 100 U | -- | 110 U | -- | 110 UJ | -- | 110 UJ | 110 UJ | -- | 120 UJ |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 53 U | -- | 54 U | -- | 55 UJ | -- | 54 UJ | 55 UJ | -- | 59 UJ |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WQABRAN L10601-1<br>3/12/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10623-1<br>3/27/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10785-1<br>4/3/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10786-1<br>4/8/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10787-1<br>4/17/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10788-1<br>4/24/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10930-1<br>5/1/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10931-1<br>5/8/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L11124-1<br>5/15/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L11178-1<br>5/20/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 100 UJ | -- | 110 UJ | -- | 110 UJ | -- | 110 UJ | 110 UJ | -- | 120 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | 53 UJ | -- | 54 UJ | -- | 55 UJ | -- | 54 UJ | 55 UJ | -- | 59 UJ |
| 4-Methylphenol | 670 | 670 | -- | -- | 53 UJ | -- | 54 UJ | -- | 55 UJ | -- | 54 UJ | 55 UJ | -- | 59 UJ |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 220 U | -- | 220 U | -- | 220 UJ | -- | 220 UJ | 220 UJ | -- | 240 UJ |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 220 U | -- | 220 U | -- | 220 UJ | -- | 220 UJ | 220 UJ | -- | 240 UJ |
| 2-Nitrophenol | -- | -- | -- | -- | 53 U | -- | 54 U | -- | 55 UJ | -- | 54 UJ | 55 UJ | -- | 59 UJ |
| 4-Nitrophenol | -- | -- | -- | -- | 100 U | -- | 110 U | -- | 110 UJ | -- | 110 UJ | 110 UJ | -- | 120 UJ |
| Pentachlorophenol | 360 | 690 | -- | -- | 53 UJ | -- | 54 UJ | -- | 55 UJ | -- | 54 UJ | 55 UJ | -- | 59 UJ |
| Phenol | 420 | 1200 | -- | -- | 220 U | -- | 220 UJ | -- | 220 UJ | -- | 220 UJ | 220 UJ | -- | 240 UJ |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 2 | -- | 2.1 U | -- | 2.2 U | -- | 2.1 U | 2.1 U | -- | 2.5 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 1.9 UJ | -- | 2.1 U | -- | 2.2 U | -- | 2.1 U | 2.1 U | -- | 2.1 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.9 U | -- | 2.1 U | -- | 2.2 U | -- | 2.1 U | 2.1 U | -- | 2.1 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 220 U | -- | 220 U | -- | 220 U | -- | 220 U | 220 U | -- | 240 U |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | 220 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 53 U | -- | 54 UJ | -- | 55 UJ | -- | 54 UJ | 55 UJ | -- | **59 UJ** |
| Benzoic acid | 650 | 650 | -- | -- | 220 U | -- | 220 | -- | 220 UJ | -- | 220 UJ | 220 UJ | -- | 240 UJ |
| Carbazole | -- | -- | -- | -- | 53 U | -- | 54 U | -- | 55 U | -- | 54 U | 55 U | -- | 59 U |
| Dibenzofuran | -- | -- | 540 | 700 | 55 | -- | 54 U | -- | 55 U | -- | 54 U | 55 U | -- | 68 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 53 UJ | -- | 54 U | -- | 55 U | -- | 54 U | 55 U | -- | 59 U |
| Hexachloroethane | -- | -- | -- | -- | 53 UJ | -- | 54 UJ | -- | 55 UJ | -- | 54 UJ | 55 UJ | -- | 59 UJ |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 53 UJ | -- | 54 UJ | -- | 55 UJ | -- | 54 UJ | 55 UJ | -- | 59 UJ |
| Isophorone | -- | -- | -- | -- | 53 U | -- | 54 UJ | -- | 55 UJ | -- | 54 UJ | 55 UJ | -- | 59 UJ |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 53 U | -- | 54 UJ | -- | 55 UJ | -- | 54 UJ | 55 UJ | -- | 59 UJ |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 220 UJ | -- | 220 UJ | -- | 220 UJ | -- | 220 UJ | 220 UJ | -- | 240 UJ |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 53 U | -- | 54 U | -- | 55 U | -- | 54 U | 55 U | -- | 59 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 22 U | -- | 22 U | -- | 22 U | -- | 22 U | 22 U | -- | 24 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 31 U | -- | 32 U | -- | 33 U | -- | 32 U | 33 U | -- | 35 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 31 UJ | -- | 32 UJ | -- | 33 UJ | -- | 32 UJ | 33 UJ | -- | 35 UJ |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 100 UJ | -- | 110 UJ | -- | 110 UJ | -- | 110 UJ | 110 UJ | -- | 120 UJ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 3.8 | -- | 4.7 | -- | 5.7 | -- | 4.8 | 2.4 | -- | 6.9 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 26 U | -- | 26 U | -- | 27 U | -- | 26 U | 27 U | -- | 28 U |
| Aroclor-1221 | -- | -- | -- | -- | 26 U | -- | 26 U | -- | 27 U | -- | 26 U | 27 U | -- | 28 U |
| Aroclor-1232 | -- | -- | -- | -- | 26 U | -- | 26 U | -- | 27 U | -- | 26 U | 27 U | -- | 28 U |
| Aroclor-1242 | -- | -- | -- | -- | 26 U | -- | 26 U | -- | 27 U | -- | 26 U | 27 U | -- | 28 U |
| Aroclor-1248 | -- | -- | -- | -- | 26 U | -- | 26 U | -- | 27 U | -- | 26 U | 27 U | -- | 28 U |
| Aroclor-1254 | -- | -- | -- | -- | 62 | -- | 64 | -- | 76 | -- | 66 | 63 | -- | 100 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | -- | -- | -- | -- | 41 | -- | 56 | -- | 67 | -- | 57 | 27 U | -- | 91 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 103 | -- | 120 | -- | 143 | -- | 123 | 63 | -- | 190 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WQABRAN L10601-1<br>3/12/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10623-1<br>3/27/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10785-1<br>4/3/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10786-1<br>4/8/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10787-1<br>4/17/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10788-1<br>4/24/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10930-1<br>5/1/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L10931-1<br>5/8/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L11124-1<br>5/15/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN L11178-1<br>5/20/1997<br>0-2 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

**a** The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WQABRAN<br>L11188-1<br>5/28/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L11248-1<br>6/3/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | B3b<br>LDW-B3b-S<br>8/17/2004<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-0-1<br>2/23/2006<br>0-1 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-1-2<br>2/23/2006<br>1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-2-4<br>2/23/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-6-8.2<br>2/23/2006<br>6-8.6 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-1-2<br>2/16/2006<br>1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-2-4<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | 23 | 19 | 20.2 | 28.5 | -- | 30.9 | 2.1 | 0.4 |
| Sand (total calc'd) | -- | -- | -- | -- | 9.3 | 7.2 | 36.2 | 19.1 | 24.1 | 29.5 | -- | 51.5 | 77 | 68.3 |
| Silt (total calc'd) | -- | -- | -- | -- | 66.7 | 68 | 24.19 | 43.9 | 36.5 | 25.3 | -- | 12 | 16.2 | 27.3 |
| Clay (total calc'd) | -- | -- | -- | -- | 24 | 24.7 | 10.36 | 17.9 | 19.2 | 16.6 | -- | 5.6 | 4.6 | 4.1 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | 34.55 | 61.8 | 55.7 | 41.9 | -- | 17.6 | 20.8 | 31.4 |
| **Conventional Parameters** | | | | | | | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.57 | 2.58 | 1.82 | 3.06 | 3.25 | 6.35 | 3.24 | 1.77 | 0.963 | 1.63 |
| Total solids | -- | -- | -- | -- | 50.6 | 48.5 | 66.4 | 47 | 48.1 | 38.5 | 55.5 | 72.7 | 77.9 | 76.5 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | 178 | 169 | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | | | | | | | |
| Aluminum | -- | -- | -- | -- | 23000 J | 22000 J | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | -- | 122 J | 20 J | 40 J | 60 J | 13 J | 6 UJ | 6 UJ | 6 UJ |
| Arsenic | 57 | 93 | -- | -- | 20 | 19 | ***725 J*** | ***110*** | ***170*** | **60** | **76** | 11 | 6 U | 6 U |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | 0.55 | 0.52 | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.34 | 0.31 U | 1.67 | 4.5 | ***7.6*** | ***15*** | ***20.4*** | 0.3 | 0.2 U | 0.2 U |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 30.2 | 29.7 | 42.5 | 47 | 47 | ***386*** | 50.3 | 22 | 14.3 | 10.5 |
| Cobalt | -- | -- | -- | -- | -- | -- | 31.5 | 12.6 | 15.6 | 20 | 11.9 | 6 | 5.1 | 3.9 |
| Copper | 390 | 390 | -- | -- | 61.1 | 57.9 | ***495*** | 187 | 224 | 219 | 235 | 37.9 | 18.5 | 12.7 |
| Iron | -- | -- | -- | -- | 31000 J | 30000 J | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 31.4 | 29.1 | 437 J | 173 | 286 | ***1740*** | **470** | 22 | 7 | 2 U |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.19 | 0.18 | 0.059 | **0.5** | ***0.6*** | ***1.29*** | ***0.75*** | 0.11 | 0.05 U | 0.05 U |
| Molybdenum | -- | -- | -- | -- | -- | -- | 62 | 11 | 16 | 9 | 7.7 | 0.9 | 0.6 U | 0.6 U |
| Nickel | -- | -- | -- | -- | 29.1 | 28.2 | 22.9 | 36 | 38 | 226 | 69 | 14 | 10 | 7 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 5.1 U | 5.2 U | 1.4 | 10 U | 10 U | 30 U | 9 U | 6 U | 6 U | 6 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.42 | 0.43 | 0.891 | 1 | 1.4 | 2 | 2.2 | 0.4 U | 0.4 U | 0.4 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 20 U | 21 U | 0.236 | 10 U | 10 U | 30 U | 9 U | 6 U | 6 U | 6 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- | 47.8 | 83 | 84.3 | 223 | 112 | 49.9 | 44.7 | 38.7 |
| Zinc | 410 | 960 | -- | -- | 105 | 115 | ***2080*** | ***1260*** | ***2050*** | ***3840*** | ***4550*** | 79 | 34.3 | 20.3 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WQABRAN<br>L11188-1<br>5/28/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L11248-1<br>6/3/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | B3b<br>LDW-B3b-S<br>8/17/2004<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-0-1<br>2/23/2006<br>0-1 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-1-2<br>2/23/2006<br>1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-2-4<br>2/23/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-6-8.2<br>2/23/2006<br>6-8.6 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-1-2<br>2/16/2006<br>1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-2-4<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | 120 | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | 360 | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | 320 | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | 3.8 J | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | 3.4 U | 1.9 | 2.3 | 3 U | -- | 19 | 3.3 U | 2.1 U | 1.2 U |
| Acenaphthylene | 66 | 66 | -- | -- | -- | 1.3 U | 4.4 | 2.2 | 2.8 J | -- | 3 | 3.3 U | 2.1 U | 1.2 U |
| Acenaphthene | 16 | 57 | -- | -- | -- | 1.5 | 1.9 | 2.1 | 12 | -- | **37** | 2.7 J | 2.1 U | 1.2 U |
| Anthracene | 220 | 1200 | -- | -- | -- | 5 J | 60 | 17 | 49 | -- | 52 | 8.5 | 2.1 U | 1.2 U |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | 14 J | **150** | 36 | 46 J | -- | 65 | 28 | 1.7 J | 1.2 U |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | 9.7 J | 77 | 42 | 43 | -- | 49 | 19 | 2.8 | 1.2 U |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | 5.8 J | **33** | 8.2 | 15 | -- | 11 | 4.6 | 2.1 U | 1.2 U |
| Chrysene | 110 | 460 | -- | -- | -- | 20.2 | **300** | 59 | 74 J | -- | 80 | 42 | 1.8 J | 1.2 U |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | 3.4 U | **13** | 2.6 | 4.3 | -- | 8 | 3.3 U | 2.1 U | 1.2 U |
| Fluoranthene | 160 | 1200 | -- | -- | -- | 37 J | **200** | 65 | **170** | -- | **220** | 150 | 3.7 | 1.2 U |
| Fluorene | 23 | 79 | -- | -- | -- | 2.7 J | 8.2 | 3.6 | 10 | -- | **43** | 2 J | 2.1 U | 1.2 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | 7.8 J | **36** | 10 | 18 J | -- | 9.9 | 5.3 | 2.1 U | 1.2 U |
| Naphthalene | 99 | 170 | -- | -- | -- | 3.4 UJ | 2 | 3.9 | 4.6 | -- | 37 | 2 J | 2.1 U | 1.2 U |
| Phenanthrene | 100 | 480 | -- | -- | -- | 16 J | 42 | 18 | 37 | -- | **130** | 16 | 2.1 U | 1.2 U |
| Pyrene | 1000 | 1400 | -- | -- | -- | 30 J | 130 | 78 | 110 J | -- | 230 | 96 | 7.9 | 1.2 U |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | 30 J | 160 | 110 | 98 | -- | 120 | 55 | 7.3 | 1.2 U |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | 25 J | 120 | 47 | 120 J | -- | 300 | 32 J | 2.1 U | 1.2 U |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | 150 J | **1100** | 420 | 580 J | -- | 790 | 400 | 25 J | 1.2 U |
| **PAHs (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | 14 | 62 U | 99 U | 2600 | 400 | 59 U | 20 U | 20 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | 89 U | 34 | 69 | 99 U | ***4500*** | 610 | 59 U | 20 U | 20 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | 33 U | 80 | 67 | 90 J | 93 J | 98 | 59 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | -- | 39 | 35 | 65 | 380 | ***4600*** | 1200 | 48 J | 20 U | 20 U |
| Anthracene | -- | -- | 960 | 4400 | -- | 130 J | 1100 | 520 | 1600 | ***1900*** | 1700 | 150 | 20 U | 20 U |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | 350 J | 2800 | 1100 | 1500 J | ***1500*** | 2100 | 490 | 16 J | 20 U |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | 250 J | 1400 | 1300 | 1400 | 940 | 1600 | 340 | 27 | 20 U |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | 1300 | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | 538 | 1700 | 2200 | 1800 | 1700 | 2500 | 500 | 40 | 20 U |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | 240 J | 1200 | 1300 | 1400 | 990 | 1300 | 470 | 30 | 20 U |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | 150 J | 600 | 250 | 490 | 140 J | 350 | 82 | 20 U | 20 U |
| Chrysene | -- | -- | 1400 | 2800 | -- | 520 | 5400 | 1800 | 2400 J | ***1800*** | 2600 | 740 | 17 J | 20 U |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | 89 U | 240 | 80 | 140 | 140 U | 260 | 59 U | 20 U | 20 U |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | 960 J | 3600 | 2000 | 5600 | ***7400*** | 7100 | 2600 | 36 | 20 U |

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WQABRAN<br>L11188-1<br>5/28/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L11248-1<br>6/3/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | B3b<br>LDW-B3b-S<br>8/17/2004<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-0-1<br>2/23/2006<br>0-1 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-1-2<br>2/23/2006<br>1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-2-4<br>2/23/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-6-8.2<br>2/23/2006<br>6-8.6 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-1-2<br>2/16/2006<br>1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-2-4<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | -- | -- | 540 | 1000 | -- | 69 J | 150 | 110 | 340 | ***4300*** | 1400 | 36 J | 20 U | 20 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | 200 J | 660 | 320 | 570 J | 180 | 320 | 94 | 20 U | 20 U |
| Naphthalene | -- | -- | 2100 | 2400 | -- | 89 UJ | 36 | 120 | 150 | ***3400*** | 1200 | 35 J | 20 U | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | 410 J | 760 | 560 | 1200 | ***13000*** | 4200 | 290 | 20 U | 20 U |
| Pyrene | -- | -- | 2600 | 3300 | -- | 770 J | 2300 | 2400 | 3700 J | ***5700*** | 7600 | 1700 | 76 | 20 U |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | 780 J | 2900 | 3500 | 3200 | 2700 | 3800 | 970 | 70 | 20 U |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | 650 J | 2200 | 1440 | 3800 J | ***27000 J*** | 9800 | 560 J | 20 U | 20 U |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | 3980 J | 19900 | 12800 | 19000 J | ***20400 J*** | 25700 | 7000 | 242 J | 20 U |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | 4630 J | 22100 | 14200 | 22800 J | 48000 J | 35500 | 7600 J | 242 J | 20 U |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | 0.054 UJ | ***2.7 U*** | 0.2 U | 0.18 U | | 0.2 U | 0.33 U | 0.61 U | 0.36 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | 0.16 J | 2.7 U | 0.52 | 0.13 J | | 0.12 J | 0.33 U | 0.61 U | 0.36 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | 0.054 UJ | ***2.7 U*** | 0.3 J | 0.52 J | | 0.2 U | 0.33 U | 0.61 U | 0.36 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | 0.054 UJ | 0.055 U | 0.2 U | 0.18 UJ | | 0.2 U | 0.33 U | **0.61 U** | 0.36 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | 1.4 UJ | 50 U | 6.2 U | 6 U | 42 U | 6.6 U | 5.9 U | 5.9 U | 5.9 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | 1.4 UJ | 50 U | 62 U | 99 U | 140 U | 6.6 U | 59 U | 20 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | 4 J | 50 U | 16 | 4.2 J | 42 U | 4 J | 5.9 U | 5.9 U | 5.9 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | 1.4 UJ | 50 U | 9.3 J | 17 J | ***110 J*** | 6.6 U | 5.9 U | 5.9 U | 5.9 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | 1.4 UJ | 1 U | 6.2 U | 6 UJ | **42 U** | 6.6 U | 5.9 U | 5.9 U | 5.9 U |
| Nitrobenzene | -- | -- | -- | -- | -- | 56 U | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | 23 | 14 J | 19 | 14 J | -- | 31 | 4.9 | 1.9 J | 1.2 U |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | 1.8 | 1.5 J | 1.3 | 1.4 | -- | 0.46 J | 0.33 U | 0.61 U | 0.36 U |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | 2.2 U | 2.7 U | 2 U | 3 U | -- | 2 U | 3.3 U | 2.1 U | 1.2 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | 0.89 U | 2.7 U | 2 U | 3 U | -- | 2.1 J | 3.3 U | 2.1 U | 1.2 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | 2.2 U | 2.7 U | 2 U | 3 U | -- | 2 U | 3.3 U | 6.4 | 0.86 J |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | 1.3 U | 5.5 U | 2 U | 3 U | -- | 2 U | 3.3 U | 2.1 U | 1.2 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | 594 | 260 J | 570 | 440 J | ***2300*** | 1000 | 87 | 18 J | 20 U |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | 47 | 27 J | 40 | 44 | 42 U | 15 J | 5.9 U | 5.9 U | 5.9 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | 56 U | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | 23 U | 50 U | 62 U | 99 U | **140 U** | 69 J | 59 U | 20 U | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | 56 U | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 62 | 14 J |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | 33 U | 100 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | 110 UJ | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | 110 UJ | 50 U | 310 U | 500 U | 700 U | 330 U | 290 U | 99 U | 98 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | 56 UJ | 50 U | 310 U | 500 U | 700 U | 330 U | 290 U | 99 U | 98 U |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WQABRAN<br>L11188-1<br>5/28/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L11248-1<br>6/3/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | B3b<br>LDW-B3b-S<br>8/17/2004<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-0-1<br>2/23/2006<br>0-1 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-1-2<br>2/23/2006<br>1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-2-4<br>2/23/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-6-8.2<br>2/23/2006<br>6-8.6 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-1-2<br>2/16/2006<br>1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-2-4<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | ***250 UJ*** | 6.2 UJ | 14 J | ***42 UJ*** | 24 J | 5.9 U | 5.9 U | 5.9 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | 110 UJ | 1000 U | 620 UJ | 990 UJ | 1400 UJ | 660 U | 590 UJ | 200 UJ | 200 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | 56 UJ | 50 U | 5 J | 16 | 42 U | 6.6 | 5.9 U | 5.9 U | 5.9 U |
| 4-Methylphenol | 670 | 670 | -- | -- | -- | 56 UJ | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | 230 UJ | 50 U | 310 U | 500 U | 700 U | 330 U | 290 U | 99 U | 98 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | 230 UJ | 50 U | 310 U | 500 U | 700 U | 330 U | 290 U | 99 U | 98 U |
| 2-Nitrophenol | -- | -- | -- | -- | -- | 56 UJ | 50 U | 310 U | 500 U | 700 U | 330 U | 290 U | 99 U | 98 U |
| 4-Nitrophenol | -- | -- | -- | -- | -- | 110 UJ | 500 U | 310 U | 500 UJ | 700 U | 330 U | 290 UJ | 99 UJ | 98 UJ |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | 56 UJ | 92 J | 64 | 120 J | 150 J | 120 | 29 U | 30 U | 29 U |
| Phenol | 420 | 1200 | -- | -- | -- | 230 UJ | 52 U | 62 U | 69 J | 140 U | 66 U | 59 U | 20 U | 20 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | 2.2 U | 2 | 2.5 | 6.5 | -- | **22** | 3.3 U | 2.1 U | 1.2 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | 2.2 U | 2.7 U | 0.2 U | 0.18 U | -- | 0.2 U | 0.33 U | 0.61 U | 0.36 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | 2.2 U | 2.7 U | 5.9 UJ | ***19 UJ*** | -- | ***80 U*** | 1.8 U | 0.61 U | 0.36 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | 230 U | 100 U | 310 U | 500 U | 700 U | 330 U | 290 U | 99 U | 98 U |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | 100 U | 310 U | 500 U | 700 U | 330 U | 290 U | 99 U | 98 U |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | 100 U | 310 U | 500 U | 700 U | 330 U | 290 U | 99 U | 98 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | 500 U | 310 UJ | 500 UJ | 700 UJ | 330 U | 290 UJ | 99 UJ | 98 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | 50 U | 310 UJ | 500 UJ | 700 UJ | 330 U | 290 UJ | 99 UJ | 98 UJ |
| Aniline | -- | -- | -- | -- | -- | -- | 100 U | 62 UJ | 99 UJ | 140 UJ | 66 U | 59 UJ | 20 UJ | 20 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | 56 UJ | 50 U | ***140*** | 38 | ***210 U*** | 33 U | 29 U | 30 U | 29 U |
| Benzoic acid | 650 | 650 | -- | -- | -- | 230 UJ | ***1000 U*** | 320 | 320 | ***3000 J*** | 590 U | 78 J | 54 J | 59 U |
| Carbazole | -- | -- | -- | -- | -- | 56 U | 54 | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | 56 U | 36 | 77 | 210 | 1700 | 710 | 59 U | 20 U | 20 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | 56 U | 50 U | 6.2 U | 6 U | **42 UJ** | 6.6 U | 5.9 U | 5.9 U | 5.9 U |
| Hexachloroethane | -- | -- | -- | -- | -- | 56 UJ | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | 56 UJ | 250 U | 310 U | 500 UJ | 700 U | 330 U | 290 UJ | 99 UJ | 98 UJ |
| Isophorone | -- | -- | -- | -- | -- | 56 UJ | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | 56 UJ | 50 U | 31 U | 30 U | 210 U | 33 U | 29 U | 30 U | 29 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | 230 UJ | 250 U | 31 U | 30 U | 210 U | 33 U | 29 U | 30 U | 29 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | 56 U | 50 U | 180 UJ | 620 UJ | 7300 U | 2600 U | 32 U | 5.9 U | 5.9 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | 23 U | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | 33 U | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | 33 UJ | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | 110 UJ | 50 U | 62 U | 99 U | 140 U | 66 U | 59 U | 20 U | 20 U |

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**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WQABRAN<br>L11188-1<br>5/28/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | WQABRAN<br>L11248-1<br>6/3/1997<br>0-2 cm<br>East Nav. Channel - Lafarge | B3b<br>LDW-B3b-S<br>8/17/2004<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-0-1<br>2/23/2006<br>0-1 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-1-2<br>2/23/2006<br>1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-2-4<br>2/23/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC17<br>LDW-SC17-6-8.2<br>2/23/2006<br>6-8.6 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-1-2<br>2/16/2006<br>1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC18<br>LDW-SC18-2-4<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | 2.3 U | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | 8.5 | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | 1.9 | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | 1.2 U | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | 11 | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | 1.6 | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | 6.2 U | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | 1.6 U | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | 130 U | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | 1.6 | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | 21 | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | 6.2 U | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | -- | 6.1 | **19** | **40** | **32** | -- | **59** | 10 | 2 | 0.24 U |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | -- | 27 U | 10 U | 220 U | 85 U | 900 U | 180 U | 27 U | 3.9 U | 3.9 U |
| Aroclor-1221 | -- | -- | -- | -- | -- | 27 U | 20 U | 220 U | 85 U | 900 U | 180 U | 27 U | 3.9 U | 3.9 U |
| Aroclor-1232 | -- | -- | -- | -- | -- | 27 U | 10 U | 220 U | 85 U | 900 U | 180 U | 27 U | 3.9 U | 3.9 U |
| Aroclor-1242 | -- | -- | -- | -- | -- | 27 U | 10 U | 220 U | 85 U | 900 U | 480 | 27 U | 3.9 U | 3.9 U |
| Aroclor-1248 | -- | -- | -- | -- | -- | 27 U | 10 U | 390 | 320 | 1700 | 180 U | 38 | 5 | 3.9 U |
| Aroclor-1254 | -- | -- | -- | -- | -- | 68 | 180 | 510 | 500 | 2700 | 1000 | 80 | 9 | 3.9 U |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | -- | -- | -- | -- | -- | 90 | 170 | 320 | 220 | 5400 | 450 | 64 | 5.6 | 3.9 U |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | -- | 158 | 350 | 1220 | 1040 | 9800 | 1900 | 182 | 19.6 | 3.9 U |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | 6200 | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | 678 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | 27.7 J | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | 13900 C | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | C90 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | 5270 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | 18900 C | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | 229 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | 13700 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | 234 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | 41.2 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | 20400 C | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | C129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | 16300 C | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | 2100 C | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | C156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | 772 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | 8.31 U | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | 8400 C | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | 169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | 41.7 J | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | 7.34 J | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

**a** The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC19<br>LDW-SC19-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-4-6<br>2/24/2006<br>4-6 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-6-7<br>2/24/2006<br>6-7 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-9-11.<br>2/24/2006<br>9-11.9 FT<br>West Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-0-2<br>2/15/2006<br>0-2 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-2-4<br>2/15/2006<br>0-61 cm<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-4-6<br>2/15/2006<br>2-4 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-8-10<br>2/15/2006<br>4-6 FT<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.1 | 0.2 | 0.1 | -- | -- | -- | 1 | -- | -- | -- | |
| Sand (total calc'd) | -- | -- | -- | -- | 13 | 6.6 | 18.2 | -- | -- | -- | 13.5 | 6 | -- | -- | |
| Silt (total calc'd) | -- | -- | -- | -- | 59.3 | 61.2 | 55.3 | -- | -- | -- | 63.6 | 61.2 | -- | -- | |
| Clay (total calc'd) | -- | -- | -- | -- | 27.7 | 31.9 | 26.2 | -- | -- | -- | 21.7 | 33 | -- | -- | |
| Fines (percent silt+clay) | -- | -- | -- | -- | 87 | 93.1 | 81.5 | -- | -- | -- | 85.3 | 94 | -- | -- | |
| **Conventional Parameters** | | | | | | | | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.28 | 1.7 | 1.56 | 1.26 | 1.54 | 0.19 | 1.49 | 1.5 | 2.22 | 1.85 | |
| Total solids | -- | -- | -- | -- | 45.8 | 50.2 | 54.3 | 53.1 | 53.9 | 80.4 | 54.15 | 53.3 | 53.1 | 60.48 | |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| **Metals (mg/kg dry weight)** | | | | | | | | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Antimony | -- | -- | -- | -- | 10 UJ | 10 UJ | 8 UJ | -- | -- | -- | 10 UJ | 9 UJ | -- | -- | |
| Arsenic | 57 | 93 | -- | -- | 20 | 20 | 24 | -- | -- | -- | 20 | 17 | -- | -- | |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.4 U | 0.4 U | 0.3 U | -- | -- | -- | 1.9 | 0.7 | -- | -- | |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Chromium | 260 | 270 | -- | -- | 36 | 35 | 30.6 | -- | -- | -- | 67 | 34.7 | -- | -- | |
| Cobalt | -- | -- | -- | -- | 8.6 | 10.1 | 8.7 | -- | -- | -- | 11.7 | 11 | -- | -- | |
| Copper | 390 | 390 | -- | -- | 101 | 89.2 | 87.9 | -- | -- | -- | 90.4 | 57 | -- | -- | |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Lead | 450 | 530 | -- | -- | 60 | 50 | 70 | -- | -- | -- | 82 | 33 | -- | -- | |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Mercury | 0.41 | 0.59 | -- | -- | 0.34 | 0.25 | 0.21 | -- | -- | -- | ***0.65*** | 0.35 | -- | -- | |
| Molybdenum | -- | -- | -- | -- | 1 | 1 | 1.3 | -- | -- | -- | 2 | 0.9 U | -- | -- | |
| Nickel | -- | -- | -- | -- | 24 | 26 | 22 | -- | -- | -- | 28 | 22 | -- | -- | |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Selenium | -- | -- | -- | -- | 10 U | 10 U | 8 U | -- | -- | -- | 10 U | 9 U | -- | -- | |
| Silver | 6.1 | 6.1 | -- | -- | 0.6 U | 0.6 U | 0.5 U | -- | -- | -- | 2.3 | 0.6 | -- | -- | |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Thallium | -- | -- | -- | -- | 10 U | 10 U | 8 U | -- | -- | -- | 10 U | 9 U | -- | -- | |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | |
| Vanadium | -- | -- | -- | -- | 69.2 | 75.4 | 64.4 | -- | -- | -- | 86.9 | 79.9 | -- | -- | |
| Zinc | 410 | 960 | -- | -- | 162 | 148 | 150 | -- | -- | -- | 173 | 104 | -- | -- | |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC19<br>LDW-SC19-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-4-6<br>2/24/2006<br>4-6 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-6-7<br>2/24/2006<br>6-7 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-9-11.<br>2/24/2006<br>9-11.9 FT<br>West Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-0-2<br>2/15/2006<br>0-2 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-2-4<br>2/15/2006<br>0-61 cm<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-4-6<br>2/15/2006<br>2-4 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-8-10<br>2/15/2006<br>4-6 FT<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.9 U | 4 UJ | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.6 U | 5.7 U | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.7 U | 3.8 U | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 2.6 U | 3.5 U | 3.8 U | -- | -- | -- | 1.3 U | 1.3 UJ | -- | -- |
| Acenaphthylene | 66 | 66 | -- | -- | 2 J | 2.8 J | 3.8 U | -- | -- | -- | 0.74 J | 1.3 UJ | -- | -- |
| Acenaphthene | 16 | 57 | -- | -- | 2.6 U | 3.5 U | 3.8 U | -- | -- | -- | 1.3 U | 1.3 UJ | -- | -- |
| Anthracene | 220 | 1200 | -- | -- | 6.6 | 7.6 | 4 | -- | -- | -- | 2.9 | 1.4 J | -- | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 17 | 11 | 9.6 | -- | -- | -- | 5.8 | 2.5 J | -- | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 13 | 23 | 13 | -- | -- | -- | 6.3 | 2.6 J | -- | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 3.6 | 4 | 4 | -- | -- | -- | 1.3 J | 1.3 UJ | -- | -- |
| Chrysene | 110 | 460 | -- | -- | 31 | 26 | 15 | -- | -- | -- | 8.1 | 3.3 J | -- | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 1.7 J | 2.4 J | 3.8 U | -- | -- | -- | 1.3 U | 1.3 UJ | -- | -- |
| Fluoranthene | 160 | 1200 | -- | -- | 29 | 16 | 17 | -- | -- | -- | 19 | 11 J | -- | -- |
| Fluorene | 23 | 79 | -- | -- | 2 J | 2.9 J | 3.8 U | -- | -- | -- | 0.81 J | 1.3 UJ | -- | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 4 | 5.4 | 4.4 | -- | -- | -- | 1.2 J | 1.3 UJ | -- | -- |
| Naphthalene | 99 | 170 | -- | -- | 2.6 U | 3.5 U | 3.8 U | -- | -- | -- | 0.81 J | 1.3 UJ | -- | -- |
| Phenanthrene | 100 | 480 | -- | -- | 11 | 12 | 10 | -- | -- | -- | 4.4 | 3.1 J | -- | -- |
| Pyrene | 1000 | 1400 | -- | -- | 53 J | 120 J | 51 J | -- | -- | -- | 21 | 11 J | -- | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 49 | 84 | 50 | -- | -- | -- | 18 | 8.4 J | -- | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 21 J | 25 J | 14 | -- | -- | -- | 9.7 J | 4.5 J | -- | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 200 J | 290 J | 160 J | -- | -- | -- | 82 J | 38 J | -- | -- |
| **PAHs (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| Acenaphthylene | -- | -- | 1300 | 1300 | 46 J | 48 J | 59 U | -- | -- | -- | 11 J | 20 UJ | -- | -- |
| Acenaphthene | -- | -- | 500 | 730 | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| Anthracene | -- | -- | 960 | 4400 | 150 | 130 | 63 | -- | -- | -- | 43 | 21 J | -- | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 380 | 180 | 150 | -- | -- | -- | 86 | 38 J | -- | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 300 | 390 | 200 | -- | -- | -- | 94 | 39 J | -- | -- |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 610 | 860 | 450 | -- | -- | -- | 150 | 77 J | -- | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 510 | 560 | 330 | -- | -- | -- | 120 | 49 J | -- | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 82 | 68 | 62 | -- | -- | -- | 20 J | 20 UJ | -- | -- |
| Chrysene | -- | -- | 1400 | 2800 | 700 | 440 | 230 | -- | -- | -- | 120 | 50 J | -- | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 38 J | 40 J | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | 660 | 270 | 260 | -- | -- | -- | 290 | 160 J | -- | -- |

**Table B-1**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC19<br>LDW-SC19-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-4-6<br>2/24/2006<br>4-6 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-6-7<br>2/24/2006<br>6-7 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-9-11.<br>2/24/2006<br>9-11.9 FT<br>West Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-0-2<br>2/15/2006<br>0-2 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-2-4<br>2/15/2006<br>0-61 cm<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-4-6<br>2/15/2006<br>2-4 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-8-10<br>2/15/2006<br>4-6 FT<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | -- | -- | 540 | 1000 | 46 J | 49 J | 59 U | -- | -- | -- | 12 J | 20 UJ | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 92 | 92 | 69 | -- | -- | -- | 18 J | 20 UJ | -- | -- |
| Naphthalene | -- | -- | 2100 | 2400 | 60 U | 59 U | 59 U | -- | -- | -- | 12 J | 20 UJ | -- | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | 250 | 200 | 160 | -- | -- | -- | 66 | 46 J | -- | -- |
| Pyrene | -- | -- | 2600 | 3300 | 1200 J | 2100 J | 800 J | -- | -- | -- | 320 | 160 J | -- | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 1120 | 1420 | 780 | -- | -- | -- | 270 | 126 J | -- | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 490 J | 430 J | 220 | -- | -- | -- | 144 J | 67 J | -- | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 4600 J | 5000 J | 2550 J | -- | -- | -- | 1220 J | 570 J | -- | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | 5100 J | 5400 J | 2770 J | -- | -- | -- | 1360 J | 640 J | -- | -- |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.26 U | 0.35 U | 0.38 U | -- | -- | -- | 0.4 U | 0.4 U | -- | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.26 U | 0.35 U | 0.38 U | -- | -- | -- | 0.4 U | 1.3 | -- | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.26 U | 0.35 U | 0.38 U | -- | -- | -- | 0.4 U | 0.4 U | -- | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.26 U | 0.35 U | **0.38 U** | -- | -- | -- | **0.4 U** | 0.13 U | -- | -- |
| **Benzenes (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6 U | 6 U | 5.9 U | -- | -- | -- | 6 U | 6 U | -- | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6 U | 6 U | 5.9 U | -- | -- | -- | 6 U | 20 | -- | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6 U | 6 U | 5.9 U | -- | -- | -- | 6 U | 6 U | -- | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | 6 U | 6 U | 5.9 U | -- | -- | -- | 6 U | 1.9 U | -- | -- |
| Nitrobenzene | -- | -- | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 9.6 | 8.2 | 17 | -- | -- | -- | 42 | 4.7 J | -- | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.5 | 0.82 | 0.96 | -- | -- | -- | 2.8 | 1.1 | -- | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | 2.6 U | 3.5 U | 3.8 U | -- | -- | -- | 1.3 U | 1.3 UJ | -- | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | 2.6 U | 3.5 U | 3.8 U | -- | -- | -- | 1.3 U | 1.3 UJ | -- | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.6 U | 3.5 U | 1.9 J | -- | -- | -- | 1.6 | 1.5 J | -- | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.6 U | 3.5 U | 3.8 U | -- | -- | -- | 1.3 U | 1.3 UJ | -- | -- |
| **Phthalates (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 220 | 140 | 270 | -- | -- | -- | 620 | 71 J | -- | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 34 | 14 | 15 | -- | -- | -- | 41 | 17 | -- | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 60 U | 59 U | 30 J | -- | -- | -- | 24 | 23 J | -- | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| **Phenols (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 U | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 300 U | 300 U | 300 U | -- | -- | -- | 100 U | 100 U | -- | -- |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 300 U | 300 U | 300 U | -- | -- | -- | 100 U | 100 U | -- | -- |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6 U | 6 U | 5.9 U | -- | -- | -- | 6 U | 6 U | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 600 UJ | 590 UJ | 590 UJ | -- | -- | -- | 200 U | 200 U | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | 4.8 J | 6 U | 5.9 U | -- | -- | -- | 6 U | 6 U | -- | -- |
| 4-Methylphenol | 670 | 670 | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 U | -- | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 300 U | 300 U | 300 U | -- | -- | -- | 100 U | 100 U | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 300 U | 300 U | 300 U | -- | -- | -- | 100 U | 100 U | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | 300 U | 300 U | 300 U | -- | -- | -- | 100 U | 100 U | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | 300 U | 300 U | 300 U | -- | -- | -- | 100 U | 100 U | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | 17 J | 30 U | 20 J | -- | -- | -- | 30 U | 30 U | -- | -- |
| Phenol | 420 | 1200 | -- | -- | 170 | 82 | 59 U | -- | -- | -- | 20 U | 20 U | -- | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 2.6 U | 3.5 U | 3.8 U | -- | -- | -- | 1.3 U | 1.3 UJ | -- | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.26 U | 0.35 U | 0.38 U | -- | -- | -- | 0.4 U | 0.13 U | -- | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.3 UJ | 1.3 UJ | 1.7 UJ | -- | -- | -- | 2.6 U | 2.1 U | -- | -- |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 300 U | 300 U | 300 U | -- | -- | -- | 100 U | 100 UJ | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | 300 UJ | 300 UJ | 300 UJ | -- | -- | -- | 100 U | 100 UJ | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | 300 UJ | 300 UJ | 300 UJ | -- | -- | -- | 100 U | 100 UJ | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 300 UJ | 300 UJ | 300 UJ | -- | -- | -- | 100 UJ | 100 UJ | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | 300 UJ | 300 UJ | 300 UJ | -- | -- | -- | 100 UJ | 100 UJ | -- | -- |
| Aniline | -- | -- | -- | -- | 60 UJ | 59 UJ | 59 UJ | -- | -- | -- | 20 UJ | 20 UJ | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 30 U | 30 U | 30 U | -- | -- | -- | 30 U | 30 U | -- | -- |
| Benzoic acid | 650 | 650 | -- | -- | 210 J | 88 J | 100 J | -- | -- | -- | 93 | 67 | -- | -- |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6 U | 6 U | 5.9 U | -- | -- | -- | 6 U | 1.9 U | -- | -- |
| Hexachloroethane | -- | -- | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 300 U | 300 U | 300 U | -- | -- | -- | 100 U | 100 UJ | -- | -- |
| Isophorone | -- | -- | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 30 U | 30 U | 30 U | -- | -- | -- | 30 U | 30 U | -- | -- |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 30 U | 30 U | 30 U | -- | -- | -- | 30 U | 30 U | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 29 UJ | 22 UJ | 27 UJ | -- | -- | -- | 38 U | 32 U | -- | -- |
| **Ethers (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 60 U | 59 U | 59 U | -- | -- | -- | 20 U | 20 UJ | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC19<br>LDW-SC19-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-4-6<br>2/24/2006<br>4-6 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-6-7<br>2/24/2006<br>6-7 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-9-11.<br>2/24/2006<br>9-11.9 FT<br>West Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-0-2<br>2/15/2006<br>0-2 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-2-4<br>2/15/2006<br>0-61 cm<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-4-6<br>2/15/2006<br>2-4 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-8-10<br>2/15/2006<br>4-6 FT<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18 U | 3.8 U | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 82 U | 17 U | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18 U | 3.8 U | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18 U | 14 U | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 65 U | 3.8 U | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 150 U | 32 U | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.1 U | 1.9 U | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.1 U | 1.9 U | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.1 U | 1.9 U | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.1 U | 1.9 U | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.1 U | 1.9 U | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.1 U | 1.9 U | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 62 U | 1.9 U | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18 U | 3.8 U | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 28 UJ | 10 UJ | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.1 U | 1.9 U | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18 U | 3.8 U | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 54 U | 11 U | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 120 U | 18 U | -- | -- |
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18 UJ | 3.8 UJ | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18 UJ | 3.8 UJ | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.1 U | 1.9 U | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 80 U | 10 U | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 910 U | 190 U | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 28 UJ | 10 UJ | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 150 U | 32 U | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 62 U | 3.8 U | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 91 UJ | 19 UJ | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **12** | **14** | **16** | **35** | ***160*** | -- | ***210*** | **40** | **18** | 5.1 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 40 U | 40 U | 20 U | 3.9 U | 39 U | 3.9 U | 180 U | 37 U | 48 U | 3.8 UJ |
| Aroclor-1221 | -- | -- | -- | -- | 40 U | 40 U | 20 U | 3.9 U | 39 U | 3.9 U | 180 U | 37 U | 20 U | 3.8 UJ |
| Aroclor-1232 | -- | -- | -- | -- | 40 U | 40 U | 20 U | 3.9 U | 39 U | 3.9 U | 180 U | 37 U | 60 U | 3.8 UJ |
| Aroclor-1242 | -- | -- | -- | -- | 40 U | 40 U | 20 U | 54 | 39 U | 3.9 U | 180 U | 37 U | 44 | 3.8 UJ |
| Aroclor-1248 | -- | -- | -- | -- | 65 | 59 | 43 | 3.9 U | 710 | 3.9 U | 1200 | 76 | 83 U | 3.8 UJ |
| Aroclor-1254 | -- | -- | -- | -- | 100 | 79 | 92 | 200 | 1100 | 3.9 U | 1300 | 250 | 170 | 7.7 UJ |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC19<br>LDW-SC19-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-4-6<br>2/24/2006<br>4-6 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-6-7<br>2/24/2006<br>6-7 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-9-11.<br>2/24/2006<br>9-11.9 FT<br>West Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-0-2<br>2/15/2006<br>0-2 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-2-4<br>2/15/2006<br>0-61 cm<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-4-6<br>2/15/2006<br>2-4 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-8-10<br>2/15/2006<br>4-6 FT<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | -- | -- | -- | -- | 110 | 95 | 110 | 190 | 610 | 3.9 U | 730 | 270 | 190 | 95 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 280 | 233 | 250 | 440 | 2400 | 3.9 U | 3200 | 600 | 400 | 95 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | 700 | 740 | 671 | -- | -- | -- | 924 | 729 | 4930 | 72.4 |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | 129 | 110 | 115 | -- | -- | -- | 273 | 314 | 2490 | 65 |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | 11.7 | 8.85 | 10.1 | -- | -- | -- | 24.8 | 33 | 299 | 1.88 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC19<br>LDW-SC19-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-4-6<br>2/24/2006<br>4-6 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-6-7<br>2/24/2006<br>6-7 FT<br>West Nav. Channel - Lafarge | LDW-SC19<br>LDW-SC19-9-11.<br>2/24/2006<br>9-11.9 FT<br>West Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-0-2<br>2/15/2006<br>0-2 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-2-4<br>2/15/2006<br>0-61 cm<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-4-6<br>2/15/2006<br>2-4 FT<br>Nav. Channel - Lafarge | LDW-SC20<br>LDW-SC20-8-10<br>2/15/2006<br>4-6 FT<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | 4.14 | 3.68 | 3.65 | -- | -- | -- | 6.08 | 1.53 | 7.19 J | 0.7 J |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | 18.8 | 13 | 13.9 | -- | -- | -- | 39.3 | 52.1 | 467 | 2.88 |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | 24.2 | 19.9 | 22.6 | -- | -- | -- | 37.7 | 23.4 | 169 | 4.62 |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | 5.25 | 3.81 | 4.24 | -- | -- | -- | 12.1 | 9.78 | 76 | 2.71 |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | 14.9 | 14 | 13.2 | -- | -- | -- | 18.6 | 6.53 | 23.7 | 2.24 |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | 0.421 J | 0.342 J | 0.341 J | -- | -- | -- | 0.545 J | 3.02 U | 8.02 | 0.128 J |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | 2.8 | 2.01 | 2.64 | -- | -- | -- | 3.78 | 1.15 | 3.61 | 1.07 |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | 1.76 | 1.28 | 1.35 | -- | -- | -- | 4.4 | 2.47 | 18.1 | 1.19 |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | 3.86 | 2.57 | 3.26 | -- | -- | -- | 6.29 | 4.87 | 28.2 | 2.99 |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | 4.59 | 2.8 | 3.3 | -- | -- | -- | 17.6 | 7.65 | 61.8 | 2.74 |
| 2,3,7,8-TCDD | -- | -- | -- | -- | 0.725 | 0.521 | 0.696 | -- | -- | -- | 1.88 | 0.496 | 0.89 J | 0.324 |
| 2,3,7,8-TCDF | -- | -- | -- | -- | 2.21 | 1.41 | 1.58 | -- | -- | -- | 6.09 | 1.26 U | 4.02 | 1.44 |
| OCDD | -- | -- | -- | -- | 6420 | 6840 | 6040 | -- | -- | -- | 8220 | 6090 | 36300 | 453 |
| OCDF | -- | -- | -- | -- | 388 | 444 | 421 | -- | -- | -- | 1050 | 1410 | 13500 | 148 |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | 18.1 J | 13.3 J | 14.8 J | -- | -- | -- | 43 J | 22.9 | 172 J | 7.67 J |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | 15.7 J | 11.9 J | 13 J | -- | -- | -- | 32.1 J | 26.6 | 214 J | 4.74 J |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | 14.1 J | 10.9 J | 12.1 J | -- | -- | -- | 29.2 J | 18.5 | 138 J | 4.99 J |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | 22.4 J | 19.2 J | 19.9 J | -- | -- | -- | 40.5 J | 27.1 | 197 J | 6.05 J |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | 22.8 J | 20.1 J | 20.5 J | -- | -- | -- | 38.7 J | 27.1 | 194 J | 5.6 J |

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

**a** The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC21<br>LDW-SC21-0-1<br>2/14/2006<br>8-10 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-10-11<br>2/14/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-1-2<br>2/14/2006<br>10-11.3 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-2-4<br>2/14/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-4-6.2<br>2/14/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-0-1.1<br>2/13/2006<br>4-6.2 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-1.1-2<br>2/13/2006<br>0-1.1 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-2-4<br>2/13/2006<br>1.1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0.5-1<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0-0.5<br>2/16/2006<br>0.5-1 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.8 | -- | 0.2 | 0.3 | -- | 4 | 3.3 | 1 | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 16.3 | -- | 5.8 | 19.6 | -- | 82.8 | 87.9 | 91 | -- | -- |
| Silt (total calc'd) | -- | -- | -- | -- | 59.9 | -- | 62.1 | 54.9 | -- | 10 | 7 | 6.9 | -- | -- |
| Clay (total calc'd) | -- | -- | -- | -- | 22.9 | -- | 31.9 | 25.3 | -- | 2.9 | 1.9 | 1.4 | -- | -- |
| Fines (percent silt+clay) | -- | -- | -- | -- | 82.8 | -- | 94 | 80.2 | -- | 12.9 | 8.9 | 8.3 | -- | -- |
| **Conventional Parameters** | | | | | | | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.98 | 1.33 | 1.49 | 1.64 | 1.94 | 2.3 | 2.18 | 1.44 | 2.17 | 2.05 |
| Total solids | -- | -- | -- | -- | 47.2 | 71.7 | 52.3 | 58 | 55.8 | 70.7 | 77.5 | 75.5 | 53.3 | 49.7 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 10 UJ | -- | 9 UJ | 8 UJ | -- | 7 UJ | 6 UJ | 6 UJ | -- | -- |
| Arsenic | 57 | 93 | -- | -- | 20 | -- | 19 | 34 | -- | 12 | 8 | 7 | -- | -- |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.7 | -- | 0.4 U | 0.6 | -- | 0.3 | 0.3 | 0.3 U | -- | -- |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 36 | -- | 34 | 32.6 | -- | 19.4 | 18.9 | 13 | -- | -- |
| Cobalt | -- | -- | -- | -- | 10 | -- | 11 | 9.9 | -- | 6.6 | 5.6 | 4.3 | -- | -- |
| Copper | 390 | 390 | -- | -- | 95.5 | -- | 85.7 | 114 | -- | 52.9 J | 28.1 J | 17.7 J | -- | -- |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 55 | -- | 46 | 107 | -- | 46 | 36 | 25 | -- | -- |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.3 | -- | 0.2 | 0.26 | -- | 0.14 | 0.14 | 0.06 U | -- | -- |
| Molybdenum | -- | -- | -- | -- | 1 | -- | 1 | 1.8 | -- | 2.3 | 2.8 | 1.1 | -- | -- |
| Nickel | -- | -- | -- | -- | 25 | -- | 27 | 21 | -- | 17 J | 15 J | 9 J | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 10 U | -- | 9 U | 8 U | -- | 7 U | 6 U | 6 U | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | 0.6 U | -- | 0.6 U | 0.5 U | -- | 0.4 U | 0.4 U | 0.4 U | -- | -- |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 10 U | -- | 9 U | 8 U | -- | 7 U | 6 U | 6 U | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 75.4 | -- | 81.5 | 69.1 | -- | 49.8 | 47.4 | 43.9 | -- | -- |
| Zinc | 410 | 960 | -- | -- | 155 | -- | 133 | 189 | -- | 76 | 67.9 | 47.9 | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC21<br>LDW-SC21-0-1<br>2/14/2006<br>8-10 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-10-11<br>2/14/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-1-2<br>2/14/2006<br>10-11.3 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-2-4<br>2/14/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-4-6.2<br>2/14/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-0-1.1<br>2/13/2006<br>4-6.2 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-1.1-2<br>2/13/2006<br>0-1.1 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-2-4<br>2/13/2006<br>1.1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0.5-1<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0-0.5<br>2/16/2006<br>0.5-1 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 3 U | -- | 4 U | 3.6 U | -- | 1.3 | 0.92 U | 1.4 U | 2.9 U | 3 U |
| Acenaphthylene | 66 | 66 | -- | -- | 3 U | -- | 4 U | 3.6 U | -- | 0.52 J | 0.83 J | 1.4 U | 2.9 U | 1.6 J |
| Acenaphthene | 16 | 57 | -- | -- | 3 U | -- | 4 U | 3.6 U | -- | 8.7 | 1.1 | 1.4 U | 2.9 U | 3 U |
| Anthracene | 220 | 1200 | -- | -- | 4.7 | -- | 3.6 J | 4.5 | -- | 13 | 1.6 | 1.4 U | 4 | 6.8 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 12 | -- | 10 | 14 | -- | 5.7 | 2.3 | 1.4 U | 13 | 21 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 14 | -- | 15 | 22 | -- | 4 | 4.1 | 1.4 U | 15 | 20 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 2.9 J | -- | 5.9 | 5.9 | -- | 1.7 | 1.8 | 1.4 U | 8.3 | 11 |
| Chrysene | 110 | 460 | -- | -- | 23 | -- | 15 | 20 | -- | 7 | 3.1 | 1.4 U | 22 | 34 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 3 U | -- | 4 U | 1.8 J | -- | 0.87 U | 0.92 U | 1.4 U | 1.1 J | 1.6 J |
| Fluoranthene | 160 | 1200 | -- | -- | 27 | -- | 20 | 37 | -- | 25 | 6.9 | 0.83 J | 19 | 45 |
| Fluorene | 23 | 79 | -- | -- | 3 U | -- | 4 U | 3.6 U | -- | 7.8 | 0.92 | 1.4 U | 2.9 U | 3 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 2.9 J | -- | 5.5 | 6.1 | -- | 1.8 | 2 | 1.4 U | 8.3 | 11 |
| Naphthalene | 99 | 170 | -- | -- | 3 U | -- | 4 U | 3.6 U | -- | 2.1 | 1.4 | 1.4 U | 2.9 U | 3 U |
| Phenanthrene | 100 | 480 | -- | -- | 9.1 | -- | 8.1 | 13 | -- | 25 | 4.6 | 1.4 U | 6.5 | 10 |
| Pyrene | 1000 | 1400 | -- | -- | 28 | -- | 27 | 57 | -- | 24 | 7.3 | 1 J | 30 | 45 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 47 | -- | 36 | 54 | -- | 9.1 | 7.2 | 1.4 U | 37 | 49 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 14 | -- | 11 J | 17 | -- | 57 J | 11 J | 1.4 U | 11 | 19 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 160 J | -- | 130 | 220 J | -- | 78 | 35 | 1.9 J | 150 J | 240 J |
| **PAHs (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 60 U | -- | 59 U | 59 U | -- | 46 | 20 U | 20 U | 62 U | 61 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 60 U | -- | 59 U | 59 U | -- | 30 | 20 U | 20 U | 62 U | 61 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 60 U | -- | 59 U | 59 U | -- | 12 J | 18 J | 20 U | 62 U | 33 J |
| Acenaphthene | -- | -- | 500 | 730 | 60 U | -- | 59 U | 59 U | -- | 200 | 25 | 20 U | 62 U | 61 U |
| Anthracene | -- | -- | 960 | 4400 | 94 | -- | 53 J | 74 | -- | 290 | 34 | 20 U | 86 | 140 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 230 | -- | 150 | 230 | -- | 130 | 51 | 20 U | 280 | 440 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 280 | -- | 220 | 360 | -- | 91 | 90 | 20 U | 320 | 400 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 590 | -- | 310 | 480 | -- | 120 | 91 | 20 U | 530 | 600 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 350 | -- | 230 | 400 | -- | 91 | 65 | 20 U | 270 | 400 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 58 J | -- | 88 | 97 | -- | 40 | 39 | 20 U | 180 | 220 |
| Chrysene | -- | -- | 1400 | 2800 | 460 | -- | 220 | 320 | -- | 160 | 67 | 20 U | 480 | 690 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 60 U | -- | 59 U | 29 J | -- | 20 U | 20 U | 20 U | 24 J | 32 J |
| Fluoranthene | -- | -- | 1700 | 2500 | 540 | -- | 300 | 610 | -- | 580 | 150 | 12 J | 410 | 920 |

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC21<br>LDW-SC21-0-1<br>2/14/2006<br>8-10 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-10-11<br>2/14/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-1-2<br>2/14/2006<br>10-11.3 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-2-4<br>2/14/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-4-6.2<br>2/14/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-0-1.1<br>2/13/2006<br>4-6.2 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-1.1-2<br>2/13/2006<br>0-1.1 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-2-4<br>2/13/2006<br>1.1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0.5-1<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0-0.5<br>2/16/2006<br>0.5-1 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | -- | -- | 540 | 1000 | 60 U | -- | 59 U | 59 U | -- | 180 | 20 | 20 U | 62 U | 61 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 57 J | -- | 82 | 100 | -- | 42 | 44 | 20 U | 180 | 220 |
| Naphthalene | -- | -- | 2100 | 2400 | 60 U | -- | 59 U | 59 U | -- | 48 | 30 | 20 U | 62 U | 61 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 180 | -- | 120 | 210 | -- | 570 | 100 | 20 U | 140 | 210 |
| Pyrene | -- | -- | 2600 | 3300 | 560 | -- | 400 | 930 | -- | 550 | 160 | 15 J | 660 | 920 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 940 | -- | 540 | 880 | -- | 210 | 156 | 20 U | 800 | 1000 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 270 | -- | 170 J | 280 | -- | 1300 J | 230 J | 20 U | 230 | 380 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3130 J | -- | 2000 | 3560 J | -- | 1800 | 760 | 27 J | 3330 J | 4840 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 3400 J | -- | 2170 J | 3840 J | -- | 3100 J | 980 J | 27 J | 3560 J | 5230 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.3 U | -- | 0.4 U | 0.36 U | -- | 0.26 U | 0.27 U | 0.41 U | 0.29 U | 0.3 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.3 U | -- | 0.4 U | 0.36 U | -- | 0.13 J | 0.27 U | 0.41 U | 0.29 U | 0.18 J |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.3 U | -- | 0.4 U | 0.36 U | -- | 0.26 U | 0.27 U | 0.41 U | 0.29 U | 0.3 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.3 U | -- | **0.4 U** | 0.36 U | -- | 0.26 U | 0.27 U | **0.41 U** | 0.29 U | 0.3 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6 U | -- | 5.9 U | 5.9 U | -- | 5.9 U | 5.9 U | 5.9 U | 6.2 U | 6.1 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6 U | -- | 5.9 U | 5.9 U | -- | 3 J | 5.9 U | 5.9 U | 6.2 U | 3.7 J |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6 U | -- | 5.9 U | 5.9 U | -- | 5.9 U | 5.9 U | 5.9 U | 6.2 U | 6.1 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 6 U | -- | 5.9 U | 5.9 U | -- | 5.9 U | 5.9 U | 5.9 U | 6.2 U | 6.1 U |
| Nitrobenzene | -- | -- | -- | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 18 | -- | 23 | 37 | -- | 2.4 | 0.92 U | 1.4 U | 19 | 17 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 2.2 | -- | 2.8 | 2.8 | -- | 0.26 UJ | 0.27 UJ | 0.41 UJ | 1.8 J | 2 J |
| Diethyl phthalate | 61 | 110 | -- | -- | 3 U | -- | 4 U | 3.6 U | -- | 0.87 U | 0.92 U | 1.4 U | 2.9 U | 3 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 3 U | -- | 4 U | 3.6 U | -- | 0.87 U | 0.92 U | 1.4 U | 2.9 U | 3 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 1.5 J | -- | 4 U | 3.6 U | -- | 1.3 U | 1.7 U | 1.4 U | 2.9 U | 3 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 3 U | -- | 4 U | 3.6 U | -- | 0.87 U | 0.92 U | 1.4 U | 2.9 U | 3 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 360 | -- | 340 | 600 | -- | 56 | 20 U | 20 U | 420 | 340 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 44 | -- | 41 | 46 | -- | 5.9 UJ | 5.9 UJ | 5.9 UJ | 38 J | 40 J |
| Diethyl phthalate | -- | -- | 200 | 1200 | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 30 J | -- | 59 U | 59 U | -- | 29 U | 37 U | 20 U | 62 U | 61 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 300 U | -- | 300 U | 290 U | -- | 98 U | 98 U | 99 U | 310 U | 310 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 300 U | -- | 300 U | 290 U | -- | 98 U | 98 U | 99 U | 310 U | 310 U |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC21<br>LDW-SC21-0-1<br>2/14/2006<br>8-10 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-10-11<br>2/14/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-1-2<br>2/14/2006<br>10-11.3 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-2-4<br>2/14/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-4-6.2<br>2/14/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-0-1.1<br>2/13/2006<br>4-6.2 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-1.1-2<br>2/13/2006<br>0-1.1 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-2-4<br>2/13/2006<br>1.1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0.5-1<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0-0.5<br>2/16/2006<br>0.5-1 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6 U | -- | 5.9 U | 5.9 U | -- | 18 UJ | 18 UJ | 18 UJ | 6.2 U | 6.1 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 600 U | -- | 590 U | 590 U | -- | 200 U | 200 U | 200 U | 620 U | 610 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6 U | -- | 5.9 U | 5.9 U | -- | 5.9 UJ | 5.9 UJ | 5.9 UJ | 6.2 | 6.1 |
| 4-Methylphenol | 670 | 670 | -- | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 300 U | -- | 300 U | 290 U | -- | 98 U | 98 U | 99 U | 310 U | 310 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 300 U | -- | 300 U | 290 U | -- | 98 U | 98 U | 99 U | 310 U | 310 U |
| 2-Nitrophenol | -- | -- | -- | -- | 300 U | -- | 300 U | 290 U | -- | 98 U | 98 U | 99 U | 310 U | 310 U |
| 4-Nitrophenol | -- | -- | -- | -- | 300 U | -- | 300 U | 290 U | -- | 98 U | 98 U | 99 U | 310 U | 310 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 30 U | -- | 30 U | 29 U | -- | 30 U | 30 U | 30 U | 31 U | 31 U |
| Phenol | 420 | 1200 | -- | -- | 60 U | -- | 59 U | 59 U | -- | 24 | 15 J | 14 J | 65 U | 400 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 3 U | -- | 4 U | 3.6 U | -- | 5.2 | 0.92 U | 1.4 U | 2.9 U | 3 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.3 U | -- | 0.4 U | 0.36 U | -- | 0.26 U | 0.27 U | 0.41 U | 0.29 U | 0.3 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1 U | -- | 1.6 U | 1.7 U | -- | 1.7 U | 0.78 U | 0.41 U | 0.29 U | 0.3 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 300 U | -- | 300 U | 290 U | -- | 98 U | 98 U | 99 U | 310 U | 310 U |
| 3-Nitroaniline | -- | -- | -- | -- | 300 U | -- | 300 U | 290 U | -- | 98 UJ | 98 UJ | 99 UJ | 310 U | 310 U |
| 4-Nitroaniline | -- | -- | -- | -- | 300 U | -- | 300 U | 290 U | -- | 98 U | 98 U | 99 U | 310 U | 310 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 300 UJ | -- | 300 UJ | 290 UJ | -- | 98 UJ | 98 UJ | 99 UJ | 310 U | 310 U |
| 4-Chloroaniline | -- | -- | -- | -- | 300 UJ | -- | 300 UJ | 290 UJ | -- | 98 UJ | 98 UJ | 99 UJ | 310 UJ | 310 UJ |
| Aniline | -- | -- | -- | -- | 60 UJ | -- | 59 UJ | 59 UJ | -- | 20 UJ | 20 UJ | 20 UJ | 62 UJ | 61 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | 30 U | -- | 30 U | 29 U | -- | 30 UJ | 30 UJ | 30 UJ | 31 U | 31 U |
| Benzoic acid | 650 | 650 | -- | -- | 95 | -- | 120 | 100 | -- | 59 UJ | 59 UJ | 59 UJ | 620 U | 610 U |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 60 U | -- | 59 U | 59 U | -- | 120 | 20 U | 20 U | 62 U | 61 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6 U | -- | 5.9 U | 5.9 U | -- | 5.9 U | 5.9 U | 5.9 U | 6.2 U | 6.1 U |
| Hexachloroethane | -- | -- | -- | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 300 U | -- | 300 U | 290 U | -- | 98 U | 98 U | 99 U | 310 U | 310 U |
| Isophorone | -- | -- | -- | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 30 U | -- | 30 U | 29 U | -- | 30 UJ | 30 UJ | 30 UJ | 31 U | 31 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 30 U | -- | 30 U | 29 U | -- | 30 UJ | 30 UJ | 30 UJ | 31 U | 31 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 20 U | -- | 24 U | 28 U | -- | 40 U | 17 U | 5.9 U | 6.2 U | 6.1 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 60 U | -- | 59 U | 59 U | -- | 20 U | 20 U | 20 U | 62 U | 61 U |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC21<br>LDW-SC21-0-1<br>2/14/2006<br>8-10 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-10-11<br>2/14/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-1-2<br>2/14/2006<br>10-11.3 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-2-4<br>2/14/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-4-6.2<br>2/14/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-0-1.1<br>2/13/2006<br>4-6.2 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-1.1-2<br>2/13/2006<br>0-1.1 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-2-4<br>2/13/2006<br>1.1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0.5-1<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0-0.5<br>2/16/2006<br>0.5-1 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **13** | 0.29 U | 9.7 | **23 J** | ***87*** | 2.4 | 1.2 J | 0.54 J | -- | -- |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 3.9 U | 7.9 U | 19 U | 120 U | 3.9 U | 3.9 UJ | 3.9 U | -- | -- |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 3.9 U | 7.9 U | 19 U | 120 U | 3.9 U | 3.9 UJ | 3.9 U | -- | -- |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 3.9 U | 7.9 U | 19 U | 120 U | 3.9 U | 3.9 UJ | 3.9 U | -- | -- |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 3.9 U | 7.9 U | 19 U | 320 | 3.9 U | 3.9 UJ | 3.9 U | -- | -- |
| Aroclor-1248 | -- | -- | -- | -- | 50 | 3.9 U | 28 | 90 | 120 U | 5.1 | 3.9 UJ | 3.9 U | -- | -- |
| Aroclor-1254 | -- | -- | -- | -- | 100 | 3.9 U | 63 | 170 | 820 | 23 | 8.5 J | 3.9 U | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC21<br>LDW-SC21-0-1<br>2/14/2006<br>8-10 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-10-11<br>2/14/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-1-2<br>2/14/2006<br>10-11.3 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-2-4<br>2/14/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-4-6.2<br>2/14/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-0-1.1<br>2/13/2006<br>4-6.2 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-1.1-2<br>2/13/2006<br>0-1.1 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-2-4<br>2/13/2006<br>1.1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0.5-1<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0-0.5<br>2/16/2006<br>0.5-1 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | -- | -- | -- | -- | 99 | 3.9 U | 54 | 120 J | 540 | 28 | 17 J | 7.8 J | -- | -- |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 250 | 3.9 U | 145 | 380 J | 1680 | 56 | 26 J | 7.8 J | -- | -- |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC21<br>LDW-SC21-0-1<br>2/14/2006<br>8-10 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-10-11<br>2/14/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-1-2<br>2/14/2006<br>10-11.3 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-2-4<br>2/14/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SC21<br>LDW-SC21-4-6.2<br>2/14/2006<br>2-4 FT<br>West Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-0-1.1<br>2/13/2006<br>4-6.2 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-1.1-2<br>2/13/2006<br>0-1.1 FT<br>East Nav. Channel - Lafarge | LDW-SC22<br>LDW-SC22-2-4<br>2/13/2006<br>1.1-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0.5-1<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-0-0.5<br>2/16/2006<br>0.5-1 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

**a** The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID / Sample ID / Sample Date / Sample Depth / SMS 2LAET[a] | LDW-SC23 LDW-SC23-0-2 2/16/2006 0-0.5 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-1.5-2 2/16/2006 0-2 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-1-1.5 2/16/2006 1.5-2 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-2.5-3 2/16/2006 1-1.5 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-2-2.5 2/16/2006 2.5-3 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-2-4 2/16/2006 2-2.5 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-3.5-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-3-3.5 2/16/2006 3.5-4 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-4-6 2/16/2006 3-3.5 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-6-8 2/16/2006 4-6 FT East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 7.2 | -- | -- | -- | -- | 5.6 | -- | -- | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 26.3 | -- | -- | -- | -- | 17.7 | -- | -- | -- | -- |
| Silt (total calc'd) | -- | -- | -- | -- | 46 | -- | -- | -- | -- | 54.3 | -- | -- | -- | -- |
| Clay (total calc'd) | -- | -- | -- | -- | 20.9 | -- | -- | -- | -- | 22.3 | -- | -- | -- | -- |
| Fines (percent silt+clay) | -- | -- | -- | -- | 67 | -- | -- | -- | -- | 76.6 | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.12 | 1.6 | 1.76 | 1.39 | 1.78 | 2.14 | 2.29 | 1.3 | 1.46 | 2.25 |
| Total solids | -- | -- | -- | -- | 62.7 | 62.2 | 54.8 | 51.1 | 55.3 | 49.5 | 51.4 | 51.7 | 52.1 | 55.6 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 8 UJ | -- | -- | -- | -- | 9 UJ | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | 18 | -- | -- | -- | -- | 20 | -- | -- | -- | -- |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.5 | -- | -- | -- | -- | 0.4 U | -- | -- | -- | -- |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 29.5 | -- | -- | -- | -- | 33.4 | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | 9 | -- | -- | -- | -- | 10.9 | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | 67.7 | -- | -- | -- | -- | 73.3 | -- | -- | -- | -- |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 56 J | -- | -- | -- | -- | 46 J | -- | -- | -- | -- |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.2 | -- | -- | -- | -- | 0.2 | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | 0.8 U | -- | -- | -- | -- | 1.1 | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | 22 | -- | -- | -- | -- | 28 | -- | -- | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 8 U | -- | -- | -- | -- | 9 U | -- | -- | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | 0.5 U | -- | -- | -- | -- | 0.6 U | -- | -- | -- | -- |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 8 U | -- | -- | -- | -- | 9 U | -- | -- | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 65 | -- | -- | -- | -- | 71.5 | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | 122 J | -- | -- | -- | -- | 159 J | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID / Sample ID / Sample Date / Sample Depth / SMS 2LAET[a] | LDW-SC23 LDW-SC23-0-2 2/16/2006 0-0.5 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-1.5-2 2/16/2006 0-2 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-1-1.5 2/16/2006 1.5-2 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-2.5-3 2/16/2006 1-1.5 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-2-2.5 2/16/2006 2.5-3 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-2-4 2/16/2006 2-2.5 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-3.5-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-3-3.5 2/16/2006 3.5-4 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-4-6 2/16/2006 3-3.5 FT East Nav. Channel - Lafarge | LDW-SC23 LDW-SC23-6-8 2/16/2006 4-6 FT East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 8 | -- | -- | -- | -- | 4 U | -- | -- | 7.8 U | -- |
| Dibutyltin as ion | -- | -- | -- | -- | 12 | -- | -- | -- | -- | 5.7 U | -- | -- | 11 U | -- |
| Tributyltin as ion | -- | -- | -- | -- | 55 | -- | -- | -- | -- | 47 | -- | -- | 27 | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 2.8 U | 3.9 U | 3.5 U | 4.5 U | 5 | 2.8 U | 2.7 U | 9.2 | 4.5 U | -- |
| Acenaphthylene | 66 | 66 | -- | -- | 2.8 U | 3.9 U | 3.5 U | 4.5 U | 2.3 J | 4.4 | 3.3 | 10 | 4.5 U | -- |
| Acenaphthene | 16 | 57 | -- | -- | 2.8 U | 3 J | 2.3 J | **41** | 8.4 | **16** | ***66*** | ***160*** | 4.5 U | -- |
| Anthracene | 220 | 1200 | -- | -- | 3.1 | 5.4 | 6.8 | 12 | 27 | 75 | 48 | **680** | 3.6 J | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 9 | 21 | 18 | 16 | 62 | **150** | **120** | ***550*** | 12 | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 11 | 23 | 23 | 7.9 | 46 | **120** | 52 | ***230*** | 14 | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 2.1 J | 12 | 11 | 3.3 J | 24 | 23 | 12 | **56** | 6.8 | -- |
| Chrysene | 110 | 460 | -- | -- | 14 | 31 | 28 | 17 | 62 | **340** | **140** | ***600*** | 15 | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.8 U | 2 J | 1.6 J | 1 | 4.5 | 8.4 | 3.5 | **14** | 2.9 | -- |
| Fluoranthene | 160 | 1200 | -- | -- | 21 J | 47 | 33 | 86 | 130 | **350 J** | **440** | ***1800*** | 29 | -- |
| Fluorene | 23 | 79 | -- | -- | 2.8 U | 2.8 J | 2.7 J | 17 | 11 | 12 | 20 | ***140*** | 4.5 U | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 2.5 J | 13 | 12 | 3.5 J | 22 | 32 J | 16 | **72** | 5.7 | -- |
| Naphthalene | 99 | 170 | -- | -- | 2.8 U | 3.9 U | 3.5 U | 4.5 U | 6.2 | 2.8 U | 2.4 J | 15 | 4.5 U | -- |
| Phenanthrene | 100 | 480 | -- | -- | 4.7 | 30 | 22 | 27 | 96 | 56 | 57 | ***920*** | 10 | -- |
| Pyrene | 1000 | 1400 | -- | -- | 30 | 63 | 57 | 50 | 170 | 180 | 190 | **1100** | 51 | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 32 | 48 | 53 | 19 | 86 | **280** | 140 | ***490*** | 33 | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 8 | 41 J | 34 J | 97 | 150 J | 160 | 200 J | ***1900*** | 14 J | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 120 J | 260 J | 240 J | 200 J | 610 | **1500 J** | **1100** | **4900** | 170 | -- |
| **PAHs (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 59 U | 62 U | 61 U | 62 U | 70 | 59 U | 150 | 170 | 66 U | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 59 U | 62 U | 61 U | 62 U | 89 | 59 U | 61 U | 120 | 66 U | -- |
| Acenaphthylene | -- | -- | 1300 | 1300 | 59 U | 62 U | 61 U | 62 U | 41 J | 95 | 76 | 130 | 66 U | -- |
| Acenaphthene | -- | -- | 500 | 730 | 59 U | 48 J | 40 J | 570 | 150 | 340 | 1500 | 2100 | 66 U | -- |
| Anthracene | -- | -- | 960 | 4400 | 66 | 87 | 120 | 170 | 480 | 1600 | 1100 | 8800 | 53 J | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 190 | 340 | 310 | 220 | 1100 | 3200 | 2700 | 7100 | 180 | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 230 | 360 | 410 | 110 | 820 | 2500 | 1200 | 3000 | 200 | -- |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 350 | 400 | 540 | 140 | 800 | 3800 | 1900 | 3900 | 300 | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 320 | 370 | 390 | 120 | 730 | 2200 | 1200 | 2500 | 180 | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 44 J | 190 | 200 | 46 J | 420 | 490 | 270 | 730 | 100 | -- |
| Chrysene | -- | -- | 1400 | 2800 | 290 | 500 | 500 | 230 | 1100 | 7200 | 3100 | 7800 | 220 | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 59 U | 32 J | 29 J | 14 | 80 | 180 | 80 | 180 | 43 | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | 450 J | 750 | 580 | 1200 | 2400 | 7400 J | 10000 | 24000 | 420 | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>LDW-SC23-0-2<br>2/16/2006<br>0-0.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-1.5-2<br>2/16/2006<br>0-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-1-1.5<br>2/16/2006<br>1.5-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2.5-3<br>2/16/2006<br>1-1.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2-2.5<br>2/16/2006<br>2.5-3 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2-4<br>2/16/2006<br>2-2.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-3.5-4<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-3-3.5<br>2/16/2006<br>3.5-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-4-6<br>2/16/2006<br>3-3.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-6-8<br>2/16/2006<br>4-6 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | -- | -- | 540 | 1000 | 59 U | 44 J | 47 J | 230 | 190 | 260 | 460 | 1800 | 66 U | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 52 J | 210 | 210 | 49 J | 400 | 680 J | 370 | 930 | 83 | -- |
| Naphthalene | -- | -- | 2100 | 2400 | 59 U | 62 U | 61 U | 62 U | 110 | 59 U | 55 J | 200 | 66 U | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | 100 | 480 | 380 | 380 | 1700 | 1200 | 1300 | 12000 | 150 | -- |
| Pyrene | -- | -- | 2600 | 3300 | 640 | 1000 | 1000 | 700 | 3000 | 3800 | 4400 | 14000 | 740 | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 670 | 770 | 930 | 260 | 1530 | 6000 | 3100 | 6400 | 480 | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 170 | 660 J | 590 J | 1350 | 2700 J | 3500 | 4500 J | 25000 | 200 J | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2570 J | 4200 J | 4200 J | 2800 J | 10900 | 31500 J | 25000 | 64000 | 2470 | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | 2730 J | 4800 J | 4800 J | 4200 J | 13500 J | 34900 J | 30000 J | 89000 | 2670 J | -- |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.28 U | 0.39 UJ | 0.35 U | 0.45 U | 0.35 U | 0.28 U | 0.27 U | 0.48 U | 0.45 U | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.28 U | 0.39 UJ | 0.35 U | 0.45 U | 0.35 U | 0.28 U | 0.27 U | 0.48 U | 0.27 J | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.28 U | 0.39 UJ | 0.35 U | 0.45 UJ | 0.35 UJ | 0.28 U | 0.27 UJ | 0.48 UJ | 0.45 U | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.046 U | **0.39 UJ** | 0.35 U | **0.45 U** | 0.35 U | 0.046 U | 0.27 U | **0.48 U** | **0.45 U** | -- |
| **Benzenes (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 5.9 U | 6.2 UJ | 6.1 U | 6.2 U | 6.2 U | 5.9 U | 6.1 U | 6.2 U | 6.6 U | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 6.6 U | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 5.9 U | 6.2 UJ | 6.1 U | 6.2 U | 6.2 U | 5.9 U | 6.1 U | 6.2 U | 4 J | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 5.9 U | 6.2 UJ | 6.1 U | 6.2 UJ | 6.2 UJ | 5.9 U | 6.1 UJ | 6.2 UJ | 6.6 U | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | 0.98 U | 6.2 UJ | 6.1 U | 6.2 U | 6.2 U | 0.99 U | 6.1 U | 6.2 U | 6.6 U | -- |
| Nitrobenzene | -- | -- | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 8.5 | 6.9 | 18 | 4.9 | 6.2 | **75** | 17 | **60** | 27 | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.3 | 0.63 J | 1.7 J | 0.58 | 0.48 | 1.1 | 1.3 | 2.5 | 1.6 | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | 2.8 U | 3.9 U | 3.5 U | 4.5 U | 3.5 U | 2.8 U | 2.7 U | 4.8 U | 4.5 U | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | 2.8 U | 3.9 U | 3.5 U | 4.5 U | 3.5 U | 2.8 U | 2.7 U | 4.8 U | 0.45 U | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.8 U | 3.9 U | 3.5 U | 4.5 U | 3.5 U | 2.8 U | 2.7 U | 4.8 U | 4.5 U | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.8 U | 3.9 U | 3.5 U | 4.5 U | 3.5 U | 2.8 U | 2.7 U | 4.8 U | 4.5 U | -- |
| **Phthalates (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 180 | 110 | 320 | 68 | 110 | 1600 | 380 | 780 | 390 | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 28 | 10 J | 30 J | 8 | 8.6 | 24 | 30 | 32 | 24 | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 6.6 U | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| **Phenols (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 290 U | 310 U | 310 U | 310 U | 310 U | 300 U | 310 U | 310 U | 330 U | -- |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 290 U | 310 U | 310 U | 310 U | 310 U | 300 U | 310 U | 310 U | 330 U | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>LDW-SC23-0-2<br>2/16/2006<br>0-0.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-1.5-2<br>2/16/2006<br>0-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-1-1.5<br>2/16/2006<br>1.5-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2.5-3<br>2/16/2006<br>1-1.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2-2.5<br>2/16/2006<br>2.5-3 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2-4<br>2/16/2006<br>2-2.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-3.5-4<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-3-3.5<br>2/16/2006<br>3.5-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-4-6<br>2/16/2006<br>3-3.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-6-8<br>2/16/2006<br>4-6 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 5.9 UJ | 6.2 U | 6.1 U | 6.2 UJ | 6.2 UJ | 5.9 UJ | 6.1 UJ | 9.9 J | 6.6 UJ | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 590 UJ | 620 U | 610 U | 620 U | 620 U | 590 UJ | 610 U | 620 U | 660 U | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | 7.1 | 9.3 | 6.1 U | 6.2 UJ | 8.6 J | 10 | 6.1 J | 8.7 J | 6.6 U | -- |
| 4-Methylphenol | 670 | 670 | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 290 U | 310 U | 310 U | 310 U | 310 U | 300 U | 310 U | 310 U | 330 U | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 290 U | 310 U | 310 U | 310 U | 310 U | 300 U | 310 U | 310 U | 330 U | -- |
| 2-Nitrophenol | -- | -- | -- | -- | 290 U | 310 U | 310 U | 310 U | 310 U | 300 U | 310 U | 310 U | 330 U | -- |
| 4-Nitrophenol | -- | -- | -- | -- | 290 U | 310 U | 310 U | 310 U | 310 U | 300 UJ | 310 U | 310 U | 330 U | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | 29 U | 31 U | 31 U | 31 U | 31 U | 30 U | 31 U | 31 U | 40 | -- |
| Phenol | 420 | 1200 | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 2.8 U | 3.9 U | 3.5 U | 7.9 | 6.7 | 5.1 | 14 | **50** | 4.5 U | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.046 U | 0.39 UJ | 0.35 U | 0.45 U | 0.35 U | 0.046 U | 0.27 U | 0.48 U | 0.45 U | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1 U | 0.39 UJ | 0.35 U | 0.45 U | 0.35 U | 2.1 U | 0.27 U | 2.9 U | 6.6 U | -- |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 290 U | 310 U | 310 U | 310 U | 310 U | 300 U | 310 U | 310 U | 330 U | -- |
| 3-Nitroaniline | -- | -- | -- | -- | 290 U | 310 U | 310 U | 310 U | 310 U | 300 U | 310 U | 310 U | 330 U | -- |
| 4-Nitroaniline | -- | -- | -- | -- | 290 U | 310 U | 310 U | 310 U | 310 U | 300 U | 310 U | 310 U | 330 U | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 290 UJ | 310 U | 310 U | 310 U | 310 U | 300 UJ | 310 U | 310 U | 330 U | -- |
| 4-Chloroaniline | -- | -- | -- | -- | 290 UJ | 310 UJ | 310 UJ | 310 UJ | 310 UJ | 300 UJ | 310 UJ | 310 UJ | 330 U | -- |
| Aniline | -- | -- | -- | -- | 59 UJ | 62 UJ | 61 UJ | 62 UJ | 62 UJ | 59 UJ | 61 UJ | 62 UJ | 66 U | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 29 U | 31 UJ | 31 U | 31 U | 31 U | 30 U | 31 U | 34 U | 33 U | -- |
| Benzoic acid | 650 | 650 | -- | -- | 250 | 620 U | 610 U | 620 U | 620 U | 240 | 610 U | 620 U | 590 U | -- |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 59 U | 62 U | 61 U | 110 | 120 | 110 | 320 | 650 | 66 U | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 0.98 U | 6.2 UJ | 6.1 U | 6.2 U | 6.2 U | 0.99 U | 6.1 U | 6.2 U | 6.6 U | -- |
| Hexachloroethane | -- | -- | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 290 U | 310 U | 310 U | 310 U | 310 U | 300 UJ | 310 U | 310 U | 330 U | -- |
| Isophorone | -- | -- | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 29 U | 31 UJ | 31 U | 31 U | 31 U | 30 U | 31 U | 31 U | 33 U | -- |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 29 U | 31 UJ | 31 U | 31 U | 31 U | 30 U | 31 U | 31 U | 33 U | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 22 U | 6.2 UJ | 6.1 U | 6.2 U | 6.2 U | 45 U | 6.1 U | 38 U | 97 U | -- |
| **Ethers (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 59 U | 62 U | 61 U | 62 U | 62 U | 59 U | 61 U | 62 U | 66 U | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>LDW-SC23-0-2<br>2/16/2006<br>0-0.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-1.5-2<br>2/16/2006<br>0-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-1-1.5<br>2/16/2006<br>1.5-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2.5-3<br>2/16/2006<br>1-1.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2-2.5<br>2/16/2006<br>2.5-3 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2-4<br>2/16/2006<br>2-2.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-3.5-4<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-3-3.5<br>2/16/2006<br>3.5-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-4-6<br>2/16/2006<br>3-3.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-6-8<br>2/16/2006<br>4-6 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2 U | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.8 U | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2 U | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2 U | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2 U | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | 18 U | -- | -- | -- | -- | 7.4 U | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | 0.98 U | -- | -- | -- | -- | 2.6 U | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | 0.98 U | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | 0.98 U | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | 0.98 U | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | 1100 | -- | -- | -- | -- | 8.3 | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | 2.6 U | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | 4.7 U | -- | -- | -- | -- | 2.1 U | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2 U | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2.7 U | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | 0.98 U | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2 U | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2 U | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | 8.9 U | -- | -- | -- | -- | 9.3 U | -- | -- | -- | -- |
| Endrin aldehyde | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2 U | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2 U | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | 0.98 U | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | 0.98 U | -- | -- | -- | -- | 2.9 U | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | 98 U | -- | -- | -- | -- | 99 U | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 2.7 U | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | 18 U | -- | -- | -- | -- | 7.4 U | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | 4.7 U | -- | -- | -- | -- | 2.1 U | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | 9.8 U | -- | -- | -- | -- | 9.9 U | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 8.3 | -- | -- | -- | -- | 10 | -- | -- | **60** | **18** |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | -- | -- | -- | -- | 20 U | -- | -- | 79 U | 36 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | -- | -- | -- | -- | 20 U | -- | -- | 20 U | 36 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | -- | -- | -- | -- | 20 U | -- | -- | 120 U | 36 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | -- | -- | -- | -- | 20 U | -- | -- | 85 | 36 U |
| Aroclor-1248 | -- | -- | -- | -- | 36 | -- | -- | -- | -- | 60 | -- | -- | 160 U | 90 U |
| Aroclor-1254 | -- | -- | -- | -- | 77 | -- | -- | -- | -- | 92 | -- | -- | 380 | 190 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>LDW-SC23-0-2<br>2/16/2006<br>0-0.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-1.5-2<br>2/16/2006<br>0-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-1-1.5<br>2/16/2006<br>1.5-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2.5-3<br>2/16/2006<br>1-1.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2-2.5<br>2/16/2006<br>2.5-3 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2-4<br>2/16/2006<br>2-2.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-3.5-4<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-3-3.5<br>2/16/2006<br>3.5-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-4-6<br>2/16/2006<br>3-3.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-6-8<br>2/16/2006<br>4-6 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | -- | -- | -- | -- | 64 | -- | -- | -- | -- | 67 | -- | -- | 410 | 210 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 177 | -- | -- | -- | -- | 219 | -- | -- | 880 | 400 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>LDW-SC23-0-2<br>2/16/2006<br>0-0.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-1.5-2<br>2/16/2006<br>0-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-1-1.5<br>2/16/2006<br>1.5-2 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2.5-3<br>2/16/2006<br>1-1.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2-2.5<br>2/16/2006<br>2.5-3 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-2-4<br>2/16/2006<br>2-2.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-3.5-4<br>2/16/2006<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-3-3.5<br>2/16/2006<br>3.5-4 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-4-6<br>2/16/2006<br>3-3.5 FT<br>East Nav. Channel - Lafarge | LDW-SC23<br>LDW-SC23-6-8<br>2/16/2006<br>4-6 FT<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

**a** The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>DW-SC23-8-10.<br>2/16/2006<br>6-8 FT<br>East Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-0-1<br>2/17/2006<br>8-10.2 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-1-2<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-2-4<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SS31<br>LDW-SS31-010<br>1/21/2005<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SS32<br>LDW-SS32-010<br>1/18/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS321<br>LDW-SS321-010<br>4/2006 10:39:00<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS322<br>LDW-SS322-010<br>4/2006 9:33:00<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS323<br>LDW-SS323-010<br>4/2006 9:43:00<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS324<br>LDW-SS324-010<br>4/2006 10:22:00<br>0-10 cm<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | 1.1 | 0.2 | -- | 2.1 | 3.5 | 5 | 0.3 | 6.8 | 11.2 |
| Sand (total calc'd) | -- | -- | -- | -- | -- | 10.8 | 60 | 71 | 21 | 28.5 | 58.2 | 23.2 | 34.5 | 52.2 |
| Silt (total calc'd) | -- | -- | -- | -- | -- | 57.2 | 32.7 | 24.3 | 51.9 | 47 | 26.1 | 56 | 43.4 | 21.2 |
| Clay (total calc'd) | -- | -- | -- | -- | -- | 31.1 | 6.6 | 4.7 | 25.1 | 21 | 10.8 | 20.5 | 15.5 | 15.5 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | 88.3 | 39.3 | 29 | 77 | 68 | 36.9 | 76.5 | 58.9 | 36.7 |
| **Conventional Parameters** | | | | | | | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.63 | 1.99 | 0.304 | 0.435 | 2.17 | 2.26 | 1.43 | 0.766 | 1.74 | 1.05 |
| Total solids | -- | -- | -- | -- | 61.5 | 53.5 | 72.7 | 72.8 | 45.2 | 48.7 | 69.1 | 48.3 | 59 | 68.3 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- | 44.2 | 47.9 | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- | 12.7 | 8.98 | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- | 820 J | 390 J | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | 9 UJ | 7 UJ | 7 UJ | 2.2 J | 0.4 UJ | 0.3 UJ | 0.4 UJ | 0.3 UJ | 0.3 UJ |
| Arsenic | 57 | 93 | -- | -- | -- | 30 | 11 | 7 U | ***122*** | 15.7 | 12.9 | 13.3 | 9.5 | 17.7 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | 0.4 | 0.3 U | 0.3 U | 3.2 | 1.8 | 0.5 | 0.5 | 0.4 | 0.5 |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | -- | 34.1 | 13.7 | 11.1 | 55 | 40 | 21.1 | 35 | 27.7 | 21.7 |
| Cobalt | -- | -- | -- | -- | -- | 11 | 5.1 | 4.3 | 17.3 | 12.5 | 7.3 | 9.5 | 8.5 | 7.6 |
| Copper | 390 | 390 | -- | -- | -- | 142 | 40 | 15.4 | 245 | 124 | 53.6 | 96 | 75.9 | 71.9 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | -- | 69 | 8 | 3 U | 172 | 77 | 49 | 56 | 37 | 32 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | -- | 0.26 | 0.05 U | 0.05 U | 0.33 | 0.34 | 0.13 | 0.3 | 0.19 | 0.2 |
| Molybdenum | -- | -- | -- | -- | -- | 2.6 | 0.7 U | 0.7 U | 13 | 2 | 1.3 | 0.7 | 0.7 | 1.8 |
| Nickel | -- | -- | -- | -- | -- | 24 | 9 | 7 | 35 | 304 | 20.5 | 29 | 24.9 | 20.3 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | 9 U | 7 U | 7 U | 10 U | 10 UJ | 0.7 U | 1 U | 0.8 U | 0.7 U |
| Silver | 6.1 | 6.1 | -- | -- | -- | 0.5 U | 0.4 U | 0.4 U | 1.2 | 0.8 | 0.4 J | 0.5 J | 0.5 J | 0.5 J |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | 9 U | 7 U | 7 U | 0.4 U | 0.4 U | 0.3 U | 0.4 U | 0.3 U | 0.3 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | 71.2 | 46.4 | 41 | 84.9 | 70.5 | 44.5 | 61.6 | 57.2 | 45 |
| Zinc | 410 | 960 | -- | -- | -- | 195 | 38.3 | 22.6 | ***997*** | **414** | 107 | 155 | 118 | 102 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>DW-SC23-8-10.<br>2/16/2006<br>6-8 FT<br>East Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-0-1<br>2/17/2006<br>8-10.2 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-1-2<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-2-4<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SS31<br>LDW-SS31-010<br>1/21/2005<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SS32<br>LDW-SS32-010<br>1/18/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS321<br>LDW-SS321-010<br>4/2006 10:39:00<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS322<br>LDW-SS322-010<br>4/2006 9:33:00<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS323<br>LDW-SS323-010<br>4/2006 9:43:00<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS324<br>LDW-SS324-010<br>4/2006 10:22:00<br>0-10 cm<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | 4.8 J | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | 30 | 11 | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | 81 | 33 | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 0.88 U | 4.3 U | 8.1 U | 3.5 U | 5.9 U |
| Acenaphthylene | 66 | 66 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 0.88 U | 4.3 U | 8.1 U | 3.5 U | 5.9 U |
| Acenaphthene | 16 | 57 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 1 | 4.3 U | 8.1 U | 3.5 U | 5.9 U |
| Anthracene | 220 | 1200 | -- | -- | -- | 4.1 | -- | -- | 7.8 | 2.6 | 4.1 J | 17 | 3.9 | 5.9 U |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | 11 | -- | -- | 13 | 8.4 | 11 | 56 | 10 | 4.7 J |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | 18 | -- | -- | 19 | 11 | 11 | 50 | 13 | 5.9 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | 3.9 | -- | -- | 5.1 | 4.3 U | 6.4 | 21 | 5.6 | 5.9 U |
| Chrysene | 110 | 460 | -- | -- | -- | 18 | -- | -- | 29 | 18 | 15 | 93 | 17 | 6.3 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 4.3 U | 2.7 | 6.7 J | 0.92 J | 0.7 J |
| Fluoranthene | 160 | 1200 | -- | -- | -- | 24 | -- | -- | 31 | 26 | 26 | 94 | 21 | 11 |
| Fluorene | 23 | 79 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 0.93 | 4.3 U | 6 J | 3.5 U | 5.9 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | 5 | -- | -- | 5.1 | 4.3 U | 5.9 | 20 | 5.6 | 5.9 U |
| Naphthalene | 99 | 170 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 0.88 U | 4.3 U | 8.1 U | 3.5 U | 5.9 U |
| Phenanthrene | 100 | 480 | -- | -- | -- | 7.5 | -- | -- | 11 | 8 | 9.1 | 38 | 6.9 | 5 J |
| Pyrene | 1000 | 1400 | -- | -- | -- | 34 | -- | -- | 32 | 20 | 26 | 81 | 23 | 16 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | 51 | -- | -- | 53 | 23 | 26 | 140 | 32 | 14 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | 12 | -- | -- | 19 | 12 | 13 J | 61 J | 11 | 5 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | 160 | -- | -- | 190 | 110 | 130 | 560 J | 130 J | 59 J |
| **PAHs (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | 58 U | 20 U | 20 U | -- | -- | 62 U | 62 U | 61 U | 62 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| Acenaphthene | -- | -- | 500 | 730 | -- | 58 U | 20 U | 20 U | 97 U | 23 | 62 U | 62 U | 61 U | 62 U |
| Anthracene | -- | -- | 960 | 4400 | -- | 81 | 16 J | 20 U | 170 | 59 | 58 J | 130 | 67 | 62 U |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | 220 | 50 | 20 U | 280 | 190 | 160 | 430 | 180 | 49 J |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | 350 | 56 | 13 J | 420 | 240 | 160 | 380 | 220 | 62 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | 520 | 75 | 18 J | 580 | 320 | 190 | 620 | 360 | 76 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | 490 | 82 | 18 J | 570 | 200 | 180 | 440 | 190 | 74 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | 78 | 12 J | 20 U | 110 | 98 U | 92 | 160 | 98 | 62 U |
| Chrysene | -- | -- | 1400 | 2800 | -- | 360 | 59 | 20 U | 630 | 410 | 220 | 710 | 300 | 66 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | 58 U | 20 U | 20 U | 97 U | 98 U | 39 | 51 J | 16 J | 7.4 J |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | 470 | 140 | 20 U | 670 | 590 | 370 | 720 | 360 | 120 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>DW-SC23-8-10.<br>2/16/2006<br>6-8 FT<br>East Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-0-1<br>2/17/2006<br>8-10.2 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-1-2<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-2-4<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SS31<br>LDW-SS31-010<br>1/21/2005<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SS32<br>LDW-SS32-010<br>1/18/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS321<br>LDW-SS321-010<br>4/2006 10:39:00<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS322<br>LDW-SS322-010<br>4/2006 9:33:00<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS323<br>LDW-SS323-010<br>4/2006 9:43:00<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS324<br>LDW-SS324-010<br>4/2006 10:22:00<br>0-10 cm<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | -- | -- | 540 | 1000 | -- | 58 U | 20 U | 20 U | 97 U | 21 | 62 U | 46 J | 61 U | 62 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | 99 | 13 J | 20 U | 110 | 98 U | 84 | 150 | 97 | 62 U |
| Naphthalene | -- | -- | 2100 | 2400 | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | 150 | 30 | 20 U | 240 | 180 | 130 | 290 | 120 | 53 J |
| Pyrene | -- | -- | 2600 | 3300 | -- | 670 | 230 | 19 J | 700 | 460 | 370 | 620 | 400 | 170 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | 1010 | 157 | 36 J | 1150 | 520 | 370 | 1060 | 550 | 150 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | 230 | 46 J | 20 U | 410 | 280 | 190 J | 470 J | 190 | 53 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | 3260 | 720 J | 68 J | 4070 | 2410 | 1870 | 4280 J | 2220 J | 620 J |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | 3490 | 760 J | 68 J | 4480 | 2690 | 2050 J | 4750 J | 2410 J | 680 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | 0.3 U | -- | -- | ***4.5 U*** | 0.88 U | 0.43 U | 0.81 U | 0.35 U | 0.59 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | 0.3 U | -- | -- | **4.5 U** | 0.88 U | 0.43 U | 0.81 | 0.35 U | 0.59 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | 0.3 U | -- | -- | ***4.5 U*** | **0.88 U** | 0.43 U | **0.81 U** | 0.35 U | 0.59 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | 0.3 U | -- | -- | ***4.5 U*** | 0.075 U | **0.43 U** | **0.81 U** | 0.35 U | **0.59 U** |
| **Benzenes (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | 5.9 U | 5.9 U | 5.9 U | 97 U | 20 U | 6.2 U | 6.2 U | 6.1 U | 6.2 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | 5.9 U | 5.9 U | 5.9 U | 97 U | 20 U | 6.2 U | 6.2 | 6.1 U | 6.2 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | 5.9 U | 5.9 UJ | 5.9 UJ | 97 U | 20 U | 6.2 U | 6.2 U | 6.1 U | 6.2 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | 5.9 U | 5.9 U | 5.9 U | 97 U | 1.7 U | 6.2 U | 6.2 U | 6.1 U | 6.2 U |
| Nitrobenzene | -- | -- | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | 20 | -- | -- | 7.4 | 4.1 U | 14 | **59** | 19 | 13 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | 1.2 | -- | -- | 4.5 U | 0.88 U | 1.5 | **5** | 1.6 | 1.3 |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 0.88 U | 4.3 U | 8.1 U | 3.5 U | 5.9 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 0.88 U | 1.7 | 1.1 | 0.42 | 0.59 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 0.88 U | 4.3 U | 8.1 U | 3.5 U | 5.9 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 0.88 U | 4.3 U | 8.1 U | 3.5 U | 5.9 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | 390 | 15 J | 16 J | 160 | 93 U | 200 | 450 | 330 | 140 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | 23 | 5.9 U | 5.9 U | 97 U | 20 U | 21 | 38 | 27 | 14 |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 25 | 8.7 | 7.3 | 6.2 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | 58 U | 13 J | 14 J | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | 290 U | 98 U | 98 U | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | 290 U | 98 U | 98 U | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>DW-SC23-8-10.<br>2/16/2006<br>6-8 FT<br>East Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-0-1<br>2/17/2006<br>8-10.2 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-1-2<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-2-4<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SS31<br>LDW-SS31-010<br>1/21/2005<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SS32<br>LDW-SS32-010<br>1/18/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS321<br>LDW-SS321-010<br>4/2006 10:39:00<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS322<br>LDW-SS322-010<br>4/2006 9:33:00<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS323<br>LDW-SS323-010<br>4/2006 9:43:00<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS324<br>LDW-SS324-010<br>4/2006 10:22:00<br>0-10 cm<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | 5.9 U | 5.9 U | 5.9 U | ***97 U*** | 20 U | 6.2 U | 6.2 U | 6.1 U | 6.2 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | 580 UJ | 200 UJ | 200 UJ | 970 U | 200 U | 620 UJ | 620 UJ | 610 UJ | 620 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | 5.9 U | 5.9 U | 5.9 U | ***97 U*** | 20 U | 6.2 U | 6.2 U | 6.1 U | 6.2 U |
| 4-Methylphenol | 670 | 670 | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | 290 U | 98 U | 98 U | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | 290 U | 98 U | 98 U | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |
| 2-Nitrophenol | -- | -- | -- | -- | -- | 290 U | 98 U | 98 U | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |
| 4-Nitrophenol | -- | -- | -- | -- | -- | 290 UJ | 98 UJ | 98 UJ | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | 24 J | 30 U | 29 U | **480 U** | 98 U | 31 U | 31 U | 30 U | 31 U |
| Phenol | 420 | 1200 | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 140 | 62 U | 61 U | 62 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | 2.9 U | -- | -- | 4.5 U | 0.88 U | 4.3 U | 8.1 U | 3.5 U | 5.9 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | 0.3 U | -- | -- | **4.5 U** | 0.075 UJ | 0.43 U | 0.81 U | 0.35 U | 0.59 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | 1.7 U | -- | -- | 4.5 U | 0.88 U | 0.43 U | 0.81 U | 0.35 U | 0.59 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | 290 U | 98 U | 98 U | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |
| 3-Nitroaniline | -- | -- | -- | -- | -- | 290 U | 98 U | 98 U | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |
| 4-Nitroaniline | -- | -- | -- | -- | -- | 290 U | 98 U | 98 U | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | 290 UJ | 98 UJ | 98 UJ | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |
| 4-Chloroaniline | -- | -- | -- | -- | -- | 290 UJ | 98 UJ | 98 UJ | 480 U | 98 U | 310 U | 310 U | 300 U | 310 U |
| Aniline | -- | -- | -- | -- | -- | 58 UJ | 20 UJ | 20 UJ | 97 U | 20 U | 62 UJ | 62 UJ | 61 UJ | 62 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | 29 U | 30 U | 29 U | ***97 U*** | 20 U | 31 U | 31 U | 30 U | 31 U |
| Benzoic acid | 650 | 650 | -- | -- | -- | 88 J | 48 J | 59 U | ***970 U*** | 200 U | 620 U | 620 U | 610 U | 620 U |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- | 97 U | 28 | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | 5.9 U | 5.9 U | 5.9 U | 97 U | 1.7 UJ | 6.2 U | 6.2 U | 6.1 U | 6.2 U |
| Hexachloroethane | -- | -- | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | 290 UJ | 98 UJ | 98 UJ | 480 U | 98 UJ | 310 U | 310 UJ | 300 UJ | 310 UJ |
| Isophorone | -- | -- | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | 29 U | 30 U | 29 U | 480 U | 98 U | 31 U | 31 U | 30 U | 31 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | 29 U | 30 U | 29 U | 480 U | 98 U | 31 U | 31 U | 30 U | 31 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | 33 U | 6.5 U | 5.9 U | 97 U | 20 U | 6.2 U | 6.2 U | 6.1 U | 6.2 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | 58 U | 20 U | 20 U | 97 U | 20 U | 62 U | 62 U | 61 U | 62 U |

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>DW-SC23-8-10.<br>2/16/2006<br>6-8 FT<br>East Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-0-1<br>2/17/2006<br>8-10.2 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-1-2<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-2-4<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SS31<br>LDW-SS31-010<br>1/21/2005<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SS32<br>LDW-SS32-010<br>1/18/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS321<br>LDW-SS321-010<br>4/2006 10:39:00<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS322<br>LDW-SS322-010<br>4/2006 9:33:00<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS323<br>LDW-SS323-010<br>4/2006 9:43:00<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS324<br>LDW-SS324-010<br>4/2006 10:22:00<br>0-10 cm<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7 U | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7 U | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7 U | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7 U | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7 U | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7 UJ | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7 U | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7 U | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 UJ | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7 U | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.7 U | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | -- | -- | 170 U | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | 17 U | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 2.5 | **14** | -- | -- | 4.4 | 5.4 J | **31 J** | **37 J** | 9.5 | **46** |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 6.5 U | 20 U | 4 U | 3.9 U | 20 U | 19 UJ | 29 U | 40 U | 18 U | 33 U |
| Aroclor-1221 | -- | -- | -- | -- | 6.5 U | 20 U | 4 U | 3.9 U | 20 U | 19 UJ | 29 U | 40 U | 18 U | 33 U |
| Aroclor-1232 | -- | -- | -- | -- | 6.5 U | 20 U | 4 U | 3.9 U | 20 U | 19 UJ | 29 U | 40 U | 18 U | 33 U |
| Aroclor-1242 | -- | -- | -- | -- | 6.5 U | 20 U | 4 U | 3.9 U | 20 U | 22 J | 76 J | 40 J | 26 | 110 |
| Aroclor-1248 | -- | -- | -- | -- | 6.5 U | 47 | 6.1 | 3.9 U | 39 U | 19 UJ | 29 U | 40 U | 18 U | 33 U |
| Aroclor-1254 | -- | -- | -- | -- | 20 U | 120 | 19 | 3.9 U | 53 | 56 | 140 J | 100 | 57 | 210 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>DW-SC23-8-10.<br>2/16/2006<br>6-8 FT<br>East Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-0-1<br>2/17/2006<br>8-10.2 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-1-2<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-2-4<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SS31<br>LDW-SS31-010<br>1/21/2005<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SS32<br>LDW-SS32-010<br>1/18/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS321<br>LDW-SS321-010<br>4/2006 10:39:00<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS322<br>LDW-SS322-010<br>4/2006 9:33:00<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS323<br>LDW-SS323-010<br>4/2006 9:43:00<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS324<br>LDW-SS324-010<br>4/2006 10:22:00<br>0-10 cm<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | -- | -- | -- | -- | 41 | 110 | 11 | 3.9 U | 43 | 44 | 230 J | 140 | 83 | 160 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 41 | 280 | 36 | 3.9 U | 96 | 122 J | 450 J | 280 J | 166 | 480 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 668 | 476 | 313 | 433 |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 65.4 | 92.1 | 58.3 | 82.5 |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.8 J | 7.14 J | 4.51 J | 8.31 J |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC23<br>DW-SC23-8-10.<br>2/16/2006<br>6-8 FT<br>East Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-0-1<br>2/17/2006<br>8-10.2 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-1-2<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - Lafarge | LDW-SC24<br>LDW-SC24-2-4<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - Lafarge | LDW-SS31<br>LDW-SS31-010<br>1/21/2005<br>2-4 FT<br>East Nav. Channel - Lafarge | LDW-SS32<br>LDW-SS32-010<br>1/18/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS321<br>LDW-SS321-010<br>4/2006 10:39:00<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS322<br>LDW-SS322-010<br>4/2006 9:33:00<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS323<br>LDW-SS323-010<br>4/2006 9:43:00<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS324<br>LDW-SS324-010<br>4/2006 10:22:00<br>0-10 cm<br>Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.27 J | 3.75 J | 2.19 J | 2.1 J |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.13 J | 11.9 J | 6.87 J | 14.2 |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 17.9 J | 17.6 | 11.4 J | 13 |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.67 J | 3.69 J | 2.24 J | 3.85 J |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.44 J | 11.5 J | 7.01 J | 7 J |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.253 U | 0.317 J | 0.236 J | 0.331 J |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.76 J | 2.06 J | 1.35 J | 1.45 J |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.17 J | 1.52 J | 1.04 J | 1.3 J |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.69 J | 2.63 J | 1.73 J | 1.99 J |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.85 J | 3.81 J | 2.37 J | 4.49 J |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.823 J | 0.719 J | 0.495 J | 0.71 J |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.48 J | 2.04 J | 1.29 J | 1.79 J |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4900 | 4110 | 2970 | 3750 |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 250 | 353 | 203 | 319 |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11.5 J | 14.1 J | 8.9 J | 13.3 J |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.54 J | 11.4 J | 7.06 J | 10.9 J |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.81 J | 10.8 J | 6.79 J | 9.59 J |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.4 J | 16.3 J | 10.5 J | 14.5 J |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.9 J | 16.4 J | 10.6 J | 14.4 J |

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

**a** The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS35<br>LDW-SS35-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS36<br>LDW-SS36-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS37<br>LDW-SS37-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS38<br>LDW-SS38-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS39<br>LDW-SS39-010<br>3/11/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS40<br>LDW-SS40-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS41<br>LDW-SS41-010<br>3/8/2005<br>0-9 cm<br>West Nav. Channel - Lafarge | LDW-SS42<br>LDW-SS42-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS43<br>LDW-SS43-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | DR023<br>SD-DR023-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 6.3 | 1.6 | 5.1 | 0.7 | 17 | 2.3 | 14.2 | 10.6 | 10.5 | 0.09 J |
| Sand (total calc'd) | -- | -- | -- | -- | 61.6 | 23.6 | 31.2 | 25.5 | 61.2 | 39.9 | 35.6 | 15.7 | 19.2 | 11.3 J |
| Silt (total calc'd) | -- | -- | -- | -- | 24 | 50.8 | 44.9 | 53.9 | 15.9 | 42.1 | 36.2 | 50.8 | 53.5 | 62 |
| Clay (total calc'd) | -- | -- | -- | -- | 8.1 | 24.1 | 18.8 | 19.9 | 5.8 | 15.9 | 14.1 | 23 | 16.8 | 26 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 32.1 | 74.9 | 63.7 | 73.8 | 21.7 | 58 | 50.3 | 73.8 | 70.3 | 88 |
| **Conventional Parameters** | | | | | | | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.01 | 1.89 | 2.33 | 1.95 | 3.93 | 1.89 | 2.35 | 2.04 | 1.67 | 2.51 |
| Total solids | -- | -- | -- | -- | 68.1 J | 43.3 | 58.3 | 47.1 | 57.9 | 56.1 | 54.7 | 47.1 | 50.55 | -- |
| Total solids (preserved) | -- | -- | -- | -- | 58.4 | 42.4 | 53.3 | 40.5 | 61 | 39.3 | 44.6 | 37.8 | 48.33 | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | 7.6 | 13.6 | 8.7 | 8.48 | 5.2 | 7.05 | 5.65 | 26.9 | 28.8 | -- |
| Sulfides (total) | -- | -- | -- | -- | 510 J | 910 | 650 J | 38 J | 490 J | 46 J | 110 J | 37 | 1300 J | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 23000 |
| Antimony | -- | -- | -- | -- | 0.3 UJ | 0.4 UJ | 0.3 UJ | 0.4 UJ | 0.3 UJ | 0.3 UJ | 0.4 UJ | 0.4 UJ | 0.6 J | 10 UJ |
| Arsenic | 57 | 93 | -- | -- | 12.6 | 18 | 13.6 | 14.5 | 30.5 | 16.7 | 45 | 17.1 | 23.5 | 12 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 82 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.51 |
| Cadmium | 5.1 | 6.7 | -- | -- | 1 | 0.5 | 3 | 0.6 | 1.1 | 0.8 | 0.5 | 0.7 | 0.4 U | 0.47 |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8500 |
| Chromium | 260 | 270 | -- | -- | 35.1 | 38 | 89.2 | 39 | 40.4 | 36.4 | 30.5 | 36.6 | 32.9 | 32 |
| Cobalt | -- | -- | -- | -- | 8.3 | 9.8 | 9.6 | 10.9 | 6 | 9.5 | 9.3 | 10 | 11.2 | 11 |
| Copper | 390 | 390 | -- | -- | 180 J | 104 | 108 | 107 | 55.2 | 84.2 | 103 | 107 | 121 | 75 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 31000 J |
| Lead | 450 | 530 | -- | -- | 55 | 61 | 103 | 58 | 79 | 56 | 62 | 62 | 48 | 43 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8300 |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 350 |
| Mercury | 0.41 | 0.59 | -- | -- | **0.46 J** | 0.24 | ***0.69*** | 0.3 | ***1.09*** | 0.35 | 0.18 | 0.31 | 0.17 | 0.22 |
| Molybdenum | -- | -- | -- | -- | 2.2 | 2 | 3.1 | 2 | 9.1 | 1.7 | 3.4 | 2.1 | 2 | -- |
| Nickel | -- | -- | -- | -- | 22 | 24 | 27 | 27 | 16 | 23 | 19 | 23 | 26 | 24 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2900 |
| Selenium | -- | -- | -- | -- | 8 U | 10 U | 8 UJ | 10 U | 9 U | 8 UJ | 8 U | 9 U | 9 U | 9 |
| Silver | 6.1 | 6.1 | -- | -- | 0.8 | 0.7 U | 3.9 | 0.7 | 0.6 | 0.7 | 0.5 U | 0.6 | 0.6 U | 0.45 |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 12000 |
| Thallium | -- | -- | -- | -- | 0.3 U | 0.4 U | 0.3 U | 0.4 U | 0.3 U | 0.3 U | 0.4 U | 0.4 U | 0.4 U | 0.13 J |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.8 J |
| Vanadium | -- | -- | -- | -- | 58.4 | 77.6 | 70.3 | 76.7 | 58.7 | 65.8 | 62 | 74.2 | 72.2 | 60 |
| Zinc | 410 | 960 | -- | -- | 159 | 256 | 220 | 155 | 117 | 141 | 175 | 157 | 165 | 130 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | SMS 2LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>LDW-SS35<br>LDW-SS35-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS36<br>LDW-SS36-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS37<br>LDW-SS37-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS38<br>LDW-SS38-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS39<br>LDW-SS39-010<br>3/11/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS40<br>LDW-SS40-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS41<br>LDW-SS41-010<br>3/8/2005<br>0-9 cm<br>West Nav. Channel - Lafarge | LDW-SS42<br>LDW-SS42-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS43<br>LDW-SS43-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | DR023<br>SD-DR023-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | 7.9 | -- | -- | 3.6 J | -- | 26 | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | 23 | -- | -- | 18 J | -- | 99 | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | ***160*** | 5.3 U | 0.86 U | 1 U | 2.3 | 1.1 U | 0.81 U | 4.9 U | 1.2 U | 0.8 U |
| Acenaphthylene | 66 | 66 | -- | -- | 6.5 | 4.7 J | 0.86 U | 1 U | 2 U | 1.1 U | 0.81 U | 4.9 U | 1.2 U | 0.8 U |
| Acenaphthene | 16 | 57 | -- | -- | ***260*** | 3.7 J | 0.86 U | 1 U | 6.6 | 1.1 U | 0.81 U | 4.9 U | 1.2 U | 0.8 |
| Anthracene | 220 | 1200 | -- | -- | 170 | 7.4 | 1.2 | 1.9 | 6.4 | 1.1 U | 2.1 | 4.9 | 1.3 | 5.2 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | **160** | 21 | 6.9 | 9.7 | 9.9 | 3.5 | 13 | 11 | 7.2 | 16 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | **100** | 15 | 6 | 14 | 12 | 3.5 | 17 | 11 | 9 | 15 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 23 | 4.8 J | 4.2 U | 3.2 | 4.1 | 1.9 | 2.2 | 2.8 J | 2.8 | 9.6 |
| Chrysene | 110 | 460 | -- | -- | **180** | 47 | 4.7 | 12 | 13 | 6.3 | 9.4 | 17 | 7.8 | 20 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | **15 U** | 5.3 U | 4.2 U | 1 U | 2 U | 1.1 U | 0.81 U | 4.9 U | 1.2 U | 2.8 |
| Fluoranthene | 160 | 1200 | -- | -- | **850** | 120 | 9.9 | 9.7 | 31 | 9 | 14 | 23 | 9 | 40 |
| Fluorene | 23 | 79 | -- | -- | ***240*** | 5.1 J | 0.86 U | 1 U | 3.1 | 1.1 U | 0.81 U | 4.9 U | 1.2 U | 1.6 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 33 | 4.1 | 3.4 | 9.2 | 6.6 | 2 | 9.4 | 0.98 | 6.6 | 10 |
| Naphthalene | 99 | 170 | -- | -- | ***260*** | 5.3 U | 0.86 U | 1 U | 2.5 | 1.1 U | 0.81 U | 4.9 U | 1.2 U | 0.8 U |
| Phenanthrene | 100 | 480 | -- | -- | ***750*** | 95 | 2.2 | 3.8 | 24 | 2.9 | 5.5 | 8.3 | 4.1 | 10 |
| Pyrene | 1000 | 1400 | -- | -- | 500 | 90 | 12 | 9.2 | 31 | 7.4 | 13 | 24 | 11 | 33 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | **250** | 48 | 9.9 | 19 | 27 | 6.9 | 17 | 35 | 14 | 33 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | ***1700*** | 120 J | 3.4 | 5.7 | 42 | 2.9 | 7.7 | 13 | 5.4 | 18 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | **2100** | 350 J | 52 | 86 | 130 | 41 | 94 | 120 J | 68 | 180 |
| **PAHs (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 3300 | 100 U | 20 U | 20 U | 91 | 20 U | 19 U | 99 U | 20 U | 20 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 130 | 88 J | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 5200 | 69 J | 20 U | 20 U | 260 | 20 U | 19 U | 99 U | 20 U | 20 |
| Anthracene | -- | -- | 960 | 4400 | 3500 | 140 | 27 | 37 | 250 | 20 U | 49 | 99 | 22 | 130 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 3200 | 400 | 160 | 190 | 390 | 67 | 310 | 220 | 120 | 410 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 2000 | 280 | 140 | 270 | 470 | 66 | 390 | 230 | 150 | 370 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 2700 | 460 | 230 | 290 | 450 | 77 | 280 | 330 | 140 | 460 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 2400 | 440 | 98 U | 87 | 620 | 53 | 120 | 380 | 99 | 370 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 470 | 90 J | 98 U | 62 | 160 | 36 | 51 | 58 J | 46 | 240 |
| Chrysene | -- | -- | 1400 | 2800 | 3700 | 890 | 110 | 230 | 520 | 120 | 220 | 350 | 130 | 510 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 300 U | 100 U | 98 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 70 |
| Fluoranthene | -- | -- | 1700 | 2500 | 17000 | 2300 | 230 | 190 | 1200 | 170 | 330 | 470 | 150 | 1000 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | SMS 2LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>LDW-SS35<br>LDW-SS35-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS36<br>LDW-SS36-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS37<br>LDW-SS37-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS38<br>LDW-SS38-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS39<br>LDW-SS39-010<br>3/11/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS40<br>LDW-SS40-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS41<br>LDW-SS41-010<br>3/8/2005<br>0-9 cm<br>West Nav. Channel - Lafarge | LDW-SS42<br>LDW-SS42-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS43<br>LDW-SS43-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | DR023<br>SD-DR023-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | -- | -- | 540 | 1000 | 4900 | 96 J | 20 U | 20 U | 120 | 20 U | 19 U | 99 U | 20 U | 40 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 660 | 77 | 80 | 180 | 260 | 38 | 220 | 20 | 110 | 260 |
| Naphthalene | -- | -- | 2100 | 2400 | 5300 | 100 U | 20 U | 20 U | 100 | 20 U | 19 U | 99 U | 20 U | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 15000 | 1800 | 52 | 75 | 930 | 55 | 130 | 170 | 68 | 260 |
| Pyrene | -- | -- | 2600 | 3300 | 10000 | 1700 | 270 | 180 | 1200 | 140 | 300 | 480 | 180 | 820 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 5100 | 900 | 230 | 380 | 1070 | 130 | 400 | 710 | 240 | 830 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 34000 | 2200 J | 79 | 112 | 1660 | 55 | 180 | 270 | 90 | 450 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 42000 | 6600 J | 1220 | 1680 | 5300 | 770 | 2220 | 2540 J | 1130 | 4500 |
| Total PAH (calc'd) | -- | -- | -- | -- | 76000 | 8800 J | 1300 | 1790 | 6900 | 820 | 2400 | 2810 J | 1220 | 5000 |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.33 U | 0.35 U | 0.86 U | 0.72 U | 1.4 U | 1.1 U | 0.28 U | 0.32 U | 0.4 U | 0.8 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.33 U | 0.35 U | 0.86 U | 0.72 U | 1.4 U | 1.1 U | 0.28 U | 0.32 U | 0.4 U | 0.8 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.33 U | 0.35 U | **0.86 U** | 0.72 U | 0.69 UJ | **1.1 U** | 0.28 U | 0.32 U | 0.4 U | 0.8 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.33 U | 0.052 U | **0.86 U** | 0.36 UJ | **1.4 U** | **1.1 U** | 0.072 U | 0.048 U | 0.2 UJ | **0.8 U** |
| **Benzenes (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6.6 U | 6.6 U | 20 U | 14 U | 54 U | 20 U | 6.6 U | 6.6 U | 6.6 U | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6.6 U | 6.6 U | 20 U | 14 U | 54 U | 20 U | 6.6 U | 6.6 U | 6.6 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6.6 U | 6.6 U | 20 U | 14 U | 27 UJ | 20 U | 6.6 U | 6.6 U | 6.6 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 6.6 U | 0.99 U | 20 U | 7.1 UJ | 54 U | 20 U | 1.7 U | 0.98 U | 3.3 UJ | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 18 | 6.9 | 33 | 5.1 U | 2.8 U | 14 | 6 U | 19 | 4.8 | 25 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.33 U | 0.35 U | 0.86 U | 1.4 | 1.4 U | 1.1 U | 0.6 | 0.32 U | 0.4 U | 0.8 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.33 U | 0.35 U | 0.86 U | 0.72 U | 3.1 | 1.1 U | 0.31 | 0.69 U | 0.4 | 0.8 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.33 U | 0.35 U | 0.86 U | 0.72 U | 1.4 U | 1.1 U | 0.34 | 0.32 U | 0.44 | 0.8 |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.9 U | 5.3 U | 0.86 U | 1 U | 3.1 U | 1.1 U | 0.81 U | 4.9 U | 1.2 U | 0.8 |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.9 U | 5.3 U | 0.86 U | 1 U | 2 U | 1.1 U | 0.81 U | 4.9 U | 1.2 U | 0.8 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 370 | 130 | 760 | 100 U | 110 U | 270 | 140 U | 380 | 80 | 630 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 6.6 U | 6.6 U | 20 U | 27 | 54 U | 20 U | 14 | 6.6 U | 6.6 U | 20 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 6.6 U | 6.6 U | 20 U | 14 U | 120 | 20 U | 7.3 | 14 U | 6.6 | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 6.6 U | 6.6 U | 20 U | 14 U | 54 U | 20 U | 8 | 6.6 U | 7.3 | 20 |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 59 U | 100 U | 20 U | 20 U | 120 U | 20 U | 19 U | 99 U | 20 U | 20 |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 40 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 60 U |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | SMS 2LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>LDW-SS35<br>LDW-SS35-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS36<br>LDW-SS36-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS37<br>LDW-SS37-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS38<br>LDW-SS38-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS39<br>LDW-SS39-010<br>3/11/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS40<br>LDW-SS40-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS41<br>LDW-SS41-010<br>3/8/2005<br>0-9 cm<br>West Nav. Channel - Lafarge | LDW-SS42<br>LDW-SS42-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS43<br>LDW-SS43-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | DR023<br>SD-DR023-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6.6 U | 6.6 U | 20 U | 14 U | ***31 UJ*** | 20 U | 6.6 U | 6.6 U | 6.6 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 590 U | 1000 U | 200 U | 200 UJ | 800 U | 200 UJ | 190 U | 990 U | 200 U | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6.6 U | 6.6 U | 20 U | 14 U | 54 U | 20 U | 6.6 U | 6.6 U | 6.6 U | 20 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 33 U | 33 U | 98 U | 71 U | 270 U | 98 U | 33 U | 33 UJ | 33 U | 100 U |
| Phenol | 420 | 1200 | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 22 | 19 U | 180 | 20 U | 80 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | ***170*** | 6.9 | 0.86 U | 1 U | 2 U | 1.1 U | 0.81 U | 4.9 U | 1.2 U | 1.2 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.33 U | 0.052 U | 0.86 U | 0.72 U | 1.4 U | 1.1 U | 0.072 U | 0.048 U | 0.4 U | 0.8 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.33 U | 0.35 U | 0.86 U | 0.72 U | 1.4 U | 1.1 U | 0.28 U | 0.32 U | 0.4 U | 1.6 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | 300 U | 500 U | 98 U | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 60 U |
| Aniline | -- | -- | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 33 U | 33 U | 20 U | 20 UJ | ***80 U*** | 20 UJ | 19 U | 33 U | 20 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 82 | 66 U | 200 U | 140 UJ | 540 U | 200 U | 66 U | 66 U | 66 U | 200 U |
| Carbazole | -- | -- | -- | -- | 1300 | 170 | 20 U | 20 U | 88 | 20 U | 19 U | 99 U | 20 U | 40 |
| Dibenzofuran | -- | -- | 540 | 700 | 3500 | 130 | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 30 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6.6 U | 0.99 U | 20 U | 14 U | 54 U | 20 U | 1.7 U | 0.98 U | 6.6 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 300 U | 500 U | 98 UJ | 98 U | 400 U | 98 U | 97 U | 490 U | 98 U | 100 UJ |
| Isophorone | -- | -- | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 33 U | 33 U | 98 U | 71 U | 270 U | 98 U | 33 U | 33 U | 33 U | 40 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 33 U | 33 U | 98 U | 71 U | 270 U | 98 U | 33 U | 33 U | 33 U | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 6.6 U | 6.6 U | 20 U | 14 U | 54 U | 20 U | 6.6 U | 6.6 U | 6.6 U | 40 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 59 U | 100 U | 20 U | 20 U | 80 U | 20 U | 19 U | 99 U | 20 U | 40 U |

**Table B-1**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS35<br>LDW-SS35-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS36<br>LDW-SS36-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS37<br>LDW-SS37-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS38<br>LDW-SS38-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS39<br>LDW-SS39-010<br>3/11/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS40<br>LDW-SS40-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS41<br>LDW-SS41-010<br>3/8/2005<br>0-9 cm<br>West Nav. Channel - Lafarge | LDW-SS42<br>LDW-SS42-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS43<br>LDW-SS43-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | DR023<br>SD-DR023-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 7.3 U | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- | 1.7 U | 0.98 U | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- | 1.7 U | 0.98 U | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- | 1.7 U | 0.98 U | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- | 1.7 U | 0.98 U | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- | 1.7 U | 0.98 U | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- | 1.7 U | 0.98 U | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- | 1.7 U | 0.98 U | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- | 1.7 U | 0.98 U | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| Endrin | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| Endrin aldehyde | -- | -- | -- | -- | -- | 2 UJ | -- | -- | -- | -- | 3.4 UJ | 2.5 UJ | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- | 1.7 U | 1.5 U | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | 0.99 U | -- | -- | -- | -- | 1.7 U | 0.98 U | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | 99 U | -- | -- | -- | -- | 170 U | 98 U | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 7.3 U | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | 3.4 U | 2 U | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | 9.9 U | -- | -- | -- | -- | 17 U | 9.8 U | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **32** | 1.3 | ***220*** | 5.9 | 5.9 | **27 J** | 8.4 | 5.3 | 1.1 J | 2.7 J |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 U | 1100 U | 20 U | 110 U | 39 UJ | 20 U | 20 U | 20 U | 20 UJ |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U | 1100 U | 20 U | 110 U | 39 UJ | 20 U | 20 U | 20 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 1100 U | 20 U | 110 U | 39 UJ | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 140 | 20 U | 2100 U | 23 | 110 U | 170 J | 39 | 20 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U | 4300 U | 20 U | 110 U | 39 UJ | 20 U | 28 | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 340 | 24 | 3300 | 50 | 230 | 220 | 99 | 42 | 18 J | 26 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS35<br>LDW-SS35-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS36<br>LDW-SS36-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS37<br>LDW-SS37-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS38<br>LDW-SS38-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS39<br>LDW-SS39-010<br>3/11/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS40<br>LDW-SS40-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS41<br>LDW-SS41-010<br>3/8/2005<br>0-9 cm<br>West Nav. Channel - Lafarge | LDW-SS42<br>LDW-SS42-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS43<br>LDW-SS43-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | DR023<br>SD-DR023-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | -- | -- | -- | -- | 170 | 20 U | 1800 | 42 | 110 U | 120 | 60 | 38 | 20 U | 41 J |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 650 | 24 | 5100 | 115 | 230 | 510 J | 198 | 108 | 18 J | 67 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2000 UJ |
| PCB-066 | -- | -- | -- | -- | -- | -- | 221000 | -- | -- | -- | -- | -- | -- | 3000 UJ |
| PCB-077 | -- | -- | -- | -- | -- | -- | 19500 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-081 | -- | -- | -- | -- | -- | -- | 976 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-090 | -- | -- | -- | -- | -- | -- | 294000 C | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | C90 | -- | -- | -- | -- | -- | -- | 2000 J |
| PCB-105 | -- | -- | -- | -- | -- | -- | 107000 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-110 | -- | -- | -- | -- | -- | -- | 293000 C | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | 6140 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-118 | -- | -- | -- | -- | -- | -- | 261000 | -- | -- | -- | -- | -- | -- | 2000 J |
| PCB-123 | -- | -- | -- | -- | -- | -- | 4290 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-126 | -- | -- | -- | -- | -- | -- | 405 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-129 | -- | -- | -- | -- | -- | -- | 290000 C | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | C129 | -- | -- | -- | -- | -- | -- | 4000 J |
| PCB-153 | -- | -- | -- | -- | -- | -- | 220000 C | -- | -- | -- | -- | -- | -- | 5000 J |
| PCB-156 | -- | -- | -- | -- | -- | -- | 37500 C | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-157 | -- | -- | -- | -- | -- | -- | C156 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-167 | -- | -- | -- | -- | -- | -- | 10500 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-169 | -- | -- | -- | -- | -- | -- | 148 U | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1000 J |
| PCB-180 | -- | -- | -- | -- | -- | -- | 112000 C | -- | -- | -- | -- | -- | -- | 3000 J |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2000 J |
| PCB-189 | -- | -- | -- | -- | -- | -- | 2060 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | 1130 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | 103 | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | 982 | 1800 | -- | -- | -- | -- | -- | 639 | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | 123 | 411 | -- | -- | -- | -- | -- | 110 | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | 10.3 J | 42.8 | -- | -- | -- | -- | -- | 9.85 J | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS35<br>LDW-SS35-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS36<br>LDW-SS36-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS37<br>LDW-SS37-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS38<br>LDW-SS38-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | LDW-SS39<br>LDW-SS39-010<br>3/11/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS40<br>LDW-SS40-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - Lafarge | LDW-SS41<br>LDW-SS41-010<br>3/8/2005<br>0-9 cm<br>West Nav. Channel - Lafarge | LDW-SS42<br>LDW-SS42-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - Lafarge | LDW-SS43<br>LDW-SS43-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - Lafarge | DR023<br>SD-DR023-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | 5.9 J | 12.7 | -- | -- | -- | -- | -- | 2.77 J | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | 15.4 J | 97.1 | -- | -- | -- | -- | -- | 14.4 J | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | 24.3 | 71.9 | -- | -- | -- | -- | -- | 17.5 | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | 4.2 J | 22.6 | -- | -- | -- | -- | -- | 3.44 J | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | 19.6 J | 40 | -- | -- | -- | -- | -- | 10.9 J | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | 0.55 J | 1.2 J | -- | -- | -- | -- | -- | 0.364 J | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | 3.26 J | 8.33 | -- | -- | -- | -- | -- | 1.82 J | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | 1.9 J | 13.8 | -- | -- | -- | -- | -- | 1.22 J | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | 3.31 J | 11.9 | -- | -- | -- | -- | -- | 2.38 J | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | 4.25 J | 62.5 | -- | -- | -- | -- | -- | 2.44 J | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | 0.859 J | 2.94 | -- | -- | -- | -- | -- | 0.598 J | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | 2.2 | 397 | -- | -- | -- | -- | -- | 1.2 | -- |
| OCDD | -- | -- | -- | -- | -- | 9230 | 18200 | -- | -- | -- | -- | -- | 6620 | -- |
| OCDF | -- | -- | -- | -- | -- | 493 | 1360 | -- | -- | -- | -- | -- | 324 | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | 18.9 J | 499 J | -- | -- | -- | -- | -- | 12.2 J | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

**a** The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID / Sample ID / Sample Date / Sample Depth / SMS 2LAET[a] | DR024 SD-DR024-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge | DR025 SD-DR025-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge | DR026 SD-DR026-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge | DR049 SD-DR049-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge | DR050 SD-DR050-0000 8/31/1998 0-10 cm West Nav. Channel - Lafarge | DR051 SD-DR051-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge | DR052 SD-DR052-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge | DR062 SD-DR062-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge | DR063 SD-DR063-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge | DR074 SD-DR074-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.4 J | 0.87 | 5.5 | 0.43 J | 3.1 | 4.1 | 0.57 J | 0.15 | 0.09 J | 0.17 |
| Sand (total calc'd) | -- | -- | -- | -- | 10.7 J | 17.5 | 19.5 | 13.9 J | 11.3 | 61 | 27.4 J | 25.2 | 11.8 J | 43 |
| Silt (total calc'd) | -- | -- | -- | -- | 63 | 57 | 52 | 56 | 60 | 21.9 | 50 | 52 | 62 | 36 |
| Clay (total calc'd) | -- | -- | -- | -- | 26 | 24 | 24 | 30 | 27 | 13.2 | 23 | 24 | 26 | 20.8 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 89 | 81 | 76 | 86 | 87 | 35.1 | 73 | 75 | 88 | 57 |
| **Conventional Parameters** | | | | | | | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.51 | 2.83 | 3.24 | 2.64 | 4.12 | 2.77 | 2.56 | 2.18 | 2.62 | 2.46 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | | | | | | | |
| Aluminum | -- | -- | -- | -- | 23000 | 20000 | 22000 | 17000 | 29000 | 22000 | 19000 | 19000 | 22000 | 21000 |
| Antimony | -- | -- | -- | -- | 10 UJ | 10 UJ | 10 UJ | 10 UJ | 5 J | 10 UJ | 10 UJ | 10 UJ | 10 UJ | 10 UJ |
| Arsenic | 57 | 93 | -- | -- | 12 | 13 | 13 | 13 J | 16 | 12 J | 13 J | 11 | 13 | 9.5 J |
| Barium | -- | -- | -- | -- | 92 | 82 | 89 | 76 | 120 | 81 | 85 | 74 | 87 | 76 |
| Beryllium | -- | -- | -- | -- | 0.49 | 0.46 | 0.48 | 0.43 | 0.47 | 0.45 | 0.42 | 0.43 | 0.5 | 0.44 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.41 | 0.46 | 0.49 | 0.53 | 0.61 | 0.34 | 0.4 | 0.42 | 0.48 | 0.31 |
| Calcium | -- | -- | -- | -- | 12000 | 29000 | 11000 | 6700 J | 15000 | 8300 J | 9200 J | 6400 | 8100 | 6700 J |
| Chromium | 260 | 270 | -- | -- | 33 | 31 | 35 | 27 J | 40 | 32 J | 30 J | 28 | 33 | 31 J |
| Cobalt | -- | -- | -- | -- | 11 | 9 | 10 | 10 | 12 | 10 | 11 | 10 | 11 | 11 |
| Copper | 390 | 390 | -- | -- | 74 | 73 | 77 | 78 | 110 | 76 | 98 | 71 | 77 | 70 |
| Iron | -- | -- | -- | -- | 33000 | 30000 | 32000 | 28000 J | 39000 J | 31000 J | 30000 J | 28000 J | 32000 | 30000 J |
| Lead | 450 | 530 | -- | -- | 42 | 45 | 45 | 14 J | 66 J | 42 J | 47 J | 40 | 42 | 38 J |
| Magnesium | -- | -- | -- | -- | 8600 | 7900 | 8500 | 8100 | 10000 | 9100 | 8800 | 7700 | 8600 | 9200 |
| Manganese | -- | -- | -- | -- | 370 | 350 | 360 | 320 | 430 | 330 | 360 | 320 | 340 | 300 |
| Mercury | 0.41 | 0.59 | -- | -- | 0.21 | 0.26 | 0.22 | 0.24 | 0.32 | 0.22 | 0.22 | 0.22 | 0.25 | 0.19 |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | 25 | 24 | 24 | 22 | 26 J | 22 | 21 | 21 | 24 | 22 |
| Potassium | -- | -- | -- | -- | 3000 | 2700 | 2700 | 3000 | 3700 | 3200 | 3100 | 2400 | 3000 | 3300 |
| Selenium | -- | -- | -- | -- | 8 | 7 | 7 | 1 J | 24 J | 0.8 J | 1 | 8 | 7 | 1 |
| Silver | 6.1 | 6.1 | -- | -- | 0.49 | 0.45 | 0.51 | 0.32 | 0.48 | 0.31 | 0.32 | 0.41 | 0.47 | 0.26 |
| Sodium | -- | -- | -- | -- | 12000 | 12000 | 12000 | 12000 | 14000 | 13000 | 12000 | 10000 | 13000 | 13000 |
| Thallium | -- | -- | -- | -- | 0.15 | 0.13 | 0.14 | 0.12 | 0.17 J | 0.12 | 0.13 | 0.11 J | 0.15 | 0.12 |
| Tin | -- | -- | -- | -- | 5 | 5 | 5 | 6 J | 11 | 6 J | 8 J | 4 J | 5 | 6 J |
| Vanadium | -- | -- | -- | -- | 65 | 57 | 61 | 51 | 87 | 62 | 58 | 53 | 63 | 61 |
| Zinc | 410 | 960 | -- | -- | 140 | 140 | 140 | 130 | 170 | 130 | 140 | 120 | 140 | 120 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | SMS 2LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>DR024<br>SD-DR024-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR025<br>SD-DR025-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR026<br>SD-DR026-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR049<br>SD-DR049-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR050<br>SD-DR050-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR051<br>SD-DR051-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR052<br>SD-DR052-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR062<br>SD-DR062-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR063<br>SD-DR063-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR074<br>SD-DR074-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | 56 J | -- | 41 J | -- | 26 J | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | 35 J | -- | 36 | -- | 49 | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | 130 | -- | 170 | -- | 160 | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | 20 UJ | -- | 5 U | -- | 10 U | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.8 U | 0.71 | 0.62 U | 0.76 U | -- | 0.72 U | 0.78 U | 0.92 | 0.76 U | 0.81 U |
| Acenaphthylene | 66 | 66 | -- | -- | 0.8 U | 0.71 U | 0.62 U | 0.76 U | -- | 0.72 U | 0.78 U | 0.92 U | 0.76 U | 0.81 U |
| Acenaphthene | 16 | 57 | -- | -- | 0.8 U | 1.4 | 0.93 | 3.4 | -- | 10 | 0.78 | 1.4 | 0.76 U | 0.81 U |
| Anthracene | 220 | 1200 | -- | -- | 4.4 | 7.1 | 3.4 | 8.7 | -- | 5.4 | 4.3 | 17 | 3.4 | 3.7 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 14 | 17 | 11 | 19 | -- | 13 | 13 | 28 | 11 | 11 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 11 | 13 | 9.9 | 14 | -- | 10 | 11 | 20 | 9.9 | 11 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 7.2 | 7.8 | 5.9 | 7.6 | -- | 6.9 | 6.6 | 11 | 5.7 | 7.7 |
| Chrysene | 110 | 460 | -- | -- | 18 | 22 | 15 | 27 | -- | 18 | 18 | 33 | 17 | 17 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2 | 1.8 | 1.5 | 2.7 | -- | 1.8 | 2.3 | 3.2 | 1.9 | 2.8 |
| Fluoranthene | 160 | 1200 | -- | -- | 35 | 42 | 25 | 68 | -- | 43 | 39 | 78 | 27 | 26 |
| Fluorene | 23 | 79 | -- | -- | 1.2 | 1.8 | 1.2 | 3 | -- | 3.2 | 1.6 | 3.2 | 1.5 | 1.2 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 7.6 | 8.1 | 6.8 | 8.7 | -- | 7.6 | 7.4 | 12 | 6.1 | 8.5 |
| Naphthalene | 99 | 170 | -- | -- | 0.8 U | 1.8 | 0.62 U | 0.76 U | -- | 0.72 U | 0.78 U | 1.4 | 0.76 U | 0.81 U |
| Phenanthrene | 100 | 480 | -- | -- | 8.8 | 13 | 9 | 22 | -- | 21 | 8.2 | 18 | 9.2 | 8.5 |
| Pyrene | 1000 | 1400 | -- | -- | 25 | 32 | 23 | 37 | -- | 26 | 25 | 60 | 22 | 20 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 25 | 29 | 21 | 34 | -- | 26 | 25 | 44 | 23 | 26 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 14 | 25 | 15 | 37 | -- | 40 | 15 | 40 | 14 | 13 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 150 | 170 | 120 | 220 | -- | 150 | 150 | 290 | 120 | 130 |
| **PAHs (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 U | 20 | 20 U | 20 U | 120 | 20 U | 20 U | 20 | 20 U | 20 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | 20 U | 20 U | 20 U | 30 | 20 U | 20 U | 20 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 20 U | 40 | 30 | 90 | 300 | 280 | 20 | 30 | 20 U | 20 U |
| Anthracene | -- | -- | 960 | 4400 | 110 | 200 | 110 | 230 | 910 | 150 | 110 | 360 | 90 | 90 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 350 | 470 | 370 | 490 | 1600 | 360 | 340 | 620 | 300 | 280 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 280 | 360 | 320 | 380 | 820 | 290 | 270 | 440 | 260 | 270 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 360 | 480 | 370 | 520 | 1100 | 420 | 370 | 570 | 370 | 350 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 280 | 340 | 300 | 390 | 750 | 290 | 280 | 400 | 230 | 280 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 180 | 220 | 190 | 200 | 380 | 190 | 170 | 230 | 150 | 190 |
| Chrysene | -- | -- | 1400 | 2800 | 460 | 610 | 480 | 710 | 2100 | 500 | 470 | 730 | 450 | 410 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 50 | 50 | 50 | 70 | 120 | 50 | 60 | 70 | 50 | 70 |
| Fluoranthene | -- | -- | 1700 | 2500 | 870 | 1200 | 810 | 1800 | 6700 | 1200 | 990 | 1700 | 710 | 630 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID / Sample ID / Sample Date / Sample Depth / SMS 2LAET[a] | DR024 SD-DR024-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge | DR025 SD-DR025-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge | DR026 SD-DR026-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge | DR049 SD-DR049-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge | DR050 SD-DR050-0000 8/31/1998 0-10 cm West Nav. Channel - Lafarge | DR051 SD-DR051-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge | DR052 SD-DR052-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge | DR062 SD-DR062-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge | DR063 SD-DR063-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge | DR074 SD-DR074-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | -- | -- | 540 | 1000 | 30 | 50 | 40 | 80 | 330 | 90 | 40 | 70 | 40 | 30 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 190 | 230 | 220 | 230 | 420 | 210 | 190 | 260 | 160 | 210 |
| Naphthalene | -- | -- | 2100 | 2400 | 20 U | 50 | 20 U | 20 U | 100 | 20 U | 20 U | 30 | 20 U | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 220 | 370 | 290 | 570 | 1400 | 580 | 210 | 390 | 240 | 210 |
| Pyrene | -- | -- | 2600 | 3300 | 640 | 910 | 750 | 970 | 4200 | 730 | 630 | 1300 | 580 | 490 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 640 | 820 | 670 | 910 | 1900 | 710 | 650 | 970 | 600 | 630 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 360 | 710 | 470 | 970 | 3100 | 1100 | 380 | 880 | 370 | 330 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3660 | 4900 | 3860 | 5800 | 18200 | 4200 | 3770 | 6300 | 3260 | 3180 |
| Total PAH (calc'd) | -- | -- | -- | -- | 4020 | 5600 | 4330 | 6700 | 21300 | 5300 | 4150 | 7200 | 3630 | 3510 |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.8 U | 0.081 U | 0.62 U | 0.76 U | -- | 0.72 U | 0.78 U | 0.92 U | 0.76 U | 0.81 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.8 U | 0.081 U | 0.62 U | 0.76 U | -- | 0.72 U | 0.78 U | 0.92 U | 0.76 U | 0.81 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.8 U | 0.16 U | 0.62 U | 0.76 U | -- | 0.72 U | 0.78 U | **0.92 U** | 0.76 U | **0.81 U** |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.8 U** | **0.71 U** | **0.62 U** | **0.76 U** | -- | **0.72 U** | **0.78 U** | **0.92 U** | **0.76 U** | **0.81 U** |
| **Benzenes (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | 2.3 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 2.3 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | 2.3 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 20 U | 4.6 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 18 | 17 | 14 | 16 | -- | 16 | 14 UJ | 26 | 19 | 20 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.6 | 0.71 U | 0.62 U | 1.5 | -- | 1.4 | 1.6 | 0.92 U | 1.5 | 1.6 |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.8 U | 0.71 U | 0.62 U | 0.76 U | -- | 0.72 U | 0.78 U | 0.92 U | 0.76 U | 0.81 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.8 U | 0.71 U | 0.62 U | 0.76 U | -- | 0.72 U | 0.78 U | 0.92 U | 0.76 U | 0.81 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 1.2 | 1.1 | 0.93 | 0.76 U | -- | 0.72 U | 0.78 U | 1.8 | 1.5 | 1.2 |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.8 U | 0.71 U | 0.62 U | 0.76 U | -- | 0.72 U | 0.78 U | 0.92 U | 0.76 U | 0.81 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 450 | 490 | 460 | 420 | 510 | 440 | 370 UJ | 570 | 510 | 480 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 40 | 20 U | 20 U | 40 | 50 | 40 | 40 | 20 U | 40 | 40 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 U | 20 U | 20 U | 20 U | 20 | 20 U | 20 U | 20 U | 20 U | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 30 | 30 | 30 | 20 U | 20 U | 20 U | 20 U | 40 | 40 | 30 |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 60 U | 60 U | 60 U | 60 U | 60 U | 60 U | 60 U | 60 U | 60 U | 60 U |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | SMS 2LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth | DR024<br>SD-DR024-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR025<br>SD-DR025-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR026<br>SD-DR026-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR049<br>SD-DR049-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR050<br>SD-DR050-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR051<br>SD-DR051-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR052<br>SD-DR052-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR062<br>SD-DR062-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR063<br>SD-DR063-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR074<br>SD-DR074-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| 4-Methylphenol | 670 | 670 | -- | -- | | 20 U | 100 | 20 U | 20 U | 20 U | 20 U | 20 U | 20 | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U |
| Phenol | 420 | 1200 | -- | -- | | 190 | 90 | 120 | 150 | 30 | 40 | 90 | 190 | 410 | 150 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | | 0.8 | 1.4 | 0.62 | 2.3 | -- | 3.6 | 0.78 U | 1.8 | 0.76 | 0.81 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | | 0.8 U | 0.081 U | 0.62 U | 0.76 U | -- | 0.72 U | 0.78 U | 0.92 U | 0.76 U | 0.81 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | | 1.6 U | 1.4 U | 1.2 U | 1.5 U | -- | 1.4 U | 1.6 U | 1.8 U | 1.5 U | 1.6 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | | 60 U | 60 U | 60 U | 60 U | 60 U | 60 U | 60 U | 60 U | 60 U | 60 U |
| Aniline | -- | -- | -- | -- | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | | 50 U | 50 U | 50 U | 50 U | 50 U | 50 U | 50 U | 50 U | 50 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U |
| Carbazole | -- | -- | -- | -- | | 30 | 30 | 30 | 60 | 260 | 40 | 30 | 70 | 30 | 30 |
| Dibenzofuran | -- | -- | 540 | 700 | | 20 | 40 | 20 | 60 | 260 | 100 | 20 U | 40 | 20 | 20 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | | 20 U | 2.3 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | | 20 U | 4.6 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | | 100 UJ | 100 UJ | 100 UJ | 100 UJ | 100 UJ | 100 UJ | 100 UJ | 100 UJ | 100 UJ | 100 UJ |
| Isophorone | -- | -- | -- | -- | | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR024<br>SD-DR024-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR025<br>SD-DR025-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR026<br>SD-DR026-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR049<br>SD-DR049-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR050<br>SD-DR050-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR051<br>SD-DR051-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR052<br>SD-DR052-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR062<br>SD-DR062-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR063<br>SD-DR063-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR074<br>SD-DR074-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | 3 U | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | 3 UJ | -- | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | 1 UJ | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | 1 UJ | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | 3 UJ | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | 6 U | -- | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | 2 UJ | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin aldehyde | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | 1 UJ | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | 3 U | -- | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | 180 U | -- | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | 3 UJ | -- | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | 3 UJ | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | 1 U | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 7.2 | 7.4 | 8.6 | 4.5 | -- | 1.8 UJ | 5.4 | 5 J | **12** | 5.2 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 UJ | 20 UJ | 50 UJ | 20 UJ | 20 UJ | 20 U | 20 UJ |
| Aroclor-1221 | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U | 40 U | 50 UJ | 40 U | 40 U | 40 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U | 20 U | 50 UJ | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U | 20 U | 50 UJ | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U | 20 U | 50 UJ | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 100 | 110 | 160 | 56 | 130 | 50 UJ | 63 | 56 | 130 | 62 |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR024<br>SD-DR024-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR025<br>SD-DR025-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR026<br>SD-DR026-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR049<br>SD-DR049-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR050<br>SD-DR050-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR051<br>SD-DR051-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR052<br>SD-DR052-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR062<br>SD-DR062-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR063<br>SD-DR063-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR074<br>SD-DR074-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | -- | -- | -- | -- | 80 | 100 | 120 | 64 | 110 J | 50 UJ | 75 | 54 J | 180 | 65 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 180 | 210 | 280 | 120 | 240 J | 50 UJ | 138 | 110 J | 310 | 127 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | 1000 UJ | 1000 J | 2000 J | 1000 U | 2000 | 1000 U | 1000 U | 1000 UJ | 1000 J | 1000 U |
| PCB-028 | -- | -- | -- | -- | 2000 J | 2000 J | 3000 J | 2000 | 3000 | 1000 | 2000 | 2000 UJ | 3000 J | 2000 |
| PCB-044 | -- | -- | -- | -- | 2000 J | 2000 J | 3000 J | 1000 | 3000 | 2000 | 1000 | 1000 J | 2000 J | 1000 |
| PCB-055 | -- | -- | -- | -- | 3000 J | 4000 J | 5000 J | 2000 | 6000 | 1000 | 3000 | 3000 UJ | 4000 J | 3000 |
| PCB-066 | -- | -- | -- | -- | 9000 UJ | 9000 J | 11000 J | 6000 | 16000 U | 5000 | 8000 | 7000 UJ | 11000 UJ | 6000 |
| PCB-077 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 U | 1000 U | 1000 U | 1000 U | 1000 UJ | 1000 UJ | 1000 U |
| PCB-081 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 U | 1000 U | 1000 U | 1000 U | 1000 UJ | 1000 UJ | 1000 U |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 5000 J | 7000 J | 8000 J | 5000 | 9000 | 1000 U | 3000 | 4000 J | 7000 J | 4000 |
| PCB-105 | -- | -- | -- | -- | 2000 J | 2000 J | 3000 J | 1000 | 4000 | 1000 | 2000 | 1000 J | 3000 J | 2000 |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 U | 1000 U | 1000 U | 1000 U | 1000 UJ | 1000 UJ | 1000 U |
| PCB-118 | -- | -- | -- | -- | 5000 J | 6000 J | 7000 J | 4000 | 8000 | 2000 | 5000 | 4000 J | 7000 J | 5000 |
| PCB-123 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 2000 UJ | 1000 U | 1000 U | 2000 U | 1000 U | 1000 UJ | 1000 UJ | 1000 U |
| PCB-126 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 U | 1000 U | 1000 | 1000 U | 1000 UJ | 1000 UJ | 1000 U |
| PCB-128 | -- | -- | -- | -- | 2000 J | 2000 J | 2000 J | 1000 | 2000 | 1000 U | 1000 | 1000 UJ | 2000 J | 1000 |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 11000 J | 12000 J | 15000 J | 9000 U | 17000 | 5000 | 10000 | 8000 J | 18000 UJ | 9000 |
| PCB-153 | -- | -- | -- | -- | 8000 J | 10000 J | 11000 J | 8000 | 12000 | 4000 | 8000 | 7000 J | 14000 J | 8000 |
| PCB-156 | -- | -- | -- | -- | 1000 J | 1000 J | 2000 J | 1000 U | 2000 | 1000 U | 1000 | 1000 UJ | 2000 J | 1000 |
| PCB-157 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 U | 1000 U | 1000 U | 1000 U | 1000 UJ | 1000 UJ | 1000 U |
| PCB-167 | -- | -- | -- | -- | 1000 UJ | 2000 UJ | 1000 UJ | 1000 U | 1000 U | 1000 U | 1000 U | 1000 UJ | 1000 J | 1000 U |
| PCB-169 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 U | 1000 U | 1000 U | 2000 U | 1000 U | 1000 UJ | 1000 U | 1000 U |
| PCB-170 | -- | -- | -- | -- | 3000 J | 4000 J | 5000 J | 3000 | 4000 | 2000 | 3000 | 3000 J | 8000 J | 3000 |
| PCB-180 | -- | -- | -- | -- | 6000 J | 7000 J | 8000 J | 5000 | 7000 | 3000 | 6000 | 5000 J | 12000 J | 5000 |
| PCB-187 | -- | -- | -- | -- | 4000 J | 5000 J | 5000 J | 4000 | 5000 | 1000 | 4000 | 3000 J | 7000 J | 4000 |
| PCB-189 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 U | 1000 U | 1000 U | 1000 U | 1000 UJ | 1000 UJ | 1000 U |
| PCB-195 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 U | 1000 U | 1000 U | 1000 U | 1000 UJ | 2000 J | 1000 U |
| PCB-206 | -- | -- | -- | -- | 1000 UJ | 1000 J | 1000 UJ | 1000 U | 1000 | 1000 U | 1000 U | 1000 UJ | 1000 J | 1000 U |
| PCB-209 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 U | 1000 U | 1000 U | 1000 U | 1000 U | 1000 UJ | 1000 U | 1000 U |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | 430 | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | 62 | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.6 J | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR024<br>SD-DR024-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR025<br>SD-DR025-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR026<br>SD-DR026-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR049<br>SD-DR049-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR050<br>SD-DR050-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR051<br>SD-DR051-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR052<br>SD-DR052-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge | DR062<br>SD-DR062-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR063<br>SD-DR063-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Lafarge | DR074<br>SD-DR074-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.5 U | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.5 J | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16 | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 U | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11 | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.4 U | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3 U | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.4 U | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2 U | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.8 U | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.58 U | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.3 | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4500 | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | 220 | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.8 J | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

**a** The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR075<br>SD-DR075-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR086<br>SD-DR086-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR089<br>SD-DR089-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | WST352<br>WST18-01<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST353<br>WST18-02<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST365<br>WST19-06<br>9/18/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST368<br>WST20-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 1.6 | 0.34 | 7.3 | -- | -- | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 40 | 13.8 | 80 | 2.1 | 1.6 | 2.6 | 1.8 |
| Silt (total calc'd) | -- | -- | -- | -- | 38 | 63 | 4.2 | 62 | 64 | 60 | 62 |
| Clay (total calc'd) | -- | -- | -- | -- | 22.2 | 23 | 3.7 | 36 | 34 | 37 | 37 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 61 | 86 | 7.9 | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.31 | 1.97 | 1.92 | 2.13 | 2.36 | 1.96 | 2.01 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | | | | |
| Aluminum | -- | -- | -- | -- | 21000 | 27000 | 22000 | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 10 UJ | 10 UJ | 10 UJ | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | 10 J | 9.1 | 16 | -- | -- | -- | -- |
| Barium | -- | -- | -- | -- | 82 | 91 | 120 | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | 0.45 | 0.47 | 0.39 | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.35 | 0.42 UJ | 0.77 | -- | -- | -- | -- |
| Calcium | -- | -- | -- | -- | 6600 J | 6900 | 8400 | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 32 J | 31 | 31 | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | 10 | 12 | 10 | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | 78 | 51 | 96 | -- | -- | -- | -- |
| Iron | -- | -- | -- | -- | 31000 J | 33000 J | 28000 J | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 43 J | 25 J | 130 | -- | -- | -- | -- |
| Magnesium | -- | -- | -- | -- | 9300 | 8900 | 7500 | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | 320 | 380 | 310 | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.21 | 0.14 | 0.24 | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | 22 | 22 J | 17 | -- | -- | -- | -- |
| Potassium | -- | -- | -- | -- | 3300 | 3200 | 2900 | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 0.7 J | 23 J | 0.7 J | -- | -- | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | 0.3 | 0.33 | 0.7 | -- | -- | -- | -- |
| Sodium | -- | -- | -- | -- | 13000 | 12000 | 9700 | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 0.13 | 0.13 J | 0.12 | -- | -- | -- | -- |
| Tin | -- | -- | -- | -- | 6 J | 4 UJ | 6 | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 63 | 79 | 58 | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | 140 | 94 | 190 | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR075<br>SD-DR075-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR086<br>SD-DR086-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR089<br>SD-DR089-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | WST352<br>WST18-01<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST353<br>WST18-02<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST365<br>WST19-06<br>9/18/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST368<br>WST20-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.87 U | 1 U | 1 U | -- | -- | -- | -- |
| Acenaphthylene | 66 | 66 | -- | -- | 0.87 U | 1 U | 1 U | -- | -- | -- | -- |
| Acenaphthene | 16 | 57 | -- | -- | 1.3 | 4.6 | 1.6 | -- | -- | -- | -- |
| Anthracene | 220 | 1200 | -- | -- | 3.9 | 8.1 | 3.6 | -- | -- | -- | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 13 | 19 | 15 | -- | -- | -- | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 11 | 11 | 20 | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 8.7 | 5.6 | 12 | -- | -- | -- | -- |
| Chrysene | 110 | 460 | -- | -- | 17 | 20 | 21 | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.2 | 1.5 | 3.1 | -- | -- | -- | -- |
| Fluoranthene | 160 | 1200 | -- | -- | 29 | 66 | 36 | -- | -- | -- | -- |
| Fluorene | 23 | 79 | -- | -- | 1.7 | 13 | 1.6 | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 9.5 | 6.1 | 13 | -- | -- | -- | -- |
| Naphthalene | 99 | 170 | -- | -- | 0.87 | 1 U | 1 U | -- | -- | -- | -- |
| Phenanthrene | 100 | 480 | -- | -- | 13 | 76 | 16 | -- | -- | -- | -- |
| Pyrene | 1000 | 1400 | -- | -- | 25 | 45 | 47 | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 28 | 23 | 36 | -- | -- | -- | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 21 | 100 | 22 | -- | -- | -- | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 140 | 200 | 200 | -- | -- | -- | -- |
| **PAHs (µg/kg dry weight)** | | | | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Acenaphthene | -- | -- | 500 | 730 | 30 | 90 | 30 | -- | -- | -- | -- |
| Anthracene | -- | -- | 960 | 4400 | 90 | 160 | 70 | -- | -- | -- | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 290 | 380 | 280 | -- | -- | -- | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 260 | 210 | 380 | -- | -- | -- | -- |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 380 | 250 | 400 | -- | -- | -- | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 270 | 210 | 300 | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 200 | 110 | 230 | -- | -- | -- | -- |
| Chrysene | -- | -- | 1400 | 2800 | 400 | 400 | 400 | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 50 | 30 | 60 | -- | -- | -- | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | 660 | 1300 | 690 | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR075<br>SD-DR075-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR086<br>SD-DR086-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR089<br>SD-DR089-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | WST352<br>WST18-01<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST353<br>WST18-02<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST365<br>WST19-06<br>9/18/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST368<br>WST20-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluorene | -- | -- | 540 | 1000 | 40 | 260 | 30 | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 220 | 120 | 250 | -- | -- | -- | -- |
| Naphthalene | -- | -- | 2100 | 2400 | 20 | 20 U | 20 U | -- | -- | -- | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | 300 | 1500 | 300 | -- | -- | -- | -- |
| Pyrene | -- | -- | 2600 | 3300 | 570 | 880 | 910 | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 650 | 460 | 700 | -- | -- | -- | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 480 | 2000 | 430 | -- | -- | -- | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3300 | 3900 | 3900 | -- | -- | -- | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | 3780 | 5900 | 4330 | -- | -- | -- | -- |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.87 U | 1 U | 1 U | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.87 U | 1 U | 1 U | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | **0.87 U** | **1 U** | **1 U** | -- | -- | -- | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.87 U** | **1 U** | **1 U** | -- | -- | -- | -- |
| **Benzenes (µg/kg dry weight)** | | | | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 23 | 12 | **48** | -- | -- | -- | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 2.2 | 1 | 2.6 | -- | -- | -- | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.87 U | 1 U | 1 U | -- | -- | -- | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.87 U | 1 U | 1 U | -- | -- | -- | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.87 U | 1 U | 1 U | -- | -- | -- | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.87 U | 1 U | 1 U | -- | -- | -- | -- |
| **Phthalates (µg/kg dry weight)** | | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 530 | 240 | 930 | -- | -- | -- | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 50 | 20 | 50 | -- | -- | -- | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| **Phenols (µg/kg dry weight)** | | | | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 40 U | 40 U | 40 U | -- | -- | -- | -- |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 60 U | 60 U | 60 U | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR075<br>SD-DR075-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR086<br>SD-DR086-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR089<br>SD-DR089-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | WST352<br>WST18-01<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST353<br>WST18-02<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST365<br>WST19-06<br>9/18/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST368<br>WST20-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | -- | -- | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | -- | -- | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | -- | -- | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U | -- | -- | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U | -- | -- | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | 100 U | 100 U | 100 U | -- | -- | -- | -- |
| Phenol | 420 | 1200 | -- | -- | 70 | 20 U | 20 U | -- | -- | -- | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 1.3 | 4.6 | 1 U | -- | -- | -- | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.87 U | 1 U | 1 U | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.7 U | 2 U | 2.1 U | -- | -- | -- | -- |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U | -- | -- | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | 200 U | 200 U | 200 U | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 200 U | 200 U | 200 U | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | 60 U | 60 U | 60 U | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 50 U | 50 U | -- | -- | -- | -- |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | 200 U | 200 U | -- | -- | -- | -- |
| Carbazole | -- | -- | -- | -- | 40 | 30 | 40 | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 30 | 90 | 20 U | -- | -- | -- | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Hexachloroethane | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 100 U | 100 UJ | 100 U | -- | -- | -- | -- |
| Isophorone | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 40 U | 40 U | 40 U | -- | -- | -- | -- |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 40 U | 40 U | 40 U | -- | -- | -- | -- |
| **Ethers (µg/kg dry weight)** | | | | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | -- | -- | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | -- | -- | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR075<br>SD-DR075-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR086<br>SD-DR086-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR089<br>SD-DR089-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | WST352<br>WST18-01<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST353<br>WST18-02<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST365<br>WST19-06<br>9/18/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST368<br>WST20-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pesticides (µg/kg dry weight)** | | | | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 5.1 | 5.9 J | **14** | 3.1 J | 3.1 J | 4 J | 4.3 J |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 UJ | 20 UJ | 20 UJ | -- | -- | -- | -- |
| Aroclor-1221 | -- | -- | -- | -- | 40 U | 40 U | 40 U | -- | -- | -- | -- |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U | 33 | -- | -- | -- | -- |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- | -- | -- | -- |
| Aroclor-1254 | -- | -- | -- | -- | 55 | 62 | 140 | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR075<br>SD-DR075-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR086<br>SD-DR086-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR089<br>SD-DR089-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | WST352<br>WST18-01<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST353<br>WST18-02<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST365<br>WST19-06<br>9/18/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST368<br>WST20-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | -- | -- | -- | -- | 63 | 54 J | 96 | -- | -- | -- | -- |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 118 | 116 J | 270 | 65 J | 72 J | 78 J | 87 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | 1000 U | 1000 U | 2000 J | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | 1000 | 2000 | 4000 J | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | 1000 | 1000 | 5000 J | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | 2000 | 2000 | 7000 J | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | 6000 | 5000 U | 15000 U | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 U | 270 U | 240 U | 260 U | 240 U |
| PCB-081 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 UJ | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 3000 | 3000 | 10000 J | 20000 J | 22000 J | 25000 J | 26000 J |
| PCB-105 | -- | -- | -- | -- | 1000 | 1000 | 5000 J | 2300 | 2400 | 3400 | 3000 |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | 4700 | 5000 | 5300 | 6800 |
| PCB-114 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 UJ | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | 4000 | 3000 | 10000 | 4300 | 4700 | 4700 | 6000 |
| PCB-123 | -- | -- | -- | -- | 1000 U | 1000 U | 2000 UJ | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 U | 250 U | 220 U | 240 U | 210 U |
| PCB-128 | -- | -- | -- | -- | 1000 U | 1000 U | 3000 J | 3700 J | 3100 J | 2000 J | 3900 J |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 8000 | 5000 | 19000 UJ | 4500 | 4800 | 4600 | 6100 |
| PCB-153 | -- | -- | -- | -- | 7000 | 4000 | 12000 J | 14000 J | 15000 J | 18000 J | 19000 J |
| PCB-156 | -- | -- | -- | -- | 1000 | 1000 U | 2000 J | 650 | 540 | 480 J | 690 |
| PCB-157 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 UJ | 200 U | 170 U | 190 U | 540 |
| PCB-167 | -- | -- | -- | -- | 1000 U | 1000 U | 2000 J | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 U | 610 U | 530 U | 590 U | 530 U |
| PCB-170 | -- | -- | -- | -- | 3000 | 1000 | 6000 J | 3100 | 3300 | 4100 | 4300 |
| PCB-180 | -- | -- | -- | -- | 5000 | 4000 | 9000 J | 4900 | 5100 | 3900 | 6400 |
| PCB-187 | -- | -- | -- | -- | 3000 | 3000 | 6000 J | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 UJ | 280 U | 240 U | 270 U | 240 U |
| PCB-195 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 J | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 U | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-1**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR075<br>SD-DR075-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR086<br>SD-DR086-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Lafarge | DR089<br>SD-DR089-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - Lafarge | WST352<br>WST18-01<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST353<br>WST18-02<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST365<br>WST19-06<br>9/18/1997<br>0-10 cm<br>West Nav. Channel - Lafarge | WST368<br>WST20-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - Lafarge |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0031<br>CH09-02<br>10/16/1997<br>0-10 cm<br>Nav. Channel - AML | LDW-SC25<br>LDW-SC25-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | 1.3 | 1.3 | 0.3 |
| Sand (total calc'd) | -- | -- | -- | -- | 5.2 | 20.5 | 17.3 | 19.4 |
| Silt (total calc'd) | -- | -- | -- | -- | 67 | 56.8 | 58.7 | 55.6 |
| Clay (total calc'd) | -- | -- | -- | -- | 28 | 21.5 | 22.7 | 24.5 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | 78.3 | 81.4 | 80.1 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.21 | 1.94 | 1.47 | 1.69 |
| Total solids | -- | -- | -- | -- | -- | 47.5 | 52.2 | 54.4 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | 10 UJ | 16 J | 30 J |
| Arsenic | 57 | 93 | -- | -- | -- | 50 | **91** | ***170*** |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | 0.4 | 0.5 | 0.8 U |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | -- | 42 | 44.7 | 45 |
| Cobalt | -- | -- | -- | -- | -- | 11.6 | 14.5 | 20 |
| Copper | 390 | 390 | -- | -- | -- | 327 | 339 | ***541*** |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | -- | 76 | 98 | 173 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0031<br>CH09-02<br>10/16/1997<br>0-10 cm<br>Nav. Channel - AML | LDW-SC25<br>LDW-SC25-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | -- | 0.27 | 0.3 | 0.4 |
| Molybdenum | -- | -- | -- | -- | -- | 4 | 6.5 | 10 |
| Nickel | -- | -- | -- | -- | -- | 24 | 26 | 27 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | 10 U | 9 U | 20 U |
| Silver | 6.1 | 6.1 | -- | -- | -- | 0.6 U | 0.5 U | 1 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | 10 U | 9 U | 20 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | 73.1 | 75.1 | 79 |
| Zinc | 410 | 960 | -- | -- | -- | 263 | **503** | **750** |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0031<br>CH09-02<br>10/16/1997<br>0-10 cm<br>Nav. Channel - AML | LDW-SC25<br>LDW-SC25-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | 12 | 13 | 18 |
| Dibutyltin as ion | -- | -- | -- | -- | -- | 72 | 64 | 150 |
| Tributyltin as ion | -- | -- | -- | -- | -- | 220 | 350 | 720 |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | 3.5 U | 4.1 U | 3.6 U |
| Acenaphthylene | 66 | 66 | -- | -- | -- | 3.5 U | 2.1 J | 3.6 U |
| Acenaphthene | 16 | 57 | -- | -- | -- | 2 J | 2.4 J | 7.1 |
| Anthracene | 220 | 1200 | -- | -- | -- | 8.8 | 10 | 13 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | 26 | 43 | 39 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | 26 | 40 | 41 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | 6.7 | 9.5 | 9.5 |
| Chrysene | 110 | 460 | -- | -- | -- | 47 | 67 | 54 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | 3.5 U | 3.3 J | 3.1 J |
| Fluoranthene | 160 | 1200 | -- | -- | -- | 47 | 95 | 120 |
| Fluorene | 23 | 79 | -- | -- | -- | 2.7 J | 2.5 J | 4.5 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | 9.3 | 14 | 12 |
| Naphthalene | 99 | 170 | -- | -- | -- | 3.5 U | 4.1 U | 2.4 J |
| Phenanthrene | 100 | 480 | -- | -- | -- | 21 | 23 | 31 |
| Pyrene | 1000 | 1400 | -- | -- | -- | 47 | 120 | 95 |
| Benzofluoranthenes (total-calc'd | 230 | 450 | -- | -- | -- | 64 | 110 | 96 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | 35 J | 40 J | 59 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | 270 | 500 J | 470 J |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | 68 U | 60 U | 60 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | 68 U | 60 U | 60 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0031<br>CH09-02<br>10/16/1997<br>0-10 cm<br>Nav. Channel - AML | LDW-SC25<br>LDW-SC25-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | 68 U | 31 J | 60 U |
| Acenaphthene | -- | -- | 500 | 730 | -- | 38 J | 35 J | 120 |
| Anthracene | -- | -- | 960 | 4400 | -- | 170 | 150 | 220 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | 500 | 630 | 660 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | 500 | 590 | 700 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | 720 | 850 | 840 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | 530 | 720 | 780 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | 130 | 140 | 160 |
| Chrysene | -- | -- | 1400 | 2800 | -- | 920 | 990 | 910 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | 68 U | 48 J | 53 J |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | 910 | 1400 | 2100 |
| Fluorene | -- | -- | 540 | 1000 | -- | 52 J | 37 J | 76 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | 180 | 200 | 210 |
| Naphthalene | -- | -- | 2100 | 2400 | -- | 68 U | 60 U | 41 J |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | 410 | 340 | 530 |
| Pyrene | -- | -- | 2600 | 3300 | -- | 920 | 1800 | 1600 |
| Benzofluoranthenes (total-calc'd | -- | -- | 3200 | 3600 | -- | 1250 | 1570 | 1620 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | 670 J | 590 J | 990 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | 5310 | 7400 J | 8000 J |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | 5980 J | 8000 J | 9000 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | 0.35 U | 0.41 U | 0.46 |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | 0.35 U | 0.41 U | 0.25 J |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | 0.35 UJ | 0.41 UJ | 0.36 UJ |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | 0.35 U | **0.41 U** | 0.36 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | 6.8 U | 6 U | 7.8 |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0031<br>CH09-02<br>10/16/1997<br>0-10 cm<br>Nav. Channel - AML | LDW-SC25<br>LDW-SC25-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | 68 U | 60 U | 60 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | 6.8 U | 6 U | 4.2 J |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | 6.8 UJ | 6 UJ | 6 UJ |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | 6.8 U | 6 U | 6 U |
| Nitrobenzene | -- | -- | -- | -- | -- | 68 U | 60 U | 60 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | 18 | 22 | 44 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | 1.4 | 2.2 | 3.7 |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | 3.5 U | 4.1 U | 3.6 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | 3.5 U | 4.1 U | 3.6 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | 3.5 U | 5.6 U | 3.6 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | 3.5 U | 4.1 U | 3.6 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | 350 | 320 | 740 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | 27 | 32 | 62 |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | 68 U | 60 U | 60 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | 68 U | 60 U | 60 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | 68 U | 83 U | 60 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | 68 U | 60 U | 60 U |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0031<br>CH09-02<br>10/16/1997<br>0-10 cm<br>Nav. Channel - AML | LDW-SC25<br>LDW-SC25-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | 68 U | 60 U | 60 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | 340 U | 300 U | 300 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | 340 U | 300 U | 300 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | 6.8 UJ | 6 UJ | 7.8 |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | 680 UJ | 600 UJ | 600 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | 4.1 J | 6 U | 8.4 J |
| 4-Methylphenol | 670 | 670 | -- | -- | -- | 68 U | 60 U | 60 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | 340 U | 300 U | 300 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | 340 U | 300 U | 300 U |
| 2-Nitrophenol | -- | -- | -- | -- | -- | 340 U | 300 U | 300 U |
| 4-Nitrophenol | -- | -- | -- | -- | -- | 340 U | 300 U | 300 U |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | 20 J | 21 J | 37 J |
| Phenol | 420 | 1200 | -- | -- | -- | 68 U | 60 U | 60 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | 3.5 U | 4.1 U | 3.3 J |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | 0.35 U | 0.41 U | 0.36 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | 1.7 U | 2.2 U | 3.4 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | 340 U | 300 U | 300 U |
| 3-Nitroaniline | -- | -- | -- | -- | -- | 340 UJ | 300 UJ | 300 UJ |
| 4-Nitroaniline | -- | -- | -- | -- | -- | 340 U | 300 U | 300 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | 340 UJ | 300 UJ | 300 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | -- | 340 UJ | 300 UJ | 300 UJ |
| Aniline | -- | -- | -- | -- | -- | 68 UJ | 60 UJ | 60 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | 26 J | 19 J | 20 J |
| Benzoic acid | 650 | 650 | -- | -- | -- | 75 UJ | 60 UJ | 77 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0031<br>CH09-02<br>10/16/1997<br>0-10 cm<br>Nav. Channel - AML | LDW-SC25<br>LDW-SC25-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | 68 U | 60 U | 56 J |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | 6.8 U | 6 U | 6 U |
| Hexachloroethane | -- | -- | -- | -- | -- | 68 U | 60 U | 60 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | 340 UJ | 300 UJ | 300 UJ |
| Isophorone | -- | -- | -- | -- | -- | 68 U | 60 U | 60 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | 34 UJ | 30 UJ | 30 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | 34 U | 30 U | 30 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | 33 U | 32 U | 58 U |

## Table B-2

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0031<br>CH09-02<br>10/16/1997<br>0-10 cm<br>Nav. Channel - AML | LDW-SC25<br>LDW-SC25-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | 68 U | 60 U | 60 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | 68 U | 60 U | 60 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | 68 U | 60 U | 60 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | 68 U | 60 U | 60 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 5 | **16** | **24** | **25** |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | -- | 55 | 64 | 82 |
| Aroclor-1254 | -- | -- | -- | -- | -- | 140 | 170 | 200 |
| Aroclor-1260 | -- | -- | -- | -- | -- | 110 | 130 | 150 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 110 | 310 | 360 | 430 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | 320 U | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 33000 J | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | 5100 | -- | -- | -- |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0031<br>CH09-02<br>10/16/1997<br>0-10 cm<br>Nav. Channel - AML | LDW-SC25<br>LDW-SC25-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| PCB-110 | -- | -- | -- | -- | 8200 | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | 8300 | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | 290 U | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | 4800 J | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 7000 | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | 23000 J | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | 700 | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | 230 U | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | 730 U | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | 5200 | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | 7400 | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 330 U | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting

## Table B-2

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0031<br>CH09-02<br>10/16/1997<br>0-10 cm<br>Nav. Channel - AML | LDW-SC25<br>LDW-SC25-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

## Table B-2

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC25<br>LDW-SC25-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-8-9.1<br>2/17/2006<br>8-9.1 FT<br>West Nav. Channel - AML | LDW-SS325<br>LDW-SS325-010<br>)/4/2006 1:52:00 P<br>0-10 cm<br>East Nav. Channel - AML | LDW-SS44<br>LDW-SS44-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | 17.1 | 61.7 |
| Sand (total calc'd) | -- | -- | -- | -- | -- | -- | 20.3 | 16.5 |
| Silt (total calc'd) | -- | -- | -- | -- | -- | -- | 46.4 | 14.7 |
| Clay (total calc'd) | -- | -- | -- | -- | -- | -- | 16.2 | 7.1 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | 62.6 | 21.8 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.63 | 0.11 | 2.11 | 1.53 |
| Total solids | -- | -- | -- | -- | 52.6 | 76.8 | 50.1 | 74.2 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | 51.3 |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | 6.73 |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | 150 J |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 30 J | 6 UJ | 0.4 UJ | 0.9 J |
| Arsenic | 57 | 93 | -- | -- | ***250*** | 8 | 13 | 46.8 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 1.5 | 0.2 U | 0.6 | 0.7 |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 55 | 8.3 | 34 | 33.2 |
| Cobalt | -- | -- | -- | -- | 22 | 3.3 | 9.2 | 9.8 |
| Copper | 390 | 390 | -- | -- | ***663*** | 7.5 | 96 | 214 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 310 | 2 U | 61 | 68 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC25<br>LDW-SC25-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-8-9.1<br>2/17/2006<br>8-9.1 FT<br>West Nav. Channel - AML | LDW-SS325<br>LDW-SS325-010<br>)/4/2006 1:52:00 P<br>0-10 cm<br>East Nav. Channel - AML | LDW-SS44<br>LDW-SS44-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- | 0.3 | 0.23 |
| Molybdenum | -- | -- | -- | -- | 16 | 0.7 | 0.9 | 4.5 |
| Nickel | -- | -- | -- | -- | 28 | 5 | 28 | 21 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 20 U | 6 U | 1 U | 9 U |
| Silver | 6.1 | 6.1 | -- | -- | 1 U | 0.4 U | 0.6 J | 0.5 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 20 U | 6 U | 0.4 U | 0.3 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 89 | 37.5 | 63.7 | 61 |
| Zinc | 410 | 960 | -- | -- | ***1420*** | 17.6 | 170 | 242 |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC25<br>LDW-SC25-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-8-9.1<br>2/17/2006<br>8-9.1 FT<br>West Nav. Channel - AML | LDW-SS325<br>LDW-SS325-010<br>)/4/2006 1:52:00 P<br>0-10 cm<br>East Nav. Channel - AML | LDW-SS44<br>LDW-SS44-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 7.8 U | 3.8 U | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | 92 | 5.4 U | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | 1000 | 3.6 U | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | -- | 2.9 U | 3.8 U |
| Acenaphthylene | 66 | 66 | -- | -- | -- | -- | 2.9 U | 3.8 U |
| Acenaphthene | 16 | 57 | -- | -- | -- | -- | 2.9 U | 3.8 U |
| Anthracene | 220 | 1200 | -- | -- | -- | -- | 4.7 | 13 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | -- | 15 | 37 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | -- | 16 | 31 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | -- | 6.2 | 11 |
| Chrysene | 110 | 460 | -- | -- | -- | -- | 25 | 42 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | -- | 1.8 | 3.8 U |
| Fluoranthene | 160 | 1200 | -- | -- | -- | -- | 41 | 61 |
| Fluorene | 23 | 79 | -- | -- | -- | -- | 2.9 U | 4.1 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | -- | 6.2 | 11 |
| Naphthalene | 99 | 170 | -- | -- | -- | -- | 2.9 U | 3.8 U |
| Phenanthrene | 100 | 480 | -- | -- | -- | -- | 13 | 29 |
| Pyrene | 1000 | 1400 | -- | -- | -- | -- | 31 | 72 |
| Benzofluoranthenes (total-calc'd | 230 | 450 | -- | -- | -- | -- | 45 | 69 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | -- | 18 | 46 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | -- | 190 | 330 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | 62 U | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | -- | 62 U | 58 U |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC25<br>LDW-SC25-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-8-9.1<br>2/17/2006<br>8-9.1 FT<br>West Nav. Channel - AML | LDW-SS325<br>LDW-SS325-010<br>)/4/2006 1:52:00 P<br>0-10 cm<br>East Nav. Channel - AML | LDW-SS44<br>LDW-SS44-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | -- | 62 U | 58 U |
| Acenaphthene | -- | -- | 500 | 730 | -- | -- | 62 U | 58 U |
| Anthracene | -- | -- | 960 | 4400 | -- | -- | 100 | 200 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | -- | 320 | 570 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | -- | 330 | 470 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | -- | 580 | 510 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | -- | 370 | 550 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | -- | 130 | 170 |
| Chrysene | -- | -- | 1400 | 2800 | -- | -- | 530 | 650 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | -- | 38 | 58 U |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | -- | 860 | 940 |
| Fluorene | -- | -- | 540 | 1000 | -- | -- | 62 U | 63 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | -- | 130 | 170 |
| Naphthalene | -- | -- | 2100 | 2400 | -- | -- | 62 U | 58 U |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | -- | 270 | 450 |
| Pyrene | -- | -- | 2600 | 3300 | -- | -- | 660 | 1100 |
| Benzofluoranthenes (total-calc'd | -- | -- | 3200 | 3600 | -- | -- | 950 | 1060 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | -- | 370 | 710 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | -- | 3950 | 5100 |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | -- | 4320 | 5800 |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | -- | 0.29 U | 0.43 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | -- | 0.29 U | 0.43 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | -- | 0.29 U | 0.43 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | -- | 0.29 U | 0.22 UJ |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | -- | 6.2 U | 6.6 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC25<br>LDW-SC25-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-8-9.1<br>2/17/2006<br>8-9.1 FT<br>West Nav. Channel - AML | LDW-SS325<br>LDW-SS325-010<br>)/4/2006 1:52:00 P<br>0-10 cm<br>East Nav. Channel - AML | LDW-SS44<br>LDW-SS44-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | -- | 62 U | 58 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | -- | 6.2 U | 6.6 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | -- | 6.2 U | 6.6 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | -- | 6.2 U | 3.3 UJ |
| Nitrobenzene | -- | -- | -- | -- | -- | -- | 62 U | 58 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | 17 | 7.8 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | -- | 1.4 | 0.43 U |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | -- | 2.9 U | 0.72 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | -- | 0.29 | 0.43 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | -- | 2.9 U | 3.8 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | -- | 2.9 U | 3.8 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | -- | 360 | 120 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | -- | 30 | 6.6 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | -- | 62 U | 11 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | -- | 6.2 | 6.6 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | -- | 62 U | 58 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | -- | 62 U | 58 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC25<br>LDW-SC25-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-8-9.1<br>2/17/2006<br>8-9.1 FT<br>West Nav. Channel - AML | LDW-SS325<br>LDW-SS325-010<br>)/4/2006 1:52:00 P<br>0-10 cm<br>East Nav. Channel - AML | LDW-SS44<br>LDW-SS44-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- | 62 U | 58 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | 6.2 U | 6.6 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- | 620 UJ | 580 U |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | 6.2 U | 6.6 U |
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | 62 U | 58 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | 31 U | 33 UJ |
| Phenol | 420 | 1200 | -- | -- | -- | -- | 62 U | 58 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | -- | 2.9 U | 3.8 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | -- | 0.29 U | 0.43 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | 0.29 U | 0.43 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | 310 U | 290 U |
| Aniline | -- | -- | -- | -- | -- | -- | 62 UJ | 58 U |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | 31 UJ | 33 U |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | 620 U | 66 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC25<br>LDW-SC25-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-8-9.1<br>2/17/2006<br>8-9.1 FT<br>West Nav. Channel - AML | LDW-SS325<br>LDW-SS325-010<br>)/4/2006 1:52:00 P<br>0-10 cm<br>East Nav. Channel - AML | LDW-SS44<br>LDW-SS44-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Carbazole | -- | -- | -- | -- | -- | -- | -- | 58 U |
| Dibenzofuran | -- | -- | 540 | 700 | -- | -- | 62 U | 58 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | -- | 6.2 U | 6.6 U |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | 62 U | 58 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- | 310 UJ | 290 U |
| Isophorone | -- | -- | -- | -- | -- | -- | 62 U | 58 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- | 31 U | 33 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | 31 U | 33 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | -- | 6.2 U | 6.6 U |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC25<br>LDW-SC25-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-8-9.1<br>2/17/2006<br>8-9.1 FT<br>West Nav. Channel - AML | LDW-SS325<br>LDW-SS325-010<br>)/4/2006 1:52:00 P<br>0-10 cm<br>East Nav. Channel - AML | LDW-SS44<br>LDW-SS44-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- | 62 U | 58 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- | 62 U | 58 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- | 62 U | 58 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- | 62 U | 58 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **49 J** | -- | **13** | 6.7 J |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 3.9 U | 3.9 U | 3.9 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 3.9 U | 3.9 U | 3.9 U | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 3.9 U | 3.9 U | 3.9 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 78 J | 3.9 U | 3.9 U | 24 J |
| Aroclor-1248 | -- | -- | -- | -- | 3.9 U | 3.9 U | 60 | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 470 | 3.9 U | 100 | 45 |
| Aroclor-1260 | -- | -- | -- | -- | 250 | 3.9 U | 110 | 34 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 800 J | 3.9 U | 270 | 103 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC25<br>LDW-SC25-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-8-9.1<br>2/17/2006<br>8-9.1 FT<br>West Nav. Channel - AML | LDW-SS325<br>LDW-SS325-010<br>)/4/2006 1:52:00 P<br>0-10 cm<br>East Nav. Channel - AML | LDW-SS44<br>LDW-SS44-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting

## Table B-2

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC25<br>LDW-SC25-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - AML | LDW-SC25<br>LDW-SC25-8-9.1<br>2/17/2006<br>8-9.1 FT<br>West Nav. Channel - AML | LDW-SS325<br>LDW-SS325-010<br>)/4/2006 1:52:00 P<br>0-10 cm<br>East Nav. Channel - AML | LDW-SS44<br>LDW-SS44-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. | | | | | | | |
| UJ | The analyte was not detected at the estimated detection limit. | | | | | | | |
| C | The metal analyte is estimated below the reporting limit. | | | | | | | |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. | | | | | | | |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. | | | | | | | |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. | | | | | | | |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS45<br>LDW-SS45-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS46<br>LDW-SS46-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS47<br>LDW-SS47-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | DR027<br>SD-DR027-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.1 U | 1.5 | 7.7 | 0.4 |
| Sand (total calc'd) | -- | -- | -- | -- | 26 | 64.5 | 84.8 | 10.7 |
| Silt (total calc'd) | -- | -- | -- | -- | 54.6 | 22.1 | 5.1 | 63 |
| Clay (total calc'd) | -- | -- | -- | -- | 19.4 | 11.7 | 2.3 | 26 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 74 | 33.8 | 7.4 | 89 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.81 | 2.07 | 1.45 | 2.49 |
| Total solids | -- | -- | -- | -- | 45.45 | 63.3 | 75.8 | -- |
| Total solids (preserved) | -- | -- | -- | -- | 43.3 | 69.5 | 71.7 | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | 13.1 | 4.77 | 2.2 | -- |
| Sulfides (total) | -- | -- | -- | -- | 11 UJ | 170 J | 5.2 UJ | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | 19000 |
| Antimony | -- | -- | -- | -- | 0.4 UJ | 0.7 J | 1.8 J | 10 UJ |
| Arsenic | 57 | 93 | -- | -- | 26.2 | **71.1** | ***161*** | 13 |
| Barium | -- | -- | -- | -- | -- | -- | -- | 7400 |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | 0.45 |
| Cadmium | 5.1 | 6.7 | -- | -- | 1 | 0.8 | 1 U | 0.44 |
| Calcium | -- | -- | -- | -- | -- | -- | -- | 7400 |
| Chromium | 260 | 270 | -- | -- | 41 | 56 | 53 | 29 |
| Cobalt | -- | -- | -- | -- | 11.2 | 28 | 30 | 9 |
| Copper | 390 | 390 | -- | -- | 155 | ***1230*** | ***1340*** | 70 |
| Iron | -- | -- | -- | -- | -- | -- | -- | 28000 |
| Lead | 450 | 530 | -- | -- | 98 | 125 | 130 | 44 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | 7300 |
| Manganese | -- | -- | -- | -- | -- | -- | -- | 320 |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS45<br>LDW-SS45-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS46<br>LDW-SS46-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS47<br>LDW-SS47-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | DR027<br>SD-DR027-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.4 | 0.33 | 0.09 | 0.21 |
| Molybdenum | -- | -- | -- | -- | 3 | 11 | 20 | -- |
| Nickel | -- | -- | -- | -- | 25 | 27 | 30 | 21 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | 2500 |
| Selenium | -- | -- | -- | -- | 10 U | 20 U | 30 U | 7 |
| Silver | 6.1 | 6.1 | -- | -- | 0.7 U | 1 U | 2 U | 0.43 |
| Sodium | -- | -- | -- | -- | -- | -- | -- | 11000 |
| Thallium | -- | -- | -- | -- | 0.5 | 0.3 U | 0.2 U | 0.1 |
| Tin | -- | -- | -- | -- | -- | -- | -- | 5 |
| Vanadium | -- | -- | -- | -- | 76.9 | 86 | 77 | 54 |
| Zinc | 410 | 960 | -- | -- | 217 | **794** | **878** | 130 |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS45<br>LDW-SS45-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS46<br>LDW-SS46-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS47<br>LDW-SS47-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | DR027<br>SD-DR027-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 3.9 UJ | 15 | 16 J | -- |
| Dibutyltin as ion | -- | -- | -- | -- | 31 | 560 | 150 J | -- |
| Tributyltin as ion | -- | -- | -- | -- | 260 | 3000 | 230 J | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 2.1 U | 2.8 U | 2.3 | 0.8 U |
| Acenaphthylene | 66 | 66 | -- | -- | 2.1 U | 2.8 U | 1.9 | 0.8 U |
| Acenaphthene | 16 | 57 | -- | -- | 2.1 U | 5.3 | 8.3 | 1.6 |
| Anthracene | 220 | 1200 | -- | -- | 3.1 | 15 | 14 | 5.6 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 8.2 | 44 | 34 | 14 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 8.5 | 53 | 33 | 13 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 3.6 | 15 | 16 | 7.6 |
| Chrysene | 110 | 460 | -- | -- | 14 | 68 | 41 | 22 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.1 U | 2.8 J | 4 U | 2 |
| Fluoranthene | 160 | 1200 | -- | -- | 18 | 92 | 83 | 34 |
| Fluorene | 23 | 79 | -- | -- | 2.1 U | 5.8 | 9.7 | 2.4 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 4.3 | 33 | 21 | 8.8 |
| Naphthalene | 99 | 170 | -- | -- | 2.1 U | 4.3 | 4.9 | 0.8 U |
| Phenanthrene | 100 | 480 | -- | -- | 6.4 | 44 | 69 | 14 |
| Pyrene | 1000 | 1400 | -- | -- | 16 | 120 | 68 | 26 |
| Benzofluoranthenes (total-calc'd | 230 | 450 | -- | -- | 21 | 140 | 63 | 27 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 9.6 | 74 | 110 | 24 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 93 | 570 J | 360 | 150 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 59 U | 58 U | 33 | 20 U |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS45<br>LDW-SS45-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS46<br>LDW-SS46-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS47<br>LDW-SS47-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | DR027<br>SD-DR027-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 59 U | 58 U | 28 | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 59 U | 110 | 120 | 40 |
| Anthracene | -- | -- | 960 | 4400 | 88 | 310 | 200 | 140 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 230 | 920 | 490 | 350 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 240 | 1100 | 480 | 320 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 320 | 1800 | 460 | 360 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 270 | 1200 | 460 | 320 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 100 | 320 | 230 | 190 |
| Chrysene | -- | -- | 1400 | 2800 | 390 | 1400 | 590 | 540 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 59 U | 58 J | 58 U | 50 |
| Fluoranthene | -- | -- | 1700 | 2500 | 500 | 1900 | 1200 | 850 |
| Fluorene | -- | -- | 540 | 1000 | 59 U | 120 | 140 | 60 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 120 | 680 | 300 | 220 |
| Naphthalene | -- | -- | 2100 | 2400 | 59 U | 90 | 71 | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 180 | 910 | 1000 | 350 |
| Pyrene | -- | -- | 2600 | 3300 | 440 | 2400 | 980 | 640 |
| Benzofluoranthenes (total-calc'd | -- | -- | 3200 | 3600 | 590 | 3000 | 920 | 680 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 270 | 1540 | 1600 | 590 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2610 | 11800 J | 5200 | 3840 |
| Total PAH (calc'd) | -- | -- | -- | -- | 2880 | 13300 J | 6700 | 4430 |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.23 U | 0.68 U | 0.76 U | 0.8 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.23 U | 0.68 U | 0.76 U | 0.8 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.23 U | 0.68 U | 0.76 U | 0.8 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.23 U | 0.33 UJ | 0.37 UJ | **0.8 U** |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6.6 U | 14 U | 11 U | 20 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS45<br>LDW-SS45-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS46<br>LDW-SS46-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS47<br>LDW-SS47-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | DR027<br>SD-DR027-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 59 U | 58 U | 19 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6.6 U | 14 U | 11 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6.6 U | 14 U | 11 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 6.6 U | 6.8 UJ | 5.4 UJ | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 59 U | 58 U | 19 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 11 | **77** | 14 | 21 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.23 U | 0.68 U | 1.5 | 0.8 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.23 U | 0.77 | 0.83 | 0.8 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.23 U | 0.68 U | 0.83 | 0.8 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.1 U | 2.8 U | 3 | 1.2 |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.1 U | 2.8 U | 1.3 U | 0.8 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 300 | 1600 | 200 | 530 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 6.6 U | 14 U | 22 | 20 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 6.6 U | 16 | 12 | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 6.6 U | 14 U | 12 | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 59 U | 58 U | 43 | 30 |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 59 U | 58 U | 19 U | 20 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS45<br>LDW-SS45-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS46<br>LDW-SS46-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS47<br>LDW-SS47-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | DR027<br>SD-DR027-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 59 U | 58 U | 19 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 300 U | 290 U | 96 U | 40 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 300 U | 290 U | 96 U | 60 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6.6 U | 14 U | 11 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 590 UJ | 580 UJ | 190 UJ | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6.6 U | 14 U | 11 U | 20 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 59 U | 58 U | 21 | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 300 U | 290 U | 96 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 300 U | 290 U | 96 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | 300 U | 290 U | 96 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 300 U | 290 U | 96 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 33 U | 76 | 54 U | 100 U |
| Phenol | 420 | 1200 | -- | -- | 59 U | 62 | 220 | 270 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 2.1 U | 3.4 | 5.4 | 1.2 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.23 U | 0.68 U | 0.76 U | 0.8 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.23 U | 0.68 U | 1 | 1.6 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 300 U | 290 U | 96 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 300 U | 290 U | 96 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | 300 U | 290 U | 96 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 300 U | 290 U | 96 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | 300 U | 290 U | 96 U | 60 U |
| Aniline | -- | -- | -- | -- | 59 U | 58 U | 19 U | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 33 U | 34 UJ | 54 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 66 UJ | 220 J | 220 J | 200 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS45<br>LDW-SS45-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS46<br>LDW-SS46-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS47<br>LDW-SS47-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | DR027<br>SD-DR027-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Carbazole | -- | -- | -- | -- | 59 U | 180 | 92 | 40 |
| Dibenzofuran | -- | -- | 540 | 700 | 59 U | 71 | 78 | 30 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6.6 U | 14 U | 11 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 59 U | 58 U | 19 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 300 UJ | 290 UJ | 96 UJ | 100 UJ |
| Isophorone | -- | -- | -- | -- | 59 U | 58 U | 19 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 33 U | 67 U | 54 U | 40 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 33 U | 67 U | 54 U | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 6.6 U | 14 U | 15 | 40 U |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS45<br>LDW-SS45-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS46<br>LDW-SS46-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS47<br>LDW-SS47-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | DR027<br>SD-DR027-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 59 U | 58 U | 19 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 59 U | 58 U | 19 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 59 U | 58 U | 19 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 59 U | 58 U | 19 U | 40 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 10 | **12** | 4.8 | **12** |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 89 | 91 U | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 110 | 170 | 45 | 170 |
| Aroclor-1260 | -- | -- | -- | -- | 94 | 68 | 25 | 130 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 290 | 240 | 70 | 300 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | 2000 J |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | 4000 J |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | 4000 J |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | 6000 J |
| PCB-066 | -- | -- | -- | -- | -- | 8700 | -- | 14000 J |
| PCB-077 | -- | -- | -- | -- | -- | 573 | -- | 1000 UJ |
| PCB-081 | -- | -- | -- | -- | -- | 72.3 J | -- | 1000 UJ |
| PCB-090 | -- | -- | -- | -- | -- | 44000 C | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | C90 | -- | 8000 J |
| PCB-105 | -- | -- | -- | -- | -- | 13200 | -- | 4000 J |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS45<br>LDW-SS45-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS46<br>LDW-SS46-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS47<br>LDW-SS47-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | DR027<br>SD-DR027-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| PCB-110 | -- | -- | -- | -- | -- | 46700 C | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | 823 | -- | 1000 UJ |
| PCB-118 | -- | -- | -- | -- | -- | 34500 | -- | 9000 J |
| PCB-123 | -- | -- | -- | -- | -- | 860 | -- | 2000 UJ |
| PCB-126 | -- | -- | -- | -- | -- | 68.1 J | -- | 1000 UJ |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | 3000 J |
| PCB-129 | -- | -- | -- | -- | -- | 43400 C | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | C129 | -- | 18000 J |
| PCB-153 | -- | -- | -- | -- | -- | 29500 C | -- | 13000 J |
| PCB-156 | -- | -- | -- | -- | -- | 5350 C | -- | 3000 UJ |
| PCB-157 | -- | -- | -- | -- | -- | C156 | -- | 1000 UJ |
| PCB-167 | -- | -- | -- | -- | -- | 1620 | -- | 2000 UJ |
| PCB-169 | -- | -- | -- | -- | -- | 17.5 U | -- | 1000 U |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | 6000 J |
| PCB-180 | -- | -- | -- | -- | -- | 12000 C | -- | 9000 J |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | 6000 UJ |
| PCB-189 | -- | -- | -- | -- | -- | 248 | -- | 1000 UJ |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | 1000 J |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | 1000 J |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | 1000 U |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | 45 J | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | 14.9 J | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting

## Table B-2

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS45<br>LDW-SS45-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS46<br>LDW-SS46-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | LDW-SS47<br>LDW-SS47-010<br>3/10/2005<br>0-10 cm<br>West Nav. Channel - AML | DR027<br>SD-DR027-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|

| | |
|---|---|
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR054<br>SD-DR054-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - AML | DR064<br>SD-DR064-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML | DR090<br>SD-DR090-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - AML | SS-1<br>SS-1<br>8/17/1993<br>0-8 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 5.7 J | 0.01 U | 1.3 J | |
| Sand (total calc'd) | -- | -- | -- | -- | 19.1 J | 15.9 | 11.3 J | 29 |
| Silt (total calc'd) | -- | -- | -- | -- | 45 | 57 | 56 | 55 |
| Clay (total calc'd) | -- | -- | -- | -- | 26 | 27 | 31 | 16 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 71 | 84 | 87 | |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.36 | 2.58 | 2.13 | 1.9 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | 47.3 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | 25000 | 20000 | 21000 | -- |
| Antimony | -- | -- | -- | -- | 10 UJ | 10 UJ | 10 UJ | 3.1 J |
| Arsenic | 57 | 93 | -- | -- | 24 | 14 | 9 | 41 |
| Barium | -- | -- | -- | -- | 110 | 83 | 82 | -- |
| Beryllium | -- | -- | -- | -- | 0.49 | 0.52 | 0.46 | 0.4 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.37 | 0.45 | 0.25 | 0.7 |
| Calcium | -- | -- | -- | -- | 8400 | 6300 | 5700 | -- |
| Chromium | 260 | 270 | -- | -- | 34 | 30 | 27 | 44 |
| Cobalt | -- | -- | -- | -- | 12 | 10 | 12 | -- |
| Copper | 390 | 390 | -- | -- | 140 | 72 | 53 | 361 J |
| Iron | -- | -- | -- | -- | 35000 J | 30000 | 28000 J | -- |
| Lead | 450 | 530 | -- | -- | 49 | 40 | 21 | 109 J |
| Magnesium | -- | -- | -- | -- | 9400 | 8200 | 8000 | -- |
| Manganese | -- | -- | -- | -- | 440 | 340 | 370 | -- |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR054<br>SD-DR054-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - AML | DR064<br>SD-DR064-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML | DR090<br>SD-DR090-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - AML | SS-1<br>SS-1<br>8/17/1993<br>0-8 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.17 | 0.23 | 0.15 | 0.27 |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | 28 | 23 | 23 | 31 |
| Potassium | -- | -- | -- | -- | 3200 | 3000 | 2600 | -- |
| Selenium | -- | -- | -- | -- | 0.5 J | 10 | 0.6 J | 0.2 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.28 | 0.42 | 0.2 | 0.6 U |
| Sodium | -- | -- | -- | -- | 12000 | 13000 | 9800 | -- |
| Thallium | -- | -- | -- | -- | 0.13 | 0.12 | 0.11 | 1 U |
| Tin | -- | -- | -- | -- | 10 | 5 | 2 | -- |
| Vanadium | -- | -- | -- | -- | 70 | 57 | 57 | -- |
| Zinc | 410 | 960 | -- | -- | 170 | 130 | 93 | 335 J |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR054<br>SD-DR054-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - AML | DR064<br>SD-DR064-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML | DR090<br>SD-DR090-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - AML | SS-1<br>SS-1<br>8/17/1993<br>0-8 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 40 J | -- | 10 J | 6 UJ |
| Dibutyltin as ion | -- | -- | -- | -- | 21 J | -- | 14 | 58.3 J |
| Tributyltin as ion | -- | -- | -- | -- | 190 | -- | 54 | 226 J |
| Tetrabutyltin as ion | -- | -- | -- | -- | 6 | -- | 5 U | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.85 U | 0.78 U | 0.94 U | 4.2 |
| Acenaphthylene | 66 | 66 | -- | -- | 0.85 U | 0.78 U | 0.94 U | 2.6 J |
| Acenaphthene | 16 | 57 | -- | -- | 0.85 | 1.2 | 0.94 U | 14 |
| Anthracene | 220 | 1200 | -- | -- | 4.7 | 4.7 | 3.3 | 11 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 14 | 12 | 8.9 | 58 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 12 | 12 | 8.5 | 41 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 8.1 | 7.8 | 5.2 | 24 |
| Chrysene | 110 | 460 | -- | -- | 21 | 18 | 13 | 84 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.1 | 1.9 | 1.4 | 8.9 |
| Fluoranthene | 160 | 1200 | -- | -- | 38 | 35 | 21 | 2.1 J |
| Fluorene | 23 | 79 | -- | -- | 1.7 | 2.3 | 1.4 | 22 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 8.9 | 8.1 | 5.2 | 32 |
| Naphthalene | 99 | 170 | -- | -- | 0.85 U | 0.78 U | 0.94 U | 3.6 J |
| Phenanthrene | 100 | 480 | -- | -- | 10 | 15 | 7 | **100** |
| Pyrene | 1000 | 1400 | -- | -- | 29 | 27 | 17 | 110 |
| Benzofluoranthenes (total-calc'd | 230 | 450 | -- | -- | 28 | 25 | 18 | 110 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 17 | 23 | 12 | 130 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 160 | 150 | 98 | 470 J |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 U | 20 U | 20 U | 79 |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR054<br>SD-DR054-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - AML | DR064<br>SD-DR064-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML | DR090<br>SD-DR090-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - AML | SS-1<br>SS-1<br>8/17/1993<br>0-8 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | 20 U | 20 U | 49 J |
| Acenaphthene | -- | -- | 500 | 730 | 20 | 30 | 20 U | 270 |
| Anthracene | -- | -- | 960 | 4400 | 110 | 120 | 70 | 200 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 330 | 320 | 190 | 1100 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 290 | 300 | 180 | 780 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 360 | 390 | 200 | 1000 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 300 | 260 | 190 | 1100 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 190 | 200 | 110 | 450 |
| Chrysene | -- | -- | 1400 | 2800 | 490 | 470 | 280 | 1600 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 50 | 50 | 30 | 170 |
| Fluoranthene | -- | -- | 1700 | 2500 | 890 | 910 | 440 | 40 J |
| Fluorene | -- | -- | 540 | 1000 | 40 | 60 | 30 | 420 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 210 | 210 | 110 | 610 |
| Naphthalene | -- | -- | 2100 | 2400 | 20 U | 20 U | 20 U | 69 J |
| Phenanthrene | -- | -- | 1500 | 5400 | 240 | 380 | 150 | 1900 |
| Pyrene | -- | -- | 2600 | 3300 | 690 | 690 | 360 | 2100 |
| Benzofluoranthenes (total-calc'd | -- | -- | 3200 | 3600 | 660 | 650 | 390 | 2100 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 410 | 590 | 250 | 2490 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3800 | 3800 | 2090 | 8950 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 4210 | 4390 | 2340 | 11440 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.85 U | 0.78 U | 0.94 U | ***4.1 U*** |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.85 U | 0.78 U | 0.94 U | **4.1 U** |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | **0.85 U** | 0.78 U | **0.94 U** | ***4.1 U*** |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.85 U** | **0.78 U** | **0.94 U** | ***4.1 U*** |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | 20 U | 20 U | 77 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR054<br>SD-DR054-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - AML | DR064<br>SD-DR064-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML | DR090<br>SD-DR090-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - AML | SS-1<br>SS-1<br>8/17/1993<br>0-8 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | 77 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | 20 U | 20 U | 77 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 20 U | 20 U | 20 U | 77 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 20 U | 20 U | 20 U | 77 U |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | 77 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 19 | 18 | 15 | **53** |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.7 | 0.78 U | 1.4 | **5.1** |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.85 U | 0.78 U | 0.94 U | 4.1 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.85 U | 0.78 U | 0.94 U | 2.5 J |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.85 U | 1.2 | 0.94 U | 44 |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.85 U | 0.78 U | 0.94 U | 4.1 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 450 | 470 | 320 | 1000 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 40 | 20 U | 30 | 96 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 20 U | 20 U | 77 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 U | 20 U | 20 U | 48 J |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 U | 30 | 20 U | 830 |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 20 U | 20 U | 77 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR054<br>SD-DR054-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - AML | DR064<br>SD-DR064-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML | DR090<br>SD-DR090-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - AML | SS-1<br>SS-1<br>8/17/1993<br>0-8 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 20 U | 20 U | 77 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 40 U | 40 U | 40 U | 150 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 60 U | 60 U | 60 U | 230 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 U | 20 U | 20 U | ***77 U*** |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | 770 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 U | 20 U | 20 U | ***77 U*** |
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | 20 U | 20 U | 77 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | 380 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | 380 U |
| 2-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U | 380 U |
| 4-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U | 380 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 100 U | 100 U | 100 U | **380 U** |
| Phenol | 420 | 1200 | -- | -- | 70 | 80 | 20 U | 72 J |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 0.85 | 1.6 | 0.94 U | 13 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.85 U | 0.78 U | 0.94 U | **4.1 U** |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.7 U | 1.6 U | 1.9 U | 4.1 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U | 380 U |
| 3-Nitroaniline | -- | -- | -- | -- | 200 U | 200 U | 200 U | 380 U |
| 4-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U | 380 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 200 U | 200 U | 200 U | 380 U |
| 4-Chloroaniline | -- | -- | -- | -- | 60 U | 60 U | 60 U | 230 U |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 50 U | 50 U | ***77 U*** |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | 200 U | 200 U | ***770 U*** |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR054<br>SD-DR054-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - AML | DR064<br>SD-DR064-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML | DR090<br>SD-DR090-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - AML | SS-1<br>SS-1<br>8/17/1993<br>0-8 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| Carbazole | -- | -- | -- | -- | 30 | 40 | 30 | 77 U |
| Dibenzofuran | -- | -- | 540 | 700 | 20 | 40 | 20 U | 250 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 20 U | 20 U | 20 U | 77 U |
| Hexachloroethane | -- | -- | -- | -- | 20 U | 20 U | 20 U | 77 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 100 U | 100 UJ | 100 U | 380 U |
| Isophorone | -- | -- | -- | -- | 20 U | 20 U | 20 U | 77 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 40 U | 40 U | 40 U | 77 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 40 U | 40 U | 40 U | 77 U |

**Table B-2**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR054<br>SD-DR054-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - AML | DR064<br>SD-DR064-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML | DR090<br>SD-DR090-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - AML | SS-1<br>SS-1<br>8/17/1993<br>0-8 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 77 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | 20 U | 20 U | 77 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 77 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 77 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 4.1 | 8.9 | 3.1 | -- |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 UJ | 20 U | 20 UJ | -- |
| Aroclor-1221 | -- | -- | -- | -- | 40 U | 40 U | 40 U | -- |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U | 20 U | -- |
| Aroclor-1254 | -- | -- | -- | -- | 50 | 130 | 39 | -- |
| Aroclor-1260 | -- | -- | -- | -- | 47 | 96 | 27 | -- |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 97 | 230 | 66 | -- |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | 1000 UJ | 1000 J | 1000 UJ | -- |
| PCB-028 | -- | -- | -- | -- | 2000 J | 3000 J | 1000 J | -- |
| PCB-044 | -- | -- | -- | -- | 1000 J | 3000 J | 1000 J | -- |
| PCB-055 | -- | -- | -- | -- | 2000 J | 4000 J | 2000 J | -- |
| PCB-066 | -- | -- | -- | -- | 6000 U | 11000 J | 4000 U | -- |
| PCB-077 | -- | -- | -- | -- | 1000 U | 1000 UJ | 1000 U | -- |
| PCB-081 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 3000 J | 6000 J | 2000 J | -- |
| PCB-105 | -- | -- | -- | -- | 2000 J | 3000 J | 1000 UJ | -- |

## Table B-2
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR054<br>SD-DR054-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - AML | DR064<br>SD-DR064-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML | DR090<br>SD-DR090-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - AML | SS-1<br>SS-1<br>8/17/1993<br>0-8 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | -- |
| PCB-118 | -- | -- | -- | -- | 3000 | 8000 J | 2000 | -- |
| PCB-123 | -- | -- | -- | -- | 1000 UJ | 2000 UJ | 1000 UJ | -- |
| PCB-126 | -- | -- | -- | -- | 1000 U | 1000 UJ | 1000 U | -- |
| PCB-128 | -- | -- | -- | -- | 1000 J | 2000 J | 1000 UJ | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 8000 J | 14000 J | 5000 UJ | -- |
| PCB-153 | -- | -- | -- | -- | 6000 J | 11000 J | 3000 J | -- |
| PCB-156 | -- | -- | -- | -- | 1000 UJ | 1000 J | 1000 UJ | -- |
| PCB-157 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | -- |
| PCB-167 | -- | -- | -- | -- | 1000 UJ | 1000 J | 1000 UJ | -- |
| PCB-169 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 U | -- |
| PCB-170 | -- | -- | -- | -- | 3000 J | 4000 J | 1000 UJ | -- |
| PCB-180 | -- | -- | -- | -- | 4000 J | 7000 J | 2000 J | -- |
| PCB-187 | -- | -- | -- | -- | 3000 J | 5000 J | 1000 J | -- |
| PCB-189 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | -- |
| PCB-195 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | -- |
| PCB-206 | -- | -- | -- | -- | 1000 U | 1000 UJ | 1000 U | -- |
| PCB-209 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 U | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting

## Table B-2

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR054<br>SD-DR054-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - AML | DR064<br>SD-DR064-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - AML | DR090<br>SD-DR090-0000<br>8/12/1998<br>0-10 cm<br>Nav. Channel - AML | SS-1<br>SS-1<br>8/17/1993<br>0-8 cm<br>West Nav. Channel - AML |
|---|---|---|---|---|---|---|---|---|

| | |
|---|---|
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | 1.37 | 0.8 |
| Sand (total calc'd) | -- | -- | -- | -- | 11 | 34.4 | 13.5 |
| Silt (total calc'd) | -- | -- | -- | -- | 59 | 51.3 | 61.9 |
| Clay (total calc'd) | -- | -- | -- | -- | 30 | 12.68 | 23.7 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | 63.9 | 85.6 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.97 | 2.79 | 1.4 |
| Total solids | -- | -- | -- | -- | -- | 45.9 | 47.7 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | 1.04 J | 10 UJ |
| Arsenic | 57 | 93 | -- | -- | -- | 10.3 J | 40 |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | 0.58 | 0.5 |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | -- | 37.7 | 37 |
| Cobalt | -- | -- | -- | -- | -- | 12 | 11.2 |
| Copper | 390 | 390 | -- | -- | -- | 86.6 | 146 |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | -- | 79.4 | 58 J |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | -- | 0.291 | 0.28 J |
| Molybdenum | -- | -- | -- | -- | -- | 1.01 J | 3 |
| Nickel | -- | -- | -- | -- | -- | 24.8 | 27 |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | 0.8 J | 10 U |
| Silver | 6.1 | 6.1 | -- | -- | -- | 0.497 J | 0.6 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | 0.151 | 10 U |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | 72.5 | 78.9 |
| Zinc | 410 | 960 | -- | -- | -- | 155 | 198 |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | 48 | 3.9 U |
| Dibutyltin as ion | -- | -- | -- | -- | -- | 44 | 16 |
| Tributyltin as ion | -- | -- | -- | -- | -- | 96 | 130 |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | 2 J | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | 0.5 | 7.1 U |
| Acenaphthylene | 66 | 66 | -- | -- | -- | 1 | 7.1 U |
| Acenaphthene | 16 | 57 | -- | -- | -- | 0.47 | 7.1 U |
| Anthracene | 220 | 1200 | -- | -- | -- | 2.9 | 5.6 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | 7.5 | 19 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | 7.2 | 24 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | 5 | 5.8 J |
| Chrysene | 110 | 460 | -- | -- | -- | 15 | 28 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | 0.93 | 7.1 U |
| Fluoranthene | 160 | 1200 | -- | -- | -- | 22 | 36 |
| Fluorene | 23 | 79 | -- | -- | -- | 0.68 | 7.1 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | 5 | 7.9 |
| Naphthalene | 99 | 170 | -- | -- | -- | 0.82 | 7.1 U |
| Phenanthrene | 100 | 480 | -- | -- | -- | 5.7 | 14 |
| Pyrene | 1000 | 1400 | -- | -- | -- | 18 | 33 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | 18 | 64 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | 12 | 19 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | 100 | 220 J |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | 11 | 99 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | 14 | 99 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | 28 | 99 U |
| Acenaphthene | -- | -- | 500 | 730 | -- | 13 | 99 U |
| Anthracene | -- | -- | 960 | 4400 | -- | 82 | 79 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | 210 | 260 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | 200 | 340 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | 220 | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | 310 | 470 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | 200 | 430 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | 140 | 81 J |
| Chrysene | -- | -- | 1400 | 2800 | -- | 430 | 390 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | 26 | 99 U |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | 620 | 500 |
| Fluorene | -- | -- | 540 | 1000 | -- | 19 | 99 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | 140 | 110 |
| Naphthalene | -- | -- | 2100 | 2400 | -- | 23 | 99 U |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | 160 | 190 |
| Pyrene | -- | -- | 2600 | 3300 | -- | 500 | 460 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | 510 | 900 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | 330 | 270 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | 2780 | 3040 J |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | 3100 | 3310 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | 0.39 UJ | 0.42 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | 0.39 UJ | 0.26 J |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | 0.39 UJ | 0.42 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | 0.036 U | **0.42 U** |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | 11 UJ | 5.9 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | 11 UJ | 99 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | 11 UJ | 3.6 J |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | 11 UJ | 5.9 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | 1 U | 5.9 U |
| Nitrobenzene | -- | -- | -- | -- | -- | 11 UJ | 99 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | 5 J | 24 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | 0.39 UJ | 3.4 |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | 0.39 UJ | 7.1 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | 0.39 UJ | 7.1 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | 0.33 J | 7.1 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | 0.39 UJ | 7.1 U |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | 140 J | 330 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | 11 UJ | 48 |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | 11 UJ | 99 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | 11 UJ | 99 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | 9.3 J | 99 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | 11 UJ | 99 U |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | 11 U | 99 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | 11 U | 500 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | 11 U | 500 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | ***55 UJ*** | 5.9 UJ |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | 220 U | 990 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | 11 U | 5.9 UJ |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | -- | 21 | 99 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | 11 U | 500 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | 11 U | 500 U |
| 2-Nitrophenol | -- | -- | -- | -- | -- | 11 U | 500 U |
| 4-Nitrophenol | -- | -- | -- | -- | -- | 110 U | 500 U |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | 55 U | 20 J |
| Phenol | 420 | 1200 | -- | -- | -- | 33 U | 99 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | 0.47 | 7.1 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | 0.39 UJ | 0.42 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | 0.39 UJ | 2.1 U |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | 22 UJ | 500 U |
| 3-Nitroaniline | -- | -- | -- | -- | -- | 22 UJ | 500 UJ |
| 4-Nitroaniline | -- | -- | -- | -- | -- | 22 UJ | 500 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | 110 UJ | 500 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | -- | 11 UJ | 500 UJ |
| Aniline | -- | -- | -- | -- | -- | 22 UJ | 99 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | **70 J** | 30 U |
| Benzoic acid | 650 | 650 | -- | -- | -- | 250 | 160 |
| Carbazole | -- | -- | -- | -- | -- | 180 J | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | 13 | 99 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | 11 UJ | 5.9 U |
| Hexachloroethane | -- | -- | -- | -- | -- | 11 UJ | 99 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | 55 UJ | 500 U |
| Isophorone | -- | -- | -- | -- | -- | 11 UJ | 99 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | 11 UJ | 30 UJ |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | 55 UJ | 30 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | 11 UJ | 30 U |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | 11 UJ | 99 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | 11 UJ | 99 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | 11 UJ | 99 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | 11 UJ | 99 U |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | 19 U | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | 1 U | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | 5.2 U | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | 1.1 | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | 1.8 | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | 3.4 J | -- |
| Aldrin | -- | -- | -- | -- | -- | 1 U | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | 1 U | -- |
| alpha-BHC | -- | -- | -- | -- | -- | 1 U | -- |
| beta-BHC | -- | -- | -- | -- | -- | 1 U | -- |
| delta-BHC | -- | -- | -- | -- | -- | 1 U | -- |
| gamma-BHC | -- | -- | -- | -- | -- | 1 U | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | 2.7 U | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | 3.7 U | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | 1 U | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | 1 U | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | 1 U | -- |
| Endrin | -- | -- | -- | -- | -- | 14 U | -- |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | 12 UJ | -- |
| Endrin ketone | -- | -- | -- | -- | -- | 5 U | -- |
| Heptachlor | -- | -- | -- | -- | -- | 2.4 U | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | 1.2 U | -- |
| Toxaphene | -- | -- | -- | -- | -- | 270 U | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | 3.7 U | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | 6.3 J | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | 2.7 U | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | 1.1 U | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 6.1 | **14** | **20** |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | -- | 10 U | 7.9 U |
| Aroclor-1221 | -- | -- | -- | -- | -- | 20 U | 7.9 U |
| Aroclor-1232 | -- | -- | -- | -- | -- | 10 U | 7.9 U |
| Aroclor-1242 | -- | -- | -- | -- | -- | 100 | 7.9 U |
| Aroclor-1248 | -- | -- | -- | -- | -- | 84 U | 60 |
| Aroclor-1254 | -- | -- | -- | -- | -- | 150 | 110 |
| Aroclor-1260 | -- | -- | -- | -- | -- | 150 | 110 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 120 | 400 | 280 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | 6510 | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | 310 U | 586 | -- |
| PCB-081 | -- | -- | -- | -- | -- | 26.8 J | -- |
| PCB-090 | -- | -- | -- | -- | -- | 13000 C | -- |
| PCB-101 | -- | -- | -- | -- | 34000 J | C90 | -- |
| PCB-105 | -- | -- | -- | -- | 3100 | 4740 | -- |
| PCB-110 | -- | -- | -- | -- | 8900 | 14800 C | -- |
| PCB-114 | -- | -- | -- | -- | -- | 226 | -- |
| PCB-118 | -- | -- | -- | -- | 8200 | 12100 | -- |
| PCB-123 | -- | -- | -- | -- | -- | 174 | -- |
| PCB-126 | -- | -- | -- | -- | 280 U | 23.6 | -- |
| PCB-128 | -- | -- | -- | -- | 4000 J | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | 18100 C | -- |
| PCB-138 | -- | -- | -- | -- | 7400 | C129 | -- |
| PCB-153 | -- | -- | -- | -- | 23000 J | 15000 C | -- |
| PCB-156 | -- | -- | -- | -- | 1100 | 1780 C | -- |
| PCB-157 | -- | -- | -- | -- | 660 | C156 | -- |
| PCB-167 | -- | -- | -- | -- | -- | 609 | -- |
| PCB-169 | -- | -- | -- | -- | 680 U | 10.9 U | -- |
| PCB-170 | -- | -- | -- | -- | 4200 | -- | -- |
| PCB-180 | -- | -- | -- | -- | 6200 | 9130 C | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 310 U | 166 | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | 35.2 J | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | 5.2 J | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | 486 |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | 106 |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | 9.01 |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | 2.83 |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | 11.7 |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | 16.9 |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | 3.56 |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | 10.5 |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | 0.226 J |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | 1.9 |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | 1.51 |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | 2.62 |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | 3.46 |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | 0.485 |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | 1.6 |
| OCDD | -- | -- | -- | -- | -- | -- | 4540 |
| OCDF | -- | -- | -- | -- | -- | -- | 347 |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | 12.9 J |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | 10.7 J |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | 9.89 J |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | 15.7 J |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | 15.9 J |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST206<br>EST19-04<br>9/16/1997<br>0-10 cm<br>East Nav. Channel - DSI | B4b<br>LDW-B4b-S<br>8/28/2004<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-0-1<br>2/22/2006<br>0-1 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.6 | 0.1 | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 9.4 | 14.5 | -- |
| Silt (total calc'd) | -- | -- | -- | -- | 64.2 | 60.6 | -- |
| Clay (total calc'd) | -- | -- | -- | -- | 25.9 | 24.8 | -- |
| Fines (percent silt+clay) | -- | -- | -- | -- | 90.1 | 85.4 | -- |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.04 | 2.08 | 1.88 |
| Total solids | -- | -- | -- | -- | 53.1 | 54.3 | 62.25 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 9 UJ | 10 J | 280 J |
| Arsenic | 57 | 93 | -- | -- | 36 | ***67*** | ***1890*** |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.5 | 0.6 | 4 |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 61.7 | 38.7 | 160 |
| Cobalt | -- | -- | -- | -- | 11.9 | 15.8 | 106 |
| Copper | 390 | 390 | -- | -- | 173 | ***544*** | ***1950*** |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 57 J | 91 J | ***1350*** |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.28 J | ***0.69 J*** | ***4.34*** |
| Molybdenum | -- | -- | -- | -- | 3.1 | 5.9 | 166 |
| Nickel | -- | -- | -- | -- | 32 | 26 | 60 |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 9 U | 9 U | 40 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.5 U | 0.8 | 3 |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 9 U | 9 U | 40 U |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 78.5 | 80.1 | 67 |
| Zinc | 410 | 960 | -- | -- | 191 | 319 | ***3700*** |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 4.5 | 6 | 9.1 |
| Dibutyltin as ion | -- | -- | -- | -- | 24 | 87 | 520 |
| Tributyltin as ion | -- | -- | -- | -- | 130 | 590 | 6200 |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 2.9 U | 4.8 U | 5.9 |
| Acenaphthylene | 66 | 66 | -- | -- | 2.9 U | 4.8 U | 3.4 J |
| Acenaphthene | 16 | 57 | -- | -- | 2.9 U | 4.8 U | **48** |
| Anthracene | 220 | 1200 | -- | -- | 2.5 J | 3.6 J | 69 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 8.3 | 15 | **200** |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 13 | 19 | **150** |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 4 | 5.8 | **53** |
| Chrysene | 110 | 460 | -- | -- | 14 | 20 | **210** |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.9 U | 4.8 U | **21 J** |
| Fluoranthene | 160 | 1200 | -- | -- | 18 | 36 | **530** |
| Fluorene | 23 | 79 | -- | -- | 2.9 U | 4.8 U | 22 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 5.4 | 7.7 | **53** |
| Naphthalene | 99 | 170 | -- | -- | 2.9 U | 4.8 U | 12 |
| Phenanthrene | 100 | 480 | -- | -- | 5.4 | 12 | **300** |
| Pyrene | 1000 | 1400 | -- | -- | 20 | 42 | 520 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 32 | 45 | **280** |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 7.8 J | 15 J | **450 J** |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 110 | 190 | **2000 J** |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 60 U | 100 U | 84 |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 60 U | 100 U | 110 |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 60 U | 100 U | 63 J |
| Acenaphthene | -- | -- | 500 | 730 | 60 U | 100 U | 900 |
| Anthracene | -- | -- | 960 | 4400 | 51 J | 74 J | 1300 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 170 | 310 | 3700 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 260 | 400 | 2800 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 340 | 480 | 3500 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 320 | 460 | 1700 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 82 | 120 | 1000 |
| Chrysene | -- | -- | 1400 | 2800 | 280 | 420 | 3900 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 60 U | 100 U | 400 J |
| Fluoranthene | -- | -- | 1700 | 2500 | 370 | 750 | 10000 |
| Fluorene | -- | -- | 540 | 1000 | 60 U | 100 U | 420 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 110 | 160 | 1000 |
| Naphthalene | -- | -- | 2100 | 2400 | 60 U | 100 U | 220 |
| Phenanthrene | -- | -- | 1500 | 5400 | 110 | 240 | 5600 |
| Pyrene | -- | -- | 2600 | 3300 | 400 | 880 | 9700 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 660 | 940 | 5200 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 160 J | 310 J | 8500 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2330 | 3980 | 38000 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 2490 J | 4290 J | 46000 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.29 U | 0.43 | ***3.9*** |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.29 U | 0.23 J | 0.59 |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.29 U | 0.29 U | 0.52 |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.29 U | 0.29 U | 0.35 U |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6 U | 9 | 73 |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 60 U | 100 U | 6.5 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6 U | 4.8 J | 11 |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6 U | 6 U | 9.8 |
| Hexachlorobenzene | -- | -- | 22 | 70 | 6 U | 6 U | 6.5 U |
| Nitrobenzene | -- | -- | -- | -- | 60 U | 100 U | 65 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 16 | 28 | ***200*** |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.8 | 2 | 1.6 J |
| Diethyl phthalate | 61 | 110 | -- | -- | 2.9 U | 4.8 U | 3.5 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 2.9 U | 4.8 U | 1.1 |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.9 U | 4.8 U | 3.5 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.9 U | 4.8 U | 3 J |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 320 | 590 | 3800 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 36 | 41 | 30 J |
| Diethyl phthalate | -- | -- | 200 | 1200 | 60 U | 100 U | 65 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 60 U | 100 U | 20 |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 60 U | 100 U | 65 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 60 U | 100 U | 57 J |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 60 U | 100 U | 65 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 300 U | 500 U | 330 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 300 U | 500 U | 330 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6 UJ | 6 UJ | 24 J |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 600 UJ | 1000 UJ | 650 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6 UJ | 6 UJ | 12 |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 60 U | 100 U | 48 J |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 300 U | 500 U | 330 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 300 U | 500 U | 330 U |
| 2-Nitrophenol | -- | -- | -- | -- | 300 U | 500 U | 330 U |
| 4-Nitrophenol | -- | -- | -- | -- | 300 U | 500 U | 330 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 30 U | 24 J | ***800*** |
| Phenol | 420 | 1200 | -- | -- | 60 U | 100 U | 65 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 2.9 U | 4.8 U | **19** |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.29 U | 0.29 U | 0.35 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.2 U | 1.8 U | ***34 U*** |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 300 U | 500 U | 330 U |
| 3-Nitroaniline | -- | -- | -- | -- | 300 UJ | 500 UJ | 330 U |
| 4-Nitroaniline | -- | -- | -- | -- | 300 U | 500 U | 330 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 300 UJ | 500 UJ | 330 U |
| 4-Chloroaniline | -- | -- | -- | -- | 300 UJ | 500 UJ | 330 U |
| Aniline | -- | -- | -- | -- | 60 UJ | 100 UJ | 65 U |
| Benzyl alcohol | 57 | 73 | -- | -- | 30 U | 30 U | 33 U |
| Benzoic acid | 650 | 650 | -- | -- | 100 | 80 | 590 U |
| Carbazole | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 60 U | 100 U | 360 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6 U | 6 U | 6.5 U |
| Hexachloroethane | -- | -- | -- | -- | 60 U | 100 U | 65 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 300 U | 500 U | 330 U |
| Isophorone | -- | -- | -- | -- | 60 U | 100 U | 65 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 30 UJ | 30 UJ | 33 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 30 U | 30 U | 33 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 24 U | 38 U | 640 U |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 60 U | 100 U | 65 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 60 U | 100 U | 65 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 60 U | 100 U | 65 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 60 U | 100 U | 65 U |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 11 | **15** | ***120*** |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 7.9 U | 8 U | 170 U |
| Aroclor-1221 | -- | -- | -- | -- | 7.9 U | 8 U | 170 U |
| Aroclor-1232 | -- | -- | -- | -- | 7.9 U | 8 U | 170 U |
| Aroclor-1242 | -- | -- | -- | -- | 7.9 U | 8 U | 370 |
| Aroclor-1248 | -- | -- | -- | -- | 48 | 60 | 170 U |
| Aroclor-1254 | -- | -- | -- | -- | 81 | 140 | 1300 |
| Aroclor-1260 | -- | -- | -- | -- | 97 | 110 | 610 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 226 | 310 | 2300 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | 393 | 732 | 5930 |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | 63.6 | 118 | 873 |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | 5.67 | 11 | 63.4 |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | 2.87 | 3.9 | 11.2 |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | 9.12 | 15.9 | 40.6 |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | 14.1 | 24.4 | 184 |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | 2.99 | 4.5 | 12.7 |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | 9.44 | 13.5 | 52.3 |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | 0.283 J | 0.361 J | 0.983 J |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | 1.77 | 2.69 | 10.5 |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | 1.32 | 1.73 | 3.24 |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | 2.23 | 3.51 | 9.77 |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | 2.67 | 3.94 | 5.92 |
| 2,3,7,8-TCDD | -- | -- | -- | -- | 0.524 | 0.829 | 3.36 |
| 2,3,7,8-TCDF | -- | -- | -- | -- | 1.16 | 1.66 | 3.32 |
| OCDD | -- | -- | -- | -- | 3450 | 7140 | 62000 |
| OCDF | -- | -- | -- | -- | 176 | 393 | 4420 |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | 10.4 J | 16.3 J | 59.4 J |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | 8.8 J | 14.4 J | 57.2 J |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | 8.33 J | 13.2 J | 53.5 J |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | 12.9 J | 21.7 J | 124 J |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | 13.1 J | 22.4 J | 136 J |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>LDW-SC26-1-2<br>2/22/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-2-4<br>2/22/2006<br>2-4 FT<br>West Nav. Channel - DSI | LDW-SC26<br>LDW-SC26-6-8<br>2/22/2006<br>6-8 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. | | | | | | |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. | | | | | | |
| UJ | The analyte was not detected at the estimated detection limit. | | | | | | |
| C | The metal analyte is estimated below the reporting limit. | | | | | | |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. | | | | | | |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. | | | | | | |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. | | | | | | |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>DW-SC26-11.1-12.<br>2/22/2006<br>11.1-12.1 FT<br>West Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0-0.5<br>2/14/2006<br>0-0.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0.5-1<br>2/14/2006<br>0.5-1 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Silt (total calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Clay (total calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 0.912 | 1.54 | 1.8 |
| Total solids | -- | -- | -- | -- | 77 | 55.8 | 54.2 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 6 UJ | -- | -- |
| Arsenic | 57 | 93 | -- | -- | 6 U | -- | -- |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.3 U | -- | -- |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 14 | -- | -- |
| Cobalt | -- | -- | -- | -- | 4.8 | -- | -- |
| Copper | 390 | 390 | -- | -- | 23 | -- | -- |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 9 | -- | -- |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>DW-SC26-11.1-12.<br>2/22/2006<br>11.1-12.1 FT<br>West Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0-0.5<br>2/14/2006<br>0-0.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0.5-1<br>2/14/2006<br>0.5-1 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | 1.2 | -- | -- |
| Nickel | -- | -- | -- | -- | 12 | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 6 U | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | 0.4 U | -- | -- |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 6 U | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 47.7 | -- | -- |
| Zinc | 410 | 960 | -- | -- | 43.1 | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>DW-SC26-11.1-12.<br>2/22/2006<br>11.1-12.1 FT<br>West Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0-0.5<br>2/14/2006<br>0-0.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0.5-1<br>2/14/2006<br>0.5-1 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | -- | -- |
| Acenaphthylene | 66 | 66 | -- | -- | -- | -- | -- |
| Acenaphthene | 16 | 57 | -- | -- | -- | -- | -- |
| Anthracene | 220 | 1200 | -- | -- | -- | -- | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | -- | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | -- | -- |
| Chrysene | 110 | 460 | -- | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | -- | -- |
| Fluoranthene | 160 | 1200 | -- | -- | -- | -- | -- |
| Fluorene | 23 | 79 | -- | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | -- | -- |
| Naphthalene | 99 | 170 | -- | -- | -- | -- | -- |
| Phenanthrene | 100 | 480 | -- | -- | -- | -- | -- |
| Pyrene | 1000 | 1400 | -- | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | -- | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | -- | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | -- | -- |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>DW-SC26-11.1-12.<br>2/22/2006<br>11.1-12.1 FT<br>West Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0-0.5<br>2/14/2006<br>0-0.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0.5-1<br>2/14/2006<br>0.5-1 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | -- | -- |
| Acenaphthene | -- | -- | 500 | 730 | -- | -- | -- |
| Anthracene | -- | -- | 960 | 4400 | -- | -- | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | -- | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | -- | -- |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | -- | -- |
| Chrysene | -- | -- | 1400 | 2800 | -- | -- | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | -- | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | -- | -- |
| Fluorene | -- | -- | 540 | 1000 | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | -- | -- |
| Naphthalene | -- | -- | 2100 | 2400 | -- | -- | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | -- | -- |
| Pyrene | -- | -- | 2600 | 3300 | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | -- | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | -- | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | -- | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | -- | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | -- | -- |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>DW-SC26-11.1-12.<br>2/22/2006<br>11.1-12.1 FT<br>West Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0-0.5<br>2/14/2006<br>0-0.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0.5-1<br>2/14/2006<br>0.5-1 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | -- | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | -- | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | -- | -- |
| Nitrobenzene | -- | -- | -- | -- | -- | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | -- | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | -- | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | -- | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | -- | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | -- | -- |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | -- | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | -- | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | -- | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | -- | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | -- | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | -- | -- |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>DW-SC26-11.1-12.<br>2/22/2006<br>11.1-12.1 FT<br>West Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0-0.5<br>2/14/2006<br>0-0.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0.5-1<br>2/14/2006<br>0.5-1 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | -- |
| Phenol | 420 | 1200 | -- | -- | -- | -- | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | -- | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | -- |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | -- |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | -- |
| Carbazole | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | -- | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | -- | -- |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- | -- |
| Isophorone | -- | -- | -- | -- | -- | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>DW-SC26-11.1-12.<br>2/22/2006<br>11.1-12.1 FT<br>West Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0-0.5<br>2/14/2006<br>0-0.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0.5-1<br>2/14/2006<br>0.5-1 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | -- | -- |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- | -- |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>DW-SC26-11.1-12.<br>2/22/2006<br>11.1-12.1 FT<br>West Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0-0.5<br>2/14/2006<br>0-0.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0.5-1<br>2/14/2006<br>0.5-1 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **15** | **16** | ***110*** |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 4 U | 39 U | 390 U |
| Aroclor-1221 | -- | -- | -- | -- | 4 U | 39 U | 390 U |
| Aroclor-1232 | -- | -- | -- | -- | 4 U | 39 U | 390 U |
| Aroclor-1242 | -- | -- | -- | -- | 31 | 39 U | 390 U |
| Aroclor-1248 | -- | -- | -- | -- | 4 U | 99 U | 980 U |
| Aroclor-1254 | -- | -- | -- | -- | 67 | 150 | 1400 |
| Aroclor-1260 | -- | -- | -- | -- | 42 | 100 | 550 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 140 | 250 | 2000 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>DW-SC26-11.1-12.<br>2/22/2006<br>11.1-12.1 FT<br>West Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0-0.5<br>2/14/2006<br>0-0.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0.5-1<br>2/14/2006<br>0.5-1 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC26<br>DW-SC26-11.1-12.<br>2/22/2006<br>11.1-12.1 FT<br>West Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0-0.5<br>2/14/2006<br>0-0.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-0.5-1<br>2/14/2006<br>0.5-1 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID | LDW-SC26 | LDW-SC27 | LDW-SC27 |
|---|---|---|---|---|---|---|---|
| | | | | Sample ID | DW-SC26-11.1-12. | LDW-SC27-0-0.5 | LDW-SC27-0.5-1 |
| | | | | Sample Date | 2/22/2006 | 2/14/2006 | 2/14/2006 |
| | | | | Sample Depth | 11.1-12.1 FT | 0-0.5 FT | 0.5-1 FT |
| | | | | SMS 2LAET[a] | West Nav. Channel - DSI | East Nav. Channel - DSI | East Nav. Channel - DSI |

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 3.5 | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 21.4 | -- | -- |
| Silt (total calc'd) | -- | -- | -- | -- | 54.8 | -- | -- |
| Clay (total calc'd) | -- | -- | -- | -- | 20.3 | -- | -- |
| Fines (percent silt+clay) | -- | -- | -- | -- | 75.1 | -- | -- |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.24 | 1.22 | 1.82 |
| Total solids | -- | -- | -- | -- | 53.1 | 52.8 | 50.7 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 9 UJ | -- | -- |
| Arsenic | 57 | 93 | -- | -- | 19 | -- | -- |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 1.5 | -- | -- |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 56.9 | -- | -- |
| Cobalt | -- | -- | -- | -- | 9.6 | -- | -- |
| Copper | 390 | 390 | -- | -- | 85.2 J | -- | -- |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 108 | -- | -- |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | **0.52** | -- | -- |
| Molybdenum | -- | -- | -- | -- | 2.5 | -- | -- |
| Nickel | -- | -- | -- | -- | 27 J | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 9 U | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | 1.9 | -- | -- |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 9 U | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 73.4 | -- | -- |
| Zinc | 410 | 960 | -- | -- | 190 | -- | -- |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 2.6 U | -- | -- |
| Acenaphthylene | 66 | 66 | -- | -- | 2.6 U | -- | -- |
| Acenaphthene | 16 | 57 | -- | -- | 2.6 U | -- | -- |
| Anthracene | 220 | 1200 | -- | -- | 3 | -- | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 6.7 | -- | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 10 | -- | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 2.8 | -- | -- |
| Chrysene | 110 | 460 | -- | -- | 13 | -- | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.6 U | -- | -- |
| Fluoranthene | 160 | 1200 | -- | -- | 13 | -- | -- |
| Fluorene | 23 | 79 | -- | -- | 2.6 U | -- | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 3.2 | -- | -- |
| Naphthalene | 99 | 170 | -- | -- | 2.6 U | -- | -- |
| Phenanthrene | 100 | 480 | -- | -- | 7.1 | -- | -- |
| Pyrene | 1000 | 1400 | -- | -- | 34 | -- | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 27 | -- | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 10 | -- | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 110 | -- | -- |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 59 U | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 59 U | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 59 U | -- | -- |
| Acenaphthene | -- | -- | 500 | 730 | 59 U | -- | -- |
| Anthracene | -- | -- | 960 | 4400 | 68 | -- | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 150 | -- | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 230 | -- | -- |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 350 | -- | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 260 | -- | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 63 | -- | -- |
| Chrysene | -- | -- | 1400 | 2800 | 280 | -- | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 59 U | -- | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | 280 | -- | -- |
| Fluorene | -- | -- | 540 | 1000 | 59 U | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 71 | -- | -- |
| Naphthalene | -- | -- | 2100 | 2400 | 59 U | -- | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | 160 | -- | -- |
| Pyrene | -- | -- | 2600 | 3300 | 760 | -- | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 610 | -- | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 230 | -- | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2440 | -- | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | 2670 | -- | -- |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.19 J | -- | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.19 J | -- | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.26 | -- | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.26 U | -- | -- |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 4.2 J | -- | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 59 U | -- | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 4.2 J | -- | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 5.9 | -- | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | 5.9 U | -- | -- |
| Nitrobenzene | -- | -- | -- | -- | 59 U | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 41 | -- | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.76 J | -- | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | 2.6 U | -- | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | 2.6 U | -- | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.6 U | -- | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.6 U | -- | -- |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 910 | -- | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 17 J | -- | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | 59 U | -- | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | 59 U | -- | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 59 U | -- | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 59 U | -- | -- |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 59 U | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 300 U | -- | -- |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 300 U | -- | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 18 UJ | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 590 U | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | 3.6 J | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 59 U | -- | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 300 U | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 300 U | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | 300 U | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | 300 U | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | 30 U | -- | -- |
| Phenol | 420 | 1200 | -- | -- | 59 U | -- | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 2.6 U | -- | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.26 U | -- | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.9 U | -- | -- |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 300 U | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | 300 UJ | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | 300 U | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 300 UJ | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | 300 UJ | -- | -- |
| Aniline | -- | -- | -- | -- | 59 UJ | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 20 J | -- | -- |
| Benzoic acid | 650 | 650 | -- | -- | 79 UJ | -- | -- |
| Carbazole | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 59 U | -- | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 5.9 U | -- | -- |
| Hexachloroethane | -- | -- | -- | -- | 59 U | -- | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 300 U | -- | -- |
| Isophorone | -- | -- | -- | -- | 59 U | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 30 UJ | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 30 UJ | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 43 U | -- | -- |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 59 U | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 59 U | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 59 U | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 59 U | -- | -- |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | ***150*** | ***260*** | ***83*** |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 4 UJ | 390 U | 200 U |
| Aroclor-1221 | -- | -- | -- | -- | 4 UJ | 390 U | 200 U |
| Aroclor-1232 | -- | -- | -- | -- | 4 UJ | 390 U | 200 U |
| Aroclor-1242 | -- | -- | -- | -- | 4 UJ | 390 U | 200 U |
| Aroclor-1248 | -- | -- | -- | -- | 1100 | 1200 U | 590 U |
| Aroclor-1254 | -- | -- | -- | -- | 1500 | 2100 | 960 |
| Aroclor-1260 | -- | -- | -- | -- | 660 | 1100 | 550 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 3300 | 3200 | 1510 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-0-2<br>2/14/2006<br>0-2 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1-1.5<br>2/14/2006<br>1-1.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-1.5-2<br>2/14/2006<br>1.5-2 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-2-2.5<br>2/14/2006<br>2-2.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2.5-3<br>2/14/2006<br>2.5-3 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2-4.5<br>2/14/2006<br>2-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | 6.2 |
| Sand (total calc'd) | -- | -- | -- | -- | -- | -- | 31.7 |
| Silt (total calc'd) | -- | -- | -- | -- | -- | -- | 46.9 |
| Clay (total calc'd) | -- | -- | -- | -- | -- | -- | 15.3 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | 62.2 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.14 | 2.27 | 2.12 |
| Total solids | -- | -- | -- | -- | 55.6 | 54.7 | 60.5 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | -- | 8 UJ |
| Arsenic | 57 | 93 | -- | -- | -- | -- | 17 |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | -- | 0.9 |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | -- | -- | 35.3 |
| Cobalt | -- | -- | -- | -- | -- | -- | 8.1 |
| Copper | 390 | 390 | -- | -- | -- | -- | 46.7 J |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | -- | -- | 43 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

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|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- | **0.41** |
| Molybdenum | -- | -- | -- | -- | -- | -- | 1.9 |
| Nickel | -- | -- | -- | -- | -- | -- | 19 J |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | -- | 8 U |
| Silver | 6.1 | 6.1 | -- | -- | -- | -- | 0.9 |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | -- | 8 U |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- | 67.5 |
| Zinc | 410 | 960 | -- | -- | -- | -- | 103 |

**Table B-3**

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|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | -- | 0.94 U |
| Acenaphthylene | 66 | 66 | -- | -- | -- | -- | 0.94 U |
| Acenaphthene | 16 | 57 | -- | -- | -- | -- | 0.94 U |
| Anthracene | 220 | 1200 | -- | -- | -- | -- | 1.6 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | -- | 2.5 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | -- | 3.9 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | -- | 1.1 |
| Chrysene | 110 | 460 | -- | -- | -- | -- | 5.7 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | -- | 0.94 U |
| Fluoranthene | 160 | 1200 | -- | -- | -- | -- | 4 |
| Fluorene | 23 | 79 | -- | -- | -- | -- | 0.94 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | -- | 1.1 |
| Naphthalene | 99 | 170 | -- | -- | -- | -- | 0.57 J |
| Phenanthrene | 100 | 480 | -- | -- | -- | -- | 2.8 |
| Pyrene | 1000 | 1400 | -- | -- | -- | -- | 9.9 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | -- | 9 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | -- | 5 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | -- | 37 |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | 20 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | -- | 20 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

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|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | -- | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | -- | -- | 20 U |
| Anthracene | -- | -- | 960 | 4400 | -- | -- | 34 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | -- | 54 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | -- | 83 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | -- | 110 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | -- | 82 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | -- | 24 |
| Chrysene | -- | -- | 1400 | 2800 | -- | -- | 120 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | -- | 20 U |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | -- | 84 |
| Fluorene | -- | -- | 540 | 1000 | -- | -- | 20 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | -- | 24 |
| Naphthalene | -- | -- | 2100 | 2400 | -- | -- | 12 J |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | -- | 60 |
| Pyrene | -- | -- | 2600 | 3300 | -- | -- | 210 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | -- | 190 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | -- | 106 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | -- | 790 |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | -- | 900 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | -- | 0.28 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | -- | 0.28 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | -- | 0.28 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | -- | 0.28 U |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-2-2.5<br>2/14/2006<br>2-2.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2.5-3<br>2/14/2006<br>2.5-3 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2-4.5<br>2/14/2006<br>2-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | -- | 5.9 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | -- | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | -- | 5.9 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | -- | 5.9 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | -- | 5.9 U |
| Nitrobenzene | -- | -- | -- | -- | -- | -- | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | 2.6 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | -- | 0.28 UJ |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | -- | 0.94 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | -- | 0.94 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | -- | 1.2 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | -- | 0.94 U |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | -- | 55 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | -- | 5.9 UJ |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | -- | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | -- | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | -- | 26 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | -- | 20 U |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- | 98 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- | 98 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | 17 UJ |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | 5.9 UJ |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-2-2.5<br>2/14/2006<br>2-2.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2.5-3<br>2/14/2006<br>2.5-3 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2-4.5<br>2/14/2006<br>2-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- | 98 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- | 98 U |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- | 98 U |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- | 98 U |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | 29 U |
| Phenol | 420 | 1200 | -- | -- | -- | -- | 18 J |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | -- | 0.94 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | -- | 0.28 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | 0.9 U |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- | 98 U |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | 98 UJ |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | 98 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | 98 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | 98 UJ |
| Aniline | -- | -- | -- | -- | -- | -- | 20 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | 29 UJ |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | 59 UJ |
| Carbazole | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | -- | 20 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | -- | 5.9 U |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- | 98 U |
| Isophorone | -- | -- | -- | -- | -- | -- | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- | 29 UJ |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-2-2.5<br>2/14/2006<br>2-2.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2.5-3<br>2/14/2006<br>2.5-3 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2-4.5<br>2/14/2006<br>2-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | 29 UJ |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | -- | 19 U |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- | 20 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- | 20 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- | 20 U |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-2-2.5<br>2/14/2006<br>2-2.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2.5-3<br>2/14/2006<br>2.5-3 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2-4.5<br>2/14/2006<br>2-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **39** | **13** | **12 J** |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 200 U | 79 U | 20 UJ |
| Aroclor-1221 | -- | -- | -- | -- | 200 U | 79 U | 20 UJ |
| Aroclor-1232 | -- | -- | -- | -- | 200 U | 79 U | 20 UJ |
| Aroclor-1242 | -- | -- | -- | -- | 200 U | 79 U | 20 UJ |
| Aroclor-1248 | -- | -- | -- | -- | 200 U | 79 U | 28 J |
| Aroclor-1254 | -- | -- | -- | -- | 490 | 140 | 110 J |
| Aroclor-1260 | -- | -- | -- | -- | 350 | 150 | 110 J |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 840 | 290 | 250 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-2-2.5<br>2/14/2006<br>2-2.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2.5-3<br>2/14/2006<br>2.5-3 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2-4.5<br>2/14/2006<br>2-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-2-2.5<br>2/14/2006<br>2-2.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2.5-3<br>2/14/2006<br>2.5-3 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2-4.5<br>2/14/2006<br>2-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-2-2.5<br>2/14/2006<br>2-2.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2.5-3<br>2/14/2006<br>2.5-3 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-2-4.5<br>2/14/2006<br>2-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-3-3.5<br>2/14/2006<br>3-3.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-3.5-4<br>2/14/2006<br>3.5-4 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-4-4.5<br>2/14/2006<br>4-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Silt (total calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Clay (total calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.8 | 1.16 | 2 |
| Total solids | -- | -- | -- | -- | 61.8 | 61.8 | 68.1 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | -- | -- | -- |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | -- | -- |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | -- | -- | -- |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | -- | -- | -- |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

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|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | -- | -- | -- |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | -- | -- | -- |

**Table B-3**

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|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | -- | -- |
| Acenaphthylene | 66 | 66 | -- | -- | -- | -- | -- |
| Acenaphthene | 16 | 57 | -- | -- | -- | -- | -- |
| Anthracene | 220 | 1200 | -- | -- | -- | -- | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | -- | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | -- | -- |
| Chrysene | 110 | 460 | -- | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | -- | -- |
| Fluoranthene | 160 | 1200 | -- | -- | -- | -- | -- |
| Fluorene | 23 | 79 | -- | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | -- | -- |
| Naphthalene | 99 | 170 | -- | -- | -- | -- | -- |
| Phenanthrene | 100 | 480 | -- | -- | -- | -- | -- |
| Pyrene | 1000 | 1400 | -- | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | -- | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | -- | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | -- | -- |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-3-3.5<br>2/14/2006<br>3-3.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-3.5-4<br>2/14/2006<br>3.5-4 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-4-4.5<br>2/14/2006<br>4-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | -- | -- |
| Acenaphthene | -- | -- | 500 | 730 | -- | -- | -- |
| Anthracene | -- | -- | 960 | 4400 | -- | -- | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | -- | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | -- | -- |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | -- | -- |
| Chrysene | -- | -- | 1400 | 2800 | -- | -- | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | -- | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | -- | -- |
| Fluorene | -- | -- | 540 | 1000 | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | -- | -- |
| Naphthalene | -- | -- | 2100 | 2400 | -- | -- | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | -- | -- |
| Pyrene | -- | -- | 2600 | 3300 | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | -- | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | -- | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | -- | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | -- | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | -- | -- |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-3-3.5<br>2/14/2006<br>3-3.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-3.5-4<br>2/14/2006<br>3.5-4 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-4-4.5<br>2/14/2006<br>4-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | -- | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | -- | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | -- | -- |
| Nitrobenzene | -- | -- | -- | -- | -- | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | -- | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | -- | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | -- | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | -- | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | -- | -- |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | -- | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | -- | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | -- | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | -- | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | -- | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | -- | -- |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-3-3.5<br>2/14/2006<br>3-3.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-3.5-4<br>2/14/2006<br>3.5-4 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-4-4.5<br>2/14/2006<br>4-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | -- |
| Phenol | 420 | 1200 | -- | -- | -- | -- | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | -- | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | -- |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | -- |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | -- |
| Carbazole | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | -- | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | -- | -- |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- | -- |
| Isophorone | -- | -- | -- | -- | -- | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-3-3.5<br>2/14/2006<br>3-3.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-3.5-4<br>2/14/2006<br>3.5-4 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-4-4.5<br>2/14/2006<br>4-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | -- | -- |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- | -- |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-3-3.5<br>2/14/2006<br>3-3.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-3.5-4<br>2/14/2006<br>3.5-4 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-4-4.5<br>2/14/2006<br>4-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 3.3 | 0.34 U | 0.2 U |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 7.7 U | 3.9 U | 3.9 U |
| Aroclor-1221 | -- | -- | -- | -- | 7.7 U | 3.9 U | 3.9 U |
| Aroclor-1232 | -- | -- | -- | -- | 7.7 U | 3.9 U | 3.9 U |
| Aroclor-1242 | -- | -- | -- | -- | 7.7 U | 3.9 U | 3.9 U |
| Aroclor-1248 | -- | -- | -- | -- | 7.7 U | 3.9 U | 3.9 U |
| Aroclor-1254 | -- | -- | -- | -- | 10 | 3.9 U | 3.9 U |
| Aroclor-1260 | -- | -- | -- | -- | 50 | 3.9 U | 3.9 U |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 60 | 3.9 U | 3.9 U |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-3-3.5<br>2/14/2006<br>3-3.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-3.5-4<br>2/14/2006<br>3.5-4 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-4-4.5<br>2/14/2006<br>4-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-3-3.5<br>2/14/2006<br>3-3.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-3.5-4<br>2/14/2006<br>3.5-4 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-4-4.5<br>2/14/2006<br>4-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC27<br>LDW-SC27-3-3.5<br>2/14/2006<br>3-3.5 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-3.5-4<br>2/14/2006<br>3.5-4 FT<br>East Nav. Channel - DSI | LDW-SC27<br>LDW-SC27-4-4.5<br>2/14/2006<br>4-4.5 FT<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.7 | 1.3 | 1 |
| Sand (total calc'd) | -- | -- | -- | -- | 24.9 | 16.7 | 13 |
| Silt (total calc'd) | -- | -- | -- | -- | 54.9 | 62.4 | 63 |
| Clay (total calc'd) | -- | -- | -- | -- | 19.5 | 19.6 | 23.1 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 74.4 | 82 | 86 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.59 | 2.07 | 3.14 |
| Total solids | -- | -- | -- | -- | 52.25 | 52.4 | 49.1 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 25 J | 9 UJ | 10 J |
| Arsenic | 57 | 93 | -- | -- | ***114*** | 18 | 30 |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.6 | 0.6 | 0.4 U |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 37 | 32.4 | 33 |
| Cobalt | -- | -- | -- | -- | 13.7 | 9.4 | 11.4 |
| Copper | 390 | 390 | -- | -- | 212 | 173 | 197 |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 114 | 40 | 65 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.37 | 0.2 | 0.24 |
| Molybdenum | -- | -- | -- | -- | 9.9 J | 1 J | 2 J |
| Nickel | -- | -- | -- | -- | 23 | 23 | 25 |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 9 U | 9 U | 10 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.5 U | 0.5 U | 0.6 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 9 U | 9 U | 10 U |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 67.5 | 68.9 | 71.1 |
| Zinc | 410 | 960 | -- | -- | 405 | 203 | 244 |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 4 U | 3.9 U | 3.9 U |
| Dibutyltin as ion | -- | -- | -- | -- | 25 J | 15 | 25 |
| Tributyltin as ion | -- | -- | -- | -- | 160 | 55 | 120 |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 2.3 U | 2.9 U | 1.9 U |
| Acenaphthylene | 66 | 66 | -- | -- | 2.3 U | 2.9 U | 1.9 U |
| Acenaphthene | 16 | 57 | -- | -- | 2.3 U | 2.9 U | 1.9 U |
| Anthracene | 220 | 1200 | -- | -- | 3.9 | 2.3 J | 1.5 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 12 | 7.7 | 4.5 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 10 | 7.2 | 5.4 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 4.6 | 4 | 2.4 |
| Chrysene | 110 | 460 | -- | -- | 27 | 12 | 8.6 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 1.3 J | 2 J | 1.2 J |
| Fluoranthene | 160 | 1200 | -- | -- | 37 | 6.3 | 3.8 |
| Fluorene | 23 | 79 | -- | -- | 1.5 J | 2.9 U | 1.9 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 5 | 4.3 | 2.7 |
| Naphthalene | 99 | 170 | -- | -- | 2.3 U | 2.9 U | 1.9 U |
| Phenanthrene | 100 | 480 | -- | -- | 12 | 5.8 | 3.8 |
| Pyrene | 1000 | 1400 | -- | -- | 37 | 17 J | 13 J |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 31 | 19 | 15 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 17 J | 8.2 J | 5.4 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 170 J | 80 J | 56 J |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 60 U | 60 U | 60 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 60 U | 60 U | 60 U |
| Acenaphthene | -- | -- | 500 | 730 | 60 U | 60 U | 60 U |
| Anthracene | -- | -- | 960 | 4400 | 100 | 48 J | 47 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 320 | 160 | 140 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 270 | 150 | 170 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 470 | 250 | 250 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 340 | 150 | 210 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 120 | 83 | 74 |
| Chrysene | -- | -- | 1400 | 2800 | 690 | 250 | 270 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 34 J | 42 J | 38 J |
| Fluoranthene | -- | -- | 1700 | 2500 | 950 | 130 | 120 |
| Fluorene | -- | -- | 540 | 1000 | 40 J | 60 U | 60 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 130 | 89 | 85 |
| Naphthalene | -- | -- | 2100 | 2400 | 60 U | 60 U | 60 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 300 | 120 | 120 |
| Pyrene | -- | -- | 2600 | 3300 | 960 | 360 J | 410 J |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 810 | 400 | 460 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 440 J | 170 J | 170 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 4280 J | 1660 J | 1770 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 4720 J | 1830 J | 1930 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.23 U | 0.29 U | 0.19 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.14 J | 0.29 U | 0.19 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.23 U | 0.29 UJ | 0.19 UJ |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.23 U | 0.29 U | 0.19 U |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6 U | 6 U | 6 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 3.6 J | 6 U | 6 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6 U | 6 UJ | 6 UJ |
| Hexachlorobenzene | -- | -- | 22 | 70 | 6 U | 6 U | 6 U |
| Nitrobenzene | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 20 U | 15 U | 8.9 U |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.3 | 1.3 | 0.83 |
| Diethyl phthalate | 61 | 110 | -- | -- | 2.3 U | 2.9 U | 1.9 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 2.3 U | 2.9 U | 1.9 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.3 U | 2.9 U | 1.9 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.3 U | 2.9 U | 1.9 U |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 510 U | 310 U | 280 U |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 34 | 27 | 26 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 60 U | 60 U | 60 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 60 U | 60 U | 60 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 60 U | 60 U | 60 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 60 U | 60 U | 60 U |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 300 U | 300 U | 300 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 300 U | 300 U | 300 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6 UJ | 6 UJ | 6 UJ |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 600 UJ | 600 UJ | 600 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | 6 U | 6 UJ | 4.2 J |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 60 U | 60 U | 60 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 300 U | 300 U | 300 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 300 U | 300 U | 300 U |
| 2-Nitrophenol | -- | -- | -- | -- | 300 U | 300 U | 300 U |
| 4-Nitrophenol | -- | -- | -- | -- | 300 U | 300 U | 300 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 32 | 30 U | 30 U |
| Phenol | 420 | 1200 | -- | -- | 210 | 150 | 110 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 2.3 U | 2.9 U | 1.9 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.23 U | 0.29 U | 0.19 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.4 U | 1.1 U | 0.73 U |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 300 U | 300 U | 300 U |
| 3-Nitroaniline | -- | -- | -- | -- | 300 U | 300 U | 300 U |
| 4-Nitroaniline | -- | -- | -- | -- | 300 U | 300 U | 300 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 300 UJ | 300 UJ | 300 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | 300 UJ | 300 UJ | 300 UJ |
| Aniline | -- | -- | -- | -- | 60 UJ | 60 UJ | 60 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | ***110*** | 30 U | 30 U |
| Benzoic acid | 650 | 650 | -- | -- | 200 J | 98 J | 85 J |
| Carbazole | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 60 U | 60 U | 60 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6 U | 6 U | 6 U |
| Hexachloroethane | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 300 UJ | 300 UJ | 300 UJ |
| Isophorone | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 30 U | 30 UJ | 30 UJ |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 30 U | 30 U | 30 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 35 U | 22 U | 23 U |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **17** | **17 J** | 9.2 |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 39 U | 77 U | 40 U |
| Aroclor-1221 | -- | -- | -- | -- | 39 U | 77 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 39 U | 77 U | 40 U |
| Aroclor-1242 | -- | -- | -- | -- | 39 U | 77 U | 40 U |
| Aroclor-1248 | -- | -- | -- | -- | 99 | 65 J | 55 |
| Aroclor-1254 | -- | -- | -- | -- | 180 | 110 | 110 |
| Aroclor-1260 | -- | -- | -- | -- | 160 | 180 | 120 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 440 | 360 J | 290 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | 638 | 513 | 496 |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | 143 | 73.8 | 87.8 |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | 12.1 | 6.35 | 8.85 |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | 3.39 | 2.51 | 2.7 |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | 14.1 | 10.5 | 26.6 |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | 21.8 | 17.5 | 18.7 |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | 3.84 | 3.03 | 5.78 |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | 11.4 | 9.85 | 10.1 |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | 0.436 J | 0.537 U | 0.413 J |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | 2.05 | 1.71 | 1.81 |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | 1.37 | 1.16 | 1.56 |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | 3.01 | 2.12 | 3.1 |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | 3.68 | 2.47 | 5.25 |
| 2,3,7,8-TCDD | -- | -- | -- | -- | 0.636 | 0.524 | 0.551 |
| 2,3,7,8-TCDF | -- | -- | -- | -- | 1.8 | 1.26 | 1.31 |
| OCDD | -- | -- | -- | -- | 6770 | 3710 | 5480 |
| OCDF | -- | -- | -- | -- | 517 | 237 | 219 |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | 14.9 J | 10.7 | 16 J |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | 12.8 J | 9.39 | 15.6 J |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | 11.8 J | 8.42 | 12.4 J |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | 19.2 J | 14.6 | 18.4 J |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | 19.9 J | 14.8 | 18.5 J |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-0-1<br>2/24/2006<br>0-1 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-1-2<br>2/24/2006<br>1-2 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-2-4<br>2/24/2006<br>2-4 FT<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. | | | | | | |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. | | | | | | |
| UJ | The analyte was not detected at the estimated detection limit. | | | | | | |
| C | The metal analyte is estimated below the reporting limit. | | | | | | |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. | | | | | | |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. | | | | | | |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. | | | | | | |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-5.5-7.5<br>2/24/2006<br>5.5-7.5 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-12-12.6<br>2/24/2006<br>12-12.6 FT<br>West Nav. Channel - DSI | LDW-SS50<br>LDW-SS202-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | 0.7 |
| Sand (total calc'd) | -- | -- | -- | -- | -- | -- | 31.6 |
| Silt (total calc'd) | -- | -- | -- | -- | -- | -- | 54.3 |
| Clay (total calc'd) | -- | -- | -- | -- | -- | -- | 13.5 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | 67.8 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.61 | 1.31 | 1.94 |
| Total solids | -- | -- | -- | -- | 68.4 | 64.2 | 51.5 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | 46.4 |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | 8.03 |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | 770 |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 130 J | 7 UJ | 0.4 UJ |
| Arsenic | 57 | 93 | -- | -- | ***760*** | 17 | 15.8 |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 1.4 | 0.6 | 1.3 |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 65 | 28 | 45.5 |
| Cobalt | -- | -- | -- | -- | 50 | 7.6 | 9.2 |
| Copper | 390 | 390 | -- | -- | ***1480*** | 68.5 | 88.6 |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | ***583*** | 37 | 92 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-5.5-7.5<br>2/24/2006<br>5.5-7.5 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-12-12.6<br>2/24/2006<br>12-12.6 FT<br>West Nav. Channel - DSI | LDW-SS50<br>LDW-SS202-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | ***0.72*** | 0.3 | 0.4 |
| Molybdenum | -- | -- | -- | -- | 61 | 9.9 | 3.3 |
| Nickel | -- | -- | -- | -- | 37 | 17 | 26 |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 20 U | 7 U | 9 U |
| Silver | 6.1 | 6.1 | -- | -- | 2 | 0.5 | 1.4 |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 20 U | 7 U | 0.4 U |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 92 | 59.2 | 69.6 |
| Zinc | 410 | 960 | -- | -- | ***1880*** | 97.5 | 179 |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-5.5-7.5<br>2/24/2006<br>5.5-7.5 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-12-12.6<br>2/24/2006<br>12-12.6 FT<br>West Nav. Channel - DSI | LDW-SS50<br>LDW-SS202-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 46 | 3.9 U | -- |
| Dibutyltin as ion | -- | -- | -- | -- | 960 | 5.6 U | -- |
| Tributyltin as ion | -- | -- | -- | -- | 3400 | 4.8 | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 4.1 U | 4.7 U | 8.2 U |
| Acenaphthylene | 66 | 66 | -- | -- | 4.1 U | 4.7 U | 8.2 U |
| Acenaphthene | 16 | 57 | -- | -- | 14 | 2.4 J | 8.2 U |
| Anthracene | 220 | 1200 | -- | -- | 28 | 2.4 J | 7.7 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 81 | 8.4 | 14 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 59 | 9.2 | 15 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 27 | 4.7 J | 4.5 J |
| Chrysene | 110 | 460 | -- | -- | 87 | 8.4 | 24 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | **12** | 3.3 | 8.2 U |
| Fluoranthene | 160 | 1200 | -- | -- | **250** | 24 | 24 |
| Fluorene | 23 | 79 | -- | -- | 9.9 | 4.7 U | 8.2 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 25 | 5.3 | 7.2 |
| Naphthalene | 99 | 170 | -- | -- | 2.8 J | 6.1 | 8.2 U |
| Phenanthrene | 100 | 480 | -- | -- | **110** | 7 | 22 |
| Pyrene | 1000 | 1400 | -- | -- | 220 | 23 | 46 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 110 | 18 | 43 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 160 J | 18 J | 30 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 880 | 100 J | 180 J |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 66 U | 61 U | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 66 U | 61 U | 160 U |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-5.5-7.5<br>2/24/2006<br>5.5-7.5 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-12-12.6<br>2/24/2006<br>12-12.6 FT<br>West Nav. Channel - DSI | LDW-SS50<br>LDW-SS202-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 66 U | 61 U | 160 U |
| Acenaphthene | -- | -- | 500 | 730 | 220 | 32 J | 160 U |
| Anthracene | -- | -- | 960 | 4400 | 450 | 32 J | 150 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 1300 | 110 | 280 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 950 | 120 | 300 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 1000 | 98 | 420 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 830 | 140 | 410 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 440 | 61 J | 87 J |
| Chrysene | -- | -- | 1400 | 2800 | 1400 | 110 | 460 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 200 | 43 | 160 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 4100 | 310 | 470 |
| Fluorene | -- | -- | 540 | 1000 | 160 | 61 U | 160 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 400 | 69 | 140 |
| Naphthalene | -- | -- | 2100 | 2400 | 45 J | 80 | 160 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 1700 | 92 | 430 |
| Pyrene | -- | -- | 2600 | 3300 | 3600 | 300 | 890 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 1800 | 240 | 830 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 2600 J | 236 J | 580 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 14200 | 1360 J | 3460 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 16800 J | 1600 J | 4040 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | ***9.9*** | 0.47 U | 1.6 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 1.5 | 0.47 U | 1.6 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.68 | 0.47 UJ | **1.6 U** |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.41 U** | **0.47 U** | 0.051 U |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-5.5-7.5<br>2/24/2006<br>5.5-7.5 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-12-12.6<br>2/24/2006<br>12-12.6 FT<br>West Nav. Channel - DSI | LDW-SS50<br>LDW-SS202-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 160 | 6.1 U | 31 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 7.2 | 61 U | 160 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 24 | 6.1 U | 31 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 11 | 6.1 UJ | 31 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 6.6 U | 6.1 U | 0.98 U |
| Nitrobenzene | -- | -- | -- | -- | 66 U | 61 U | 160 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | **62** | 7.3 | 29 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.7 | 0.47 U | 1.6 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 4.1 U | 4.7 U | 1.6 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.99 | 4.7 U | 1.6 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 4.1 U | 2.4 J | 8.2 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 3.5 J | 4.7 U | 8.2 U |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 1000 | 96 | 560 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 28 | 6.1 U | 31 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 66 U | 61 U | 31 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 16 | 61 U | 31 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 66 U | 31 J | 160 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 56 J | 61 U | 160 U |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 66 U | 61 U | 160 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 8.5 J | 4.3 J | ***31 U*** |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 660 U | 610 UJ | 1600 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6.6 | 6.1 U | 31 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-5.5-7.5<br>2/24/2006<br>5.5-7.5 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-12-12.6<br>2/24/2006<br>12-12.6 FT<br>West Nav. Channel - DSI | LDW-SS50<br>LDW-SS202-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 37 J | 61 U | 160 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| 2-Nitrophenol | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| 4-Nitrophenol | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| Pentachlorophenol | 360 | 690 | -- | -- | **410** | 31 U | 160 U |
| Phenol | 420 | 1200 | -- | -- | 66 U | 61 U | 160 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 5 | 4.7 U | 8.2 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.41 U | 0.47 U | 0.051 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | ***19 U*** | 2.3 UJ | 1.6 U |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| 3-Nitroaniline | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| 4-Nitroaniline | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| 4-Chloroaniline | -- | -- | -- | -- | 330 U | 310 U | 770 U |
| Aniline | -- | -- | -- | -- | 66 U | 61 U | 160 U |
| Benzyl alcohol | 57 | 73 | -- | -- | 33 U | 31 U | ***160 U*** |
| Benzoic acid | 650 | 650 | -- | -- | 320 J | 610 U | 310 U |
| Carbazole | -- | -- | -- | -- | -- | -- | 160 U |
| Dibenzofuran | -- | -- | 540 | 700 | 80 | 61 U | 160 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6.6 U | 6.1 U | 0.98 U |
| Hexachloroethane | -- | -- | -- | -- | 66 U | 61 U | 160 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 330 U | 310 UJ | 770 U |
| Isophorone | -- | -- | -- | -- | 66 U | 61 U | 160 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 33 U | 31 UJ | 160 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-5.5-7.5<br>2/24/2006<br>5.5-7.5 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-12-12.6<br>2/24/2006<br>12-12.6 FT<br>West Nav. Channel - DSI | LDW-SS50<br>LDW-SS202-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 33 U | 31 U | 160 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 300 U | 30 UJ | 31 U |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 66 U | 61 U | 160 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 66 U | 61 U | 160 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 66 U | 61 U | 160 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 66 U | 61 U | 160 U |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | 2 U |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | 15 U |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | 14 U |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | 2 U |
| Aldrin | -- | -- | -- | -- | -- | -- | 0.98 U |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | 0.98 U |
| alpha-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| beta-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| delta-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| gamma-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | 0.98 U |
| Oxychlordane | -- | -- | -- | -- | -- | -- | 2 U |
| Dieldrin | -- | -- | -- | -- | -- | -- | 2 U |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | 0.98 U |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | 2 U |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | 2 U |
| Endrin | -- | -- | -- | -- | -- | -- | 2 U |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-5.5-7.5<br>2/24/2006<br>5.5-7.5 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-12-12.6<br>2/24/2006<br>12-12.6 FT<br>West Nav. Channel - DSI | LDW-SS50<br>LDW-SS202-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | 4.4 UJ |
| Endrin ketone | -- | -- | -- | -- | -- | -- | 2 U |
| Heptachlor | -- | -- | -- | -- | -- | -- | 3.8 U |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | 0.98 U |
| Toxaphene | -- | -- | -- | -- | -- | -- | 98 U |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | 2 U |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | 15 U |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | 2 U |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | 9.8 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | ***200*** | **41** | **19** |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 310 U | 25 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 310 U | 25 U | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 310 U | 25 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 310 U | 25 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 310 U | 190 | 160 |
| Aroclor-1254 | -- | -- | -- | -- | 2600 | 220 | 150 |
| Aroclor-1260 | -- | -- | -- | -- | 610 | 130 | 59 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 3200 | 540 | 370 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-5.5-7.5<br>2/24/2006<br>5.5-7.5 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-12-12.6<br>2/24/2006<br>12-12.6 FT<br>West Nav. Channel - DSI | LDW-SS50<br>LDW-SS202-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC28<br>LDW-SC28-5.5-7.5<br>2/24/2006<br>5.5-7.5 FT<br>West Nav. Channel - DSI | LDW-SC28<br>LDW-SC28-12-12.6<br>2/24/2006<br>12-12.6 FT<br>West Nav. Channel - DSI | LDW-SS50<br>LDW-SS202-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID | LDW-SC28 | LDW-SC28 | LDW-SS50 |
|---|---|---|---|---|---|---|---|
| | | | | Sample ID | LDW-SC28-5.5-7.5 | LDW-SC28-12-12.6 | LDW-SS202-010 |
| | | | | Sample Date | 2/24/2006 | 2/24/2006 | 1/24/2005 |
| | | | | Sample Depth | 5.5-7.5 FT | 12-12.6 FT | 0-10 cm |
| | | | | SMS 2LAET[a] | West Nav. Channel - DSI | West Nav. Channel - DSI | East Nav. Channel - DSI |

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.1 U | 29.3 | 5.1 |
| Sand (total calc'd) | -- | -- | -- | -- | 28.8 | 54 | 37.1 |
| Silt (total calc'd) | -- | -- | -- | -- | 59.1 | 9 | 37.5 |
| Clay (total calc'd) | -- | -- | -- | -- | 12.1 | 7.8 | 20.3 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 71.2 | 16.8 | 57.8 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.33 | 1.36 | 2.47 |
| Total solids | -- | -- | -- | -- | 47.3 | 63.2 | 53.1 |
| Total solids (preserved) | -- | -- | -- | -- | -- | 56.3 | 56.7 |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | 9.62 | 27.6 |
| Sulfides (total) | -- | -- | -- | -- | -- | 90 J | 73 |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 0.4 UJ | 6.8 J | 1.8 J |
| Arsenic | 57 | 93 | -- | -- | 14.7 | ***807*** | ***171*** |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.4 | 3 | 1 |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 32 | 153 | 53 |
| Cobalt | -- | -- | -- | -- | 9.2 | 50 | 24 |
| Copper | 390 | 390 | -- | -- | 82 | ***1420*** | ***605*** |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 45 | ***780*** | 210 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.25 | ***0.79*** | 0.36 |
| Molybdenum | -- | -- | -- | -- | 0.5 | 75 | 18 |
| Nickel | -- | -- | -- | -- | 28 | 82 | 30 |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 1 U | 40 U | 20 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.5 J | 2 U | 1 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 0.4 U | 0.4 | 0.4 U |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 61.9 | 76 | 79 |
| Zinc | 410 | 960 | -- | -- | 138 | ***2830*** | **768** |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | 8 J |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | 59 |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | 140 |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 2.6 U | 4.3 | 4 U |
| Acenaphthylene | 66 | 66 | -- | -- | 2.6 U | 4 | 4 U |
| Acenaphthene | 16 | 57 | -- | -- | 2.6 U | **17** | 2 J |
| Anthracene | 220 | 1200 | -- | -- | 3.8 | 39 | 6.1 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 10 | 88 | 13 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 12 | 74 | 11 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 4.2 | 21 | 6.1 |
| Chrysene | 110 | 460 | -- | -- | 16 | **140** | 23 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 1.6 | **12** | 4 U |
| Fluoranthene | 160 | 1200 | -- | -- | 22 | **210** | 40 |
| Fluorene | 23 | 79 | -- | -- | 2.6 U | 17 | 2.8 J |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 4.2 | 26 | 5.7 |
| Naphthalene | 99 | 170 | -- | -- | 2.6 U | 8.1 | 4 U |
| Phenanthrene | 100 | 480 | -- | -- | 7.3 | **130** | 20 |
| Pyrene | 1000 | 1400 | -- | -- | 18 | 170 | 29 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 30 | 150 | 21 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 11 | 210 | 31 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 120 | 890 | 150 |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 61 U | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 61 U | 58 | 98 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 61 U | 54 | 98 U |
| Acenaphthene | -- | -- | 500 | 730 | 61 U | 230 | 50 J |
| Anthracene | -- | -- | 960 | 4400 | 89 | 530 | 150 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 240 | 1200 | 320 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 270 | 1000 | 280 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 440 | 1000 | 320 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 260 | 950 | 200 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 97 | 290 | 150 |
| Chrysene | -- | -- | 1400 | 2800 | 380 | 1900 | 570 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 37 | 160 | 98 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 520 | 2900 | 1000 |
| Fluorene | -- | -- | 540 | 1000 | 61 U | 230 | 68 J |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 98 | 360 | 140 |
| Naphthalene | -- | -- | 2100 | 2400 | 61 U | 110 | 98 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 170 | 1700 | 490 |
| Pyrene | -- | -- | 2600 | 3300 | 420 | 2300 | 720 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 700 | 2000 | 520 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 260 | 2900 | 760 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2760 | 12100 | 3700 |
| Total PAH (calc'd) | -- | -- | -- | -- | 3020 | 14900 | 4500 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.26 U | 1.4 U | ***4 U*** |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.26 U | 1.4 U | **4 U** |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.26 U | **1.4 U** | ***4 U*** |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.26 U | **1.4 U** | ***4 U*** |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6.1 U | 19 U | 98 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 61 U | 19 U | 98 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6.1 U | 19 U | 98 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6.1 U | 19 U | 98 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 6.1 U | 19 U | 98 U |
| Nitrobenzene | -- | -- | -- | -- | 61 U | 19 U | 98 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 20 | **57** | 6.5 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.4 | **5.2** | 4 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 2.6 U | 1.4 U | 4 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.37 | 1.4 U | 4 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.6 U | 6.8 | 4 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.6 U | 1.4 U | 4 U |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 460 | 770 | 160 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 33 | 71 | 98 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 61 U | 19 U | 98 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 8.6 | 19 U | 98 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 61 U | 92 | 98 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 61 U | 19 U | 98 U |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 61 U | 19 U | 98 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6.1 U | 19 U | ***98 U*** |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 610 UJ | 190 UJ | 980 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6.1 U | 21 | ***98 U*** |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 61 U | 88 | 98 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| 2-Nitrophenol | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| 4-Nitrophenol | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 31 U | 96 U | **490 U** |
| Phenol | 420 | 1200 | -- | -- | 61 U | 370 | 240 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 2.6 U | 7.4 | 4 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.26 U | 1.4 U | **4 U** |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.29 U | 1.4 U | 4 U |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| 3-Nitroaniline | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| 4-Nitroaniline | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| 4-Chloroaniline | -- | -- | -- | -- | 310 U | 96 U | 490 U |
| Aniline | -- | -- | -- | -- | 61 UJ | 19 U | 98 U |
| Benzyl alcohol | 57 | 73 | -- | -- | 31 UJ | 19 UJ | ***98 U*** |
| Benzoic acid | 650 | 650 | -- | -- | 610 U | 190 U | ***980 U*** |
| Carbazole | -- | -- | -- | -- | -- | 300 | 53 J |
| Dibenzofuran | -- | -- | 540 | 700 | 61 U | 100 | 98 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6.1 U | 19 U | 98 U |
| Hexachloroethane | -- | -- | -- | -- | 61 U | 19 U | 98 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 310 UJ | 96 U | 490 U |
| Isophorone | -- | -- | -- | -- | 61 U | 19 U | 98 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 49 U | 96 U | 490 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 31 U | 96 U | 98 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 6.7 U | 19 U | 98 U |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 61 U | 19 U | 98 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 61 U | 19 U | 98 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 61 U | 19 U | 98 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 61 U | 19 U | 98 U |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 9.2 | 9.6 J | 2.8 |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 3.9 U | 20 UJ | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 3.9 U | 20 UJ | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 3.9 U | 20 UJ | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 3.9 U | 21 J | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 60 | 20 UJ | 40 U |
| Aroclor-1254 | -- | -- | -- | -- | 76 | 61 | 39 |
| Aroclor-1260 | -- | -- | -- | -- | 78 | 49 | 31 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 214 | 131 J | 70 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS326<br>LDW-SS326-010<br>/4/2006 2:02:00 P<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS48<br>LDW-SS48-010<br>1/18/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS49<br>LDW-SS49-010<br>1/26/2005<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.8 | 0.5 | 0.1 U |
| Sand (total calc'd) | -- | -- | -- | -- | 32.5 | 22.7 | 22.2 |
| Silt (total calc'd) | -- | -- | -- | -- | 50.4 | 54.1 | 57.9 |
| Clay (total calc'd) | -- | -- | -- | -- | 16.4 | 22.6 | 20.2 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 66.8 | 76.7 | 78.1 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.94 | 2.13 | 2.4 |
| Total solids | -- | -- | -- | -- | 50.9 | 47.9 | 44.23 |
| Total solids (preserved) | -- | -- | -- | -- | 46.2 | 39.6 | 35 |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | 8.22 | 8.06 | 13.9 |
| Sulfides (total) | -- | -- | -- | -- | 110 | 19 J | 11 |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 0.4 UJ | 0.4 UJ | 0.4 UJ |
| Arsenic | 57 | 93 | -- | -- | 16.8 | 16.9 | 15.5 |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 1.2 | 0.6 | 0.7 |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 44 | 38 | 39 |
| Cobalt | -- | -- | -- | -- | 8.7 | 10.5 | 10.8 |
| Copper | 390 | 390 | -- | -- | 89.4 | 127 | 106 |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 87 | 64 | 64 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | **0.41** | 0.3 | 0.3 |
| Molybdenum | -- | -- | -- | -- | 3 | 2 | 2 |
| Nickel | -- | -- | -- | -- | 26 | 24 | 26 |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 10 U | 10 UJ | 10 U |
| Silver | 6.1 | 6.1 | -- | -- | 1.2 | 0.8 | 0.7 |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 0.4 U | 0.4 U | 0.4 U |
| Tin | -- | -- | -- | -- | -- | | -- |
| Vanadium | -- | -- | -- | -- | 68.3 | 73.2 | 76.3 |
| Zinc | 410 | 960 | -- | -- | 181 | 190 | 167 |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | 7.8 | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | 28 | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 5 U | 0.94 U | 0.83 U |
| Acenaphthylene | 66 | 66 | -- | -- | 5 U | 0.94 U | 0.83 U |
| Acenaphthene | 16 | 57 | -- | -- | 5 U | 0.94 U | 0.83 U |
| Anthracene | 220 | 1200 | -- | -- | 5.7 | 1.8 | 1.5 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 8.8 | 6.1 | 5 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 13 | 5.6 | 4.6 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 3.1 J | 1.8 | 1.2 |
| Chrysene | 110 | 460 | -- | -- | 15 | 13 | 10 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 5 U | 0.94 U | 0.83 U |
| Fluoranthene | 160 | 1200 | -- | -- | 14 | 15 | 10 |
| Fluorene | 23 | 79 | -- | -- | 5 U | 0.94 U | 0.83 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 0.52 | 2.2 | 1.3 |
| Naphthalene | 99 | 170 | -- | -- | 5 U | 0.94 U | 0.83 U |
| Phenanthrene | 100 | 480 | -- | -- | 8.2 | 5.2 | 3.1 |
| Pyrene | 1000 | 1400 | -- | -- | 35 | 11 | 6.3 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 39 | 13 | 10 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 14 | 7 | 4.6 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 130 J | 68 | 49 |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 97 U | 20 U | 20 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 97 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 97 U | 20 U | 20 U |
| Anthracene | -- | -- | 960 | 4400 | 110 | 39 | 36 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 170 | 130 | 120 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 260 | 120 | 110 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 400 | 170 | 140 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 350 | 110 | 100 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 61 J | 38 | 28 |
| Chrysene | -- | -- | 1400 | 2800 | 300 | 270 | 240 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 97 U | 20 U | 20 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 270 | 330 | 250 |
| Fluorene | -- | -- | 540 | 1000 | 97 U | 20 U | 20 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 10 | 46 | 32 |
| Naphthalene | -- | -- | 2100 | 2400 | 97 U | 20 U | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 160 | 110 | 74 |
| Pyrene | -- | -- | 2600 | 3300 | 670 | 240 | 150 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 750 | 280 | 240 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 270 | 150 | 110 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2490 J | 1450 | 1170 |
| Total PAH (calc'd) | -- | -- | -- | -- | 2760 J | 1600 | 1280 |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.34 U | 0.31 U | 0.27 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.34 U | 0.31 U | 0.27 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.34 U | 0.31 U | 0.27 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.05 U | 0.31 U | 0.27 U |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6.5 U | 6.6 U | 6.5 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6.5 U | 6.6 U | 6.5 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6.5 U | 6.6 U | 6.5 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 0.97 U | 6.6 U | 6.5 U |
| Nitrobenzene | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 29 | 5.6 U | 4 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.34 U | 1.3 | 0.27 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.34 U | 0.31 U | 0.33 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.34 U | 0.31 U | 0.27 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 5 U | 0.94 U | 0.83 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 5 U | 0.94 U | 0.83 U |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 560 | 120 U | 95 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 6.5 U | 28 | 6.5 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 6.5 U | 6.6 U | 7.8 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 6.5 U | 6.6 U | 6.5 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 97 U | 20 U | 20 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 97 U | 20 U | 20 U |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6.5 U | 6.6 U | 6.5 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 970 U | 200 UJ | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6.5 U | 6.6 U | 6.5 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 97 U | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| 2-Nitrophenol | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| 4-Nitrophenol | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 32 U | 33 UJ | 33 UJ |
| Phenol | 420 | 1200 | -- | -- | 97 U | 20 U | 20 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 5 U | 0.94 U | 0.83 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.05 U | 0.31 U | 0.27 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.34 U | 0.31 U | 0.27 U |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| 3-Nitroaniline | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| 4-Nitroaniline | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| 4-Chloroaniline | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| Aniline | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| Benzyl alcohol | 57 | 73 | -- | -- | 32 U | 20 UJ | 20 U |
| Benzoic acid | 650 | 650 | -- | -- | 65 U | 66 U | 65 U |
| Carbazole | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| Dibenzofuran | -- | -- | 540 | 700 | 97 U | 20 U | 20 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 0.97 U | 6.6 U | 6.5 U |
| Hexachloroethane | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 480 U | 98 U | 99 U |
| Isophorone | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 32 U | 33 U | 33 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 32 U | 33 U | 33 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 6.5 U | 6.6 U | 6.5 U |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 97 U | 20 U | 20 U |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | 1.9 U | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | 21 U | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | 17 U | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | 1.9 U | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | 21 U | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | 1.9 U | -- | -- |
| Aldrin | -- | -- | -- | -- | 0.97 U | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | 0.97 U | -- | -- |
| alpha-BHC | -- | -- | -- | -- | 0.97 U | -- | -- |
| beta-BHC | -- | -- | -- | -- | 3 U | -- | -- |
| delta-BHC | -- | -- | -- | -- | 0.97 U | -- | -- |
| gamma-BHC | -- | -- | -- | -- | 0.97 U | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | 0.97 U | -- | -- |
| Oxychlordane | -- | -- | -- | -- | 1.9 U | -- | -- |
| Dieldrin | -- | -- | -- | -- | 1.9 U | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | 0.97 U | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | 8.8 U | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | 1.9 U | -- | -- |
| Endrin | -- | -- | -- | -- | 1.9 U | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | 7 UJ | -- | -- |
| Endrin ketone | -- | -- | -- | -- | 1.9 U | -- | -- |
| Heptachlor | -- | -- | -- | -- | 5.2 U | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | 0.97 U | -- | -- |
| Toxaphene | -- | -- | -- | -- | 97 U | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | 1.9 U | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | 21 U | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | 20 U | -- | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | 9.7 U | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **41** | 7.3 J | 8.7 |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 19 U | 20 UJ | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 19 U | 20 UJ | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 19 U | 20 UJ | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 19 U | 25 J | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 330 | 20 UJ | 65 |
| Aroclor-1254 | -- | -- | -- | -- | 320 | 72 | 84 |
| Aroclor-1260 | -- | -- | -- | -- | 140 | 58 | 60 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 790 | 155 J | 209 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS50<br>LDW-SS50-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | LDW-SS51<br>LDW-SS51-010<br>1/18/2005<br>0-10 cm<br>Nav. Channel - DSI | LDW-SS52<br>LDW-SS52-010<br>1/25/2005<br>0-10 cm<br>Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. | | | | | | |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. | | | | | | |
| UJ | The analyte was not detected at the estimated detection limit. | | | | | | |
| C | The metal analyte is estimated below the reporting limit. | | | | | | |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. | | | | | | |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. | | | | | | |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. | | | | | | |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.1 U | 6.2 | 1.8 |
| Sand (total calc'd) | -- | -- | -- | -- | 11.3 | 45.6 | 41 |
| Silt (total calc'd) | -- | -- | -- | -- | 64.7 | 34.7 | 42 |
| Clay (total calc'd) | -- | -- | -- | -- | 24 | 13.5 | 15 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 88.7 | 48.2 | 57 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.64 | 2.02 | 2.78 |
| Total solids | -- | -- | -- | -- | 44.7 | 58.4 | -- |
| Total solids (preserved) | -- | -- | -- | -- | 42.8 | 63.4 | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | 5.99 | 4.3 | -- |
| Sulfides (total) | -- | -- | -- | -- | 28 | 100 | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | 19000 |
| Antimony | -- | -- | -- | -- | 0.4 U | 0.3 UJ | 10 UJ |
| Arsenic | 57 | 93 | -- | -- | 39.7 | 8.8 | 19 |
| Barium | -- | -- | -- | -- | -- | -- | 89 |
| Beryllium | -- | -- | -- | -- | -- | -- | 0.42 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.7 | 0.5 | 0.54 |
| Calcium | -- | -- | -- | -- | -- | -- | 10000 |
| Chromium | 260 | 270 | -- | -- | 42 | 25.6 | 28 |
| Cobalt | -- | -- | -- | -- | 12 | 7.6 | 10 |
| Copper | 390 | 390 | -- | -- | 163 J | 66.2 | 180 |
| Iron | -- | -- | -- | -- | -- | -- | 32000 J |
| Lead | 450 | 530 | -- | -- | 74 | 38 | 53 |
| Magnesium | -- | -- | -- | -- | -- | -- | 8100 |
| Manganese | -- | -- | -- | -- | -- | -- | 420 |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.31 | 0.19 | 0.21 |
| Molybdenum | -- | -- | -- | -- | 3 | 2.2 | -- |
| Nickel | -- | -- | -- | -- | 26 | 18 | 21 |
| Potassium | -- | -- | -- | -- | -- | -- | 2700 |
| Selenium | -- | -- | -- | -- | 10 U | 8 U | 1 |
| Silver | 6.1 | 6.1 | -- | -- | 0.7 U | 0.5 U | 0.39 |
| Sodium | -- | -- | -- | -- | -- | -- | 13000 |
| Thallium | -- | -- | -- | -- | 0.4 U | 0.3 U | 0.12 |
| Tin | -- | -- | -- | -- | -- | -- | 9 |
| Vanadium | -- | -- | -- | -- | 81.1 | 58.7 | 54 |
| Zinc | 410 | 960 | -- | -- | 247 J | 112 | 240 |

## Table B-3
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | 5.6 U | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | 6.3 | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.76 U | 4.8 U | 3.2 |
| Acenaphthylene | 66 | 66 | -- | -- | 0.76 U | 4.8 U | 1.8 |
| Acenaphthene | 16 | 57 | -- | -- | 0.76 U | 4.8 U | 6.1 |
| Anthracene | 220 | 1200 | -- | -- | 3.4 | 5.9 | 17 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 42 | 12 | 86 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 16 | 13 | 22 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 2.2 | 2.7 J | 14 |
| Chrysene | 110 | 460 | -- | -- | 17 | 21 | **120** |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 1.3 | 4.8 U | 5.8 |
| Fluoranthene | 160 | 1200 | -- | -- | 28 | 21 | **500** |
| Fluorene | 23 | 79 | -- | -- | 1.1 | 4.8 U | 6.8 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 7.6 | 1.5 | 17 |
| Naphthalene | 99 | 170 | -- | -- | 0.76 U | 4.8 U | 3.6 |
| Phenanthrene | 100 | 480 | -- | -- | 6.8 | 9.9 | **140** |
| Pyrene | 1000 | 1400 | -- | -- | 16 | 41 | 180 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 42 | 40 | 100 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 11 | 16 | 180 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 170 | 150 J | **1000** |
| **PAHs (ug/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 U | 97 U | 90 |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | 97 U | 50 |
| Acenaphthene | -- | -- | 500 | 730 | 20 U | 97 U | 170 |
| Anthracene | -- | -- | 960 | 4400 | 91 | 120 | 480 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 1100 | 250 | 2400 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 410 | 270 | 620 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 780 | 400 | 2000 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 320 | 410 | 890 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 59 | 55 J | 380 |
| Chrysene | -- | -- | 1400 | 2800 | 460 | 430 | 3300 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 34 | 97 U | 160 |
| Fluoranthene | -- | -- | 1700 | 2500 | 750 | 420 | 14000 |
| Fluorene | -- | -- | 540 | 1000 | 29 | 97 U | 190 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 200 | 30 | 470 |
| Naphthalene | -- | -- | 2100 | 2400 | 20 U | 97 U | 100 |
| Phenanthrene | -- | -- | 1500 | 5400 | 180 | 200 | 3900 |
| Pyrene | -- | -- | 2600 | 3300 | 420 | 830 | 4900 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 1100 | 810 | 2900 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 300 | 320 | 4900 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 4500 | 3100 J | 29000 |
| Total PAH (calc'd) | -- | -- | -- | -- | 4800 | 3420 J | 34000 |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.76 U | 0.32 U | 0.72 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.76 U | 0.32 U | 0.72 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.76 U | 0.32 U | 0.72 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.038 U | 0.049 U | **0.72 U** |
| **Benzenes (ug/kg dry weight)** | | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | 6.5 U | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 97 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | 6.5 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 20 U | 6.5 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 0.99 U | 0.99 U | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 97 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 7.6 | 9.9 | 16 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.95 | 0.32 U | 0.72 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.76 U | 0.74 U | 0.72 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.76 U | 0.32 U | 0.72 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.76 U | 4.8 U | 1.1 |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.76 U | 4.8 U | 0.72 U |
| **Phthalates (ug/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 200 | 200 | 440 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 25 | 6.5 U | 20 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 15 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 U | 6.5 U | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 U | 97 U | 30 |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 97 U | 20 U |
| **Phenols (ug/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 97 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 99 U | 480 U | 40 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 99 U | 480 U | 60 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 U | 6.5 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 U | 970 U | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 U | 6.5 U | 20 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | 97 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 99 U | 480 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 99 U | 480 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | 99 U | 480 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 99 U | 480 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 99 U | 32 UJ | 100 U |
| Phenol | 420 | 1200 | -- | -- | 59 U | 97 U | 80 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 0.76 U | 4.8 U | 12 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.038 U | 0.049 U | 0.72 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.76 U | 0.32 | 1.4 U |
| **Misc Extractables (ug/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 99 U | 480 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 99 U | 480 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | 99 U | 480 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 99 U | 480 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | 99 U | 480 U | 60 U |
| Aniline | -- | -- | -- | -- | 20 U | 97 U | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 20 U | 32 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | 65 U | 200 U |
| Carbazole | -- | -- | -- | -- | 26 | 97 U | 320 |
| Dibenzofuran | -- | -- | 540 | 700 | 20 U | 97 U | 320 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 0.99 U | 0.99 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 20 U | 97 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 99 U | 480 U | 100 UJ |
| Isophorone | -- | -- | -- | -- | 20 U | 97 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 99 U | 32 U | 40 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 99 U | 32 U | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 20 U | 6.5 | 40 U |
| **Ethers (ug/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 20 U | 97 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | 97 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 20 U | 97 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 20 U | 97 U | 40 U |
| **Pesticides (ug/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | 2 U | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | 2 U | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | 2 U | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | 2 U | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | 2 U | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | 2 U | -- |
| Aldrin | -- | -- | -- | -- | -- | 0.99 U | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | 0.99 U | -- |
| alpha-BHC | -- | -- | -- | -- | -- | 0.99 U | -- |
| beta-BHC | -- | -- | -- | -- | -- | 0.99 U | -- |
| delta-BHC | -- | -- | -- | -- | -- | 0.99 U | -- |
| gamma-BHC | -- | -- | -- | -- | -- | 0.99 U | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | 0.99 U | -- |
| Oxychlordane | -- | -- | -- | -- | -- | 2 U | -- |
| Dieldrin | -- | -- | -- | -- | -- | 2 U | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | 0.99 U | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | 2 U | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | 2 U | -- |
| Endrin | -- | -- | -- | -- | -- | 2 U | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | 2 UJ | -- |
| Endrin ketone | -- | -- | -- | -- | -- | 2 U | -- |
| Heptachlor | -- | -- | -- | -- | -- | 0.99 U | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | 0.99 U | -- |
| Toxaphene | -- | -- | -- | -- | -- | 99 U | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | 2 U | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | 2 U | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | 2 U | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | 9.9 U | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 8.3 | 4.5 | 6.8 |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 U | 20 UJ |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 60 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 70 U | 26 | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 120 | 38 | 92 |
| Aroclor-1260 | -- | -- | -- | -- | 95 | 27 | 96 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 220 | 91 | 188 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-028 | -- | -- | -- | -- | -- | -- | 2000 J |
| PCB-044 | -- | -- | -- | -- | -- | -- | 3000 J |
| PCB-055 | -- | -- | -- | -- | -- | -- | 4000 J |
| PCB-066 | -- | -- | -- | -- | -- | -- | 10000 U |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | 1000 U |
| PCB-081 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | 5000 J |
| PCB-105 | -- | -- | -- | -- | -- | -- | 3000 J |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-118 | -- | -- | -- | -- | -- | -- | 7000 |
| PCB-123 | -- | -- | -- | -- | -- | -- | 2000 UJ |
| PCB-126 | -- | -- | -- | -- | -- | -- | 1000 U |
| PCB-128 | -- | -- | -- | -- | -- | -- | 2000 J |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | 13000 J |
| PCB-153 | -- | -- | -- | -- | -- | -- | 9000 J |
| PCB-156 | -- | -- | -- | -- | -- | -- | 2000 J |
| PCB-157 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-167 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-169 | -- | -- | -- | -- | -- | -- | 1000 U |
| PCB-170 | -- | -- | -- | -- | -- | -- | 4000 J |
| PCB-180 | -- | -- | -- | -- | -- | -- | 8000 J |
| PCB-187 | -- | -- | -- | -- | -- | -- | 5000 J |
| PCB-189 | -- | -- | -- | -- | -- | -- | 1000 UJ |
| PCB-195 | -- | -- | -- | -- | -- | -- | 1000 J |
| PCB-206 | -- | -- | -- | -- | -- | -- | 1000 |
| PCB-209 | -- | -- | -- | -- | -- | -- | 1000 U |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS53<br>LDW-SS53-010<br>2/2/2005<br>0-10 cm<br>West Nav. Channel - DSI | LDW-SS54<br>LDW-SS54-010<br>1/24/2005<br>0-10 cm<br>East Nav. Channel - DSI | DR120<br>SD-DR120-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. | | | | | | |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. | | | | | | |
| UJ | The analyte was not detected at the estimated detection limit. | | | | | | |
| C | The metal analyte is estimated below the reporting limit. | | | | | | |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. | | | | | | |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. | | | | | | |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. | | | | | | |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR121<br>SD-DR121-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - DSI | WST354<br>WST18-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.01 U | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 5 J | 2.3 |
| Silt (total calc'd) | -- | -- | -- | -- | 68 | 66 |
| Clay (total calc'd) | -- | -- | -- | -- | 26 | 32 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 94 | -- |
| **Conventional Parameters** | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.39 | 2.24 |
| Total solids | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | |
| Aluminum | -- | -- | -- | -- | 27000 | -- |
| Antimony | -- | -- | -- | -- | 10 UJ | -- |
| Arsenic | 57 | 93 | -- | -- | 18 | -- |
| Barium | -- | -- | -- | -- | 97 | -- |
| Beryllium | -- | -- | -- | -- | 0.48 | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.42 | -- |
| Calcium | -- | -- | -- | -- | 8000 | -- |
| Chromium | 260 | 270 | -- | -- | 39 | -- |
| Cobalt | -- | -- | -- | -- | 11 | -- |
| Copper | 390 | 390 | -- | -- | 110 | -- |
| Iron | -- | -- | -- | -- | 38000 J | -- |
| Lead | 450 | 530 | -- | -- | 47 | -- |
| Magnesium | -- | -- | -- | -- | 9800 | -- |
| Manganese | -- | -- | -- | -- | 440 | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR121<br>SD-DR121-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - DSI | WST354<br>WST18-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.27 | -- |
| Molybdenum | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | 24 | -- |
| Potassium | -- | -- | -- | -- | 3400 | -- |
| Selenium | -- | -- | -- | -- | 18 J | -- |
| Silver | 6.1 | 6.1 | -- | -- | 0.35 | -- |
| Sodium | -- | -- | -- | -- | 13000 | -- |
| Thallium | -- | -- | -- | -- | 0.1 | -- |
| Tin | -- | -- | -- | -- | 19 | -- |
| Vanadium | -- | -- | -- | -- | 83 | -- |
| Zinc | 410 | 960 | -- | -- | 170 | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR121<br>SD-DR121-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - DSI | WST354<br>WST18-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| **Organometallic Compounds (ug/kg dry weight)** | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 19 J | -- |
| Dibutyltin as ion | -- | -- | -- | -- | 29 J | -- |
| Tributyltin as ion | -- | -- | -- | -- | 120 J | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | 5 UJ | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.84 U | -- |
| Acenaphthylene | 66 | 66 | -- | -- | 0.84 U | -- |
| Acenaphthene | 16 | 57 | -- | -- | 0.84 | -- |
| Anthracene | 220 | 1200 | -- | -- | 2.9 | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 10 | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 9.6 | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 6.7 | -- |
| Chrysene | 110 | 460 | -- | -- | 15 | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 1.7 | -- |
| Fluoranthene | 160 | 1200 | -- | -- | 25 | -- |
| Fluorene | 23 | 79 | -- | -- | 1.3 | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 7.1 | -- |
| Naphthalene | 99 | 170 | -- | -- | 0.84 U | -- |
| Phenanthrene | 100 | 480 | -- | -- | 7.1 | -- |
| Pyrene | 1000 | 1400 | -- | -- | 19 | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 23 | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 12 | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 120 | -- |
| **PAHs (ug/kg dry weight)** | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 U | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR121<br>SD-DR121-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - DSI | WST354<br>WST18-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | -- |
| Acenaphthene | -- | -- | 500 | 730 | 20 | -- |
| Anthracene | -- | -- | 960 | 4400 | 70 | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 250 | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 230 | -- |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 320 | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 220 | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 160 | -- |
| Chrysene | -- | -- | 1400 | 2800 | 360 | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 40 | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | 600 | -- |
| Fluorene | -- | -- | 540 | 1000 | 30 | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 170 | -- |
| Naphthalene | -- | -- | 2100 | 2400 | 20 U | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | 170 | -- |
| Pyrene | -- | -- | 2600 | 3300 | 460 | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 540 | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 290 | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2810 | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | 3100 | -- |
| **Benzenes (mg/kg organic carbon)** | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.84 U | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.84 U | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | **0.84 U** | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.84 U** | -- |
| **Benzenes (ug/kg dry weight)** | | | | | | |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR121<br>SD-DR121-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - DSI | WST354<br>WST18-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 20 U | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | 20 U | -- |
| Nitrobenzene | -- | -- | -- | -- | 20 U | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 14 | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.3 | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.84 U | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.84 U | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.84 U | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.84 U | -- |
| **Phthalates (ug/kg dry weight)** | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 340 | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 30 | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 U | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 U | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | -- |
| **Phenols (ug/kg dry weight)** | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 40 U | -- |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 60 U | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 U | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 U | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 U | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR121<br>SD-DR121-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - DSI | WST354<br>WST18-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 200 U | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 200 U | -- |
| 2-Nitrophenol | -- | -- | -- | -- | 100 U | -- |
| 4-Nitrophenol | -- | -- | -- | -- | 100 U | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | 100 U | -- |
| Phenol | 420 | 1200 | -- | -- | 30 | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 0.84 | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.84 U | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.7 U | -- |
| **Misc Extractables (ug/kg dry weight)** | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 100 U | -- |
| 3-Nitroaniline | -- | -- | -- | -- | 200 U | -- |
| 4-Nitroaniline | -- | -- | -- | -- | 100 U | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 200 U | -- |
| 4-Chloroaniline | -- | -- | -- | -- | 60 U | -- |
| Aniline | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | -- |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | -- |
| Carbazole | -- | -- | -- | -- | 20 | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 20 | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 20 U | -- |
| Hexachloroethane | -- | -- | -- | -- | 20 U | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 100 UJ | -- |
| Isophorone | -- | -- | -- | -- | 20 U | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 40 U | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR121<br>SD-DR121-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - DSI | WST354<br>WST18-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 40 U | -- |
| **Ethers (ug/kg dry weight)** | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 40 U | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 40 U | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 40 U | -- |
| **Pesticides (ug/kg dry weight)** | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR121<br>SD-DR121-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - DSI | WST354<br>WST18-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- |
| **Herbicides (ug/kg dry weight)** | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 4.1 | 3.5 J |
| **PCB Aroclors (ug/kg dry weight)** | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | -- |
| Aroclor-1221 | -- | -- | -- | -- | 40 U | -- |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | -- |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | -- |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | -- |
| Aroclor-1254 | -- | -- | -- | -- | 46 | -- |
| Aroclor-1260 | -- | -- | -- | -- | 52 | -- |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 98 | 78 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | |
| PCB-018 | -- | -- | -- | -- | 1000 UJ | -- |
| PCB-028 | -- | -- | -- | -- | 1000 J | -- |
| PCB-044 | -- | -- | -- | -- | 1000 J | -- |
| PCB-055 | -- | -- | -- | -- | 2000 J | -- |
| PCB-066 | -- | -- | -- | -- | 2000 UJ | -- |

**Table B-3**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR121<br>SD-DR121-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - DSI | WST354<br>WST18-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | 1000 UJ | 340 U |
| PCB-081 | -- | -- | -- | -- | 1000 U | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 3000 J | 26000 J |
| PCB-105 | -- | -- | -- | -- | 1000 J | 3300 |
| PCB-110 | -- | -- | -- | -- | -- | 6200 |
| PCB-114 | -- | -- | -- | -- | 1000 UJ | -- |
| PCB-118 | -- | -- | -- | -- | 3000 J | 5500 |
| PCB-123 | -- | -- | -- | -- | 1000 UJ | -- |
| PCB-126 | -- | -- | -- | -- | 1000 UJ | 310 U |
| PCB-128 | -- | -- | -- | -- | 1000 UJ | 3800 J |
| PCB-129 | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 7000 J | 5900 |
| PCB-153 | -- | -- | -- | -- | 5000 J | 19000 J |
| PCB-156 | -- | -- | -- | -- | 1000 UJ | 990 |
| PCB-157 | -- | -- | -- | -- | 1000 UJ | 250 U |
| PCB-167 | -- | -- | -- | -- | 1000 UJ | -- |
| PCB-169 | -- | -- | -- | -- | 1000 U | 770 U |
| PCB-170 | -- | -- | -- | -- | 2000 J | 3100 |
| PCB-180 | -- | -- | -- | -- | 4000 J | 6200 |
| PCB-187 | -- | -- | -- | -- | 3000 J | -- |
| PCB-189 | -- | -- | -- | -- | 1000 UJ | 350 U |
| PCB-195 | -- | -- | -- | -- | 1000 UJ | -- |
| PCB-206 | -- | -- | -- | -- | 1000 UJ | -- |
| PCB-209 | -- | -- | -- | -- | 1000 UJ | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- |

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR121<br>SD-DR121-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - DSI | WST354<br>WST18-03<br>9/16/1997<br>0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-3

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | SMS 2LAET[a] | Location ID: DR121<br>Sample ID: SD-DR121-0000<br>Sample Date: 8/31/1998<br>Sample Depth: 0-10 cm<br>West Nav. Channel - DSI | Location ID: WST354<br>Sample ID: WST18-03<br>Sample Date: 9/16/1997<br>Sample Depth: 0-10 cm<br>West Nav. Channel - DSI |
|---|---|---|---|---|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. | | | | | |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. | | | | | |
| UJ | The analyte was not detected at the estimated detection limit. | | | | | |
| C | The metal analyte is estimated below the reporting limit. | | | | | |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. | | | | | |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. | | | | | |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. | | | | | |

## Table B-4
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 52 | 86 | 9.5 |
| Silt (total calc'd) | -- | -- | -- | -- | 1.6 | 6.9 | 65 |
| Clay (total calc'd) | -- | -- | -- | -- | 1.4 | 5.4 | 26 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 0.3 | 1.11 | 1.88 |
| Total solids | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | -- | -- | -- |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | -- | -- |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | -- | -- | -- |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | -- | -- | -- |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | -- | -- | -- |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | -- | -- | -- |

## Table B-4
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | -- | -- |
| Acenaphthylene | 66 | 66 | -- | -- | -- | -- | -- |
| Acenaphthene | 16 | 57 | -- | -- | -- | -- | -- |
| Anthracene | 220 | 1200 | -- | -- | -- | -- | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | -- | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | -- | -- |
| Chrysene | 110 | 460 | -- | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | -- | -- |
| Fluoranthene | 160 | 1200 | -- | -- | -- | -- | -- |
| Fluorene | 23 | 79 | -- | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | -- | -- |
| Naphthalene | 99 | 170 | -- | -- | -- | -- | -- |
| Phenanthrene | 100 | 480 | -- | -- | -- | -- | -- |
| Pyrene | 1000 | 1400 | -- | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | -- | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | -- | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | -- | -- |
| **PAHs (µg/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | -- | -- |
| Acenaphthene | -- | -- | 500 | 730 | -- | -- | -- |
| Anthracene | -- | -- | 960 | 4400 | -- | -- | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | -- | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | -- | -- |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | -- | -- |
| Chrysene | -- | -- | 1400 | 2800 | -- | -- | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | -- | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | -- | -- |
| Fluorene | -- | -- | 540 | 1000 | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | -- | -- |
| Naphthalene | -- | -- | 2100 | 2400 | -- | -- | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | -- | -- |
| Pyrene | -- | -- | 2600 | 3300 | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | -- | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | -- | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | -- | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | -- | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | -- | -- |
| **Benzenes (µg/kg dry weight)** | | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | -- | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | -- | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | -- | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | -- | -- |
| Nitrobenzene | -- | -- | -- | -- | -- | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | -- | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | -- | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | -- | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | -- | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | -- | -- |
| **Phthalates (µg/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | -- | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | -- | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | -- | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | -- | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | -- | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | -- | -- |
| **Phenols (µg/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | -- |
| Phenol | 420 | 1200 | -- | -- | -- | -- | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | -- | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | -- |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | -- |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | -- |
| Carbazole | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | -- | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | -- | -- |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- | -- |
| Isophorone | -- | -- | -- | -- | -- | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | -- | -- |
| **Ethers (µg/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- | -- |
| **Pesticides (µg/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | -- | 4.4 J | 4.9 J |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1221 | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1232 | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1242 | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1248 | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1254 | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1260 | -- | -- | -- | -- | -- | -- | -- |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 31 J | 49 J | 93 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | 220 U | 200 U | 310 U |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 9100 J | 23000 J | 27000 J |
| PCB-105 | -- | -- | -- | -- | 1000 | 1400 | 2800 |
| PCB-110 | -- | -- | -- | -- | 2700 | 14000 | 7500 |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | 2100 | 5300 | 7300 |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | 200 U | 180 U | 280 U |
| PCB-128 | -- | -- | -- | -- | 1700 U | 17000 J | 4100 U |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 1400 | 8000 | 6100 |
| PCB-153 | -- | -- | -- | -- | 5400 J | 14000 J | 19000 J |
| PCB-156 | -- | -- | -- | -- | 170 U | 150 U | 240 U |
| PCB-157 | -- | -- | -- | -- | 150 U | 130 U | 210 U |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | 450 U | 400 U | 630 U |
| PCB-170 | -- | -- | -- | -- | 720 | 10000 | 4200 |
| PCB-180 | -- | -- | -- | -- | 1000 | 14000 | 5600 |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 210 U | 190 U | 290 U |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-4
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT082<br>EIT11-01<br>11/12/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EIT083<br>EIT11-02<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW | EST208<br>EST19-05<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-05-0010<br>JHGSA-SD1-05-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-06-0010<br>JHGSA-SD1-06-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 7.12 | 22.2 |
| Sand (total calc'd) | -- | -- | -- | -- | 90.6 | 70.4 |
| Silt (total calc'd) | -- | -- | -- | -- | 0.94 | 2.28 |
| Clay (total calc'd) | -- | -- | -- | -- | 0.49 | 0.77 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 0.34 | 0.98 |
| Total solids | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | 1.4 | 1.2 |
| Barium | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.03 J | 0.05 J |
| Calcium | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 7.2 | 4.8 |
| Cobalt | -- | -- | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | 11.5 | 18.8 |
| Iron | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 10.2 | 13.7 |
| Magnesium | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- |

**Table B-4**

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|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | 0.02 | 0.07 |
| Sodium | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | 19.2 | 25.6 |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-05-0010<br>JHGSA-SD1-05-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-06-0010<br>JHGSA-SD1-06-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | 0.51 J |
| Acenaphthylene | 66 | 66 | -- | -- | -- | 2 J |
| Acenaphthene | 16 | 57 | -- | -- | -- | 8.5 |
| Anthracene | 220 | 1200 | -- | -- | -- | 14 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | 11 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | 10 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | 6.3 |
| Chrysene | 110 | 460 | -- | -- | -- | 22 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | 2 J |
| Fluoranthene | 160 | 1200 | -- | -- | -- | 98 |
| Fluorene | 23 | 79 | -- | -- | -- | 6.5 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | 6.8 |
| Naphthalene | 99 | 170 | -- | -- | -- | 1 J |
| Phenanthrene | 100 | 480 | -- | -- | -- | 37 |
| Pyrene | 1000 | 1400 | -- | -- | -- | 71 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | 20 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | 69 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | 250 J |
| **PAHs (µg/kg dry weight)** | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 1 J | 5 J |

**Table B-4**

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|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 2 U | 20 J |
| Acenaphthene | -- | -- | 500 | 730 | 10 J | 83 |
| Anthracene | -- | -- | 960 | 4400 | 9 J | 140 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 20 J | 110 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 10 J | 100 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 20 J | 120 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 10 J | 84 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 8 J | 62 |
| Chrysene | -- | -- | 1400 | 2800 | 56 | 220 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 2 J | 20 J |
| Fluoranthene | -- | -- | 1700 | 2500 | 53 | 960 |
| Fluorene | -- | -- | 540 | 1000 | 4 J | 64 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 7 J | 67 |
| Naphthalene | -- | -- | 2100 | 2400 | 3 J | 10 J |
| Phenanthrene | -- | -- | 1500 | 5400 | 20 J | 360 |
| Pyrene | -- | -- | 2600 | 3300 | 42 | 700 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 30 J | 200 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 46 J | 680 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 228 J | 2440 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 274 J | 3120 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | 0.2 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | 0.2 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | 0.2 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | 0.2 U |
| **Benzenes (µg/kg dry weight)** | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-05-0010<br>JHGSA-SD1-05-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-06-0010<br>JHGSA-SD1-06-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 2 U | 2 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 3 U | 3 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 2 U | 2 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 2 U | 2 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 2 U | 2 U |
| Nitrobenzene | -- | -- | -- | -- | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | 2.3 J |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | 0.31 U |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | 0.2 J |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | 0.2 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | 0.31 J |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | 0.2 U |
| **Phthalates (µg/kg dry weight)** | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 10 J | 23 J |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 3 U | 3 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 2 U | 2 J |
| Dimethyl phthalate | -- | -- | 71 | 160 | 2 U | 2 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 3 U | 3 J |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 2 U | 2 U |
| **Phenols (µg/kg dry weight)** | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | ***50 U*** | ***50 U*** |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | 30 U | 30 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-05-0010<br>JHGSA-SD1-05-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-06-0010<br>JHGSA-SD1-06-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 50 U | 50 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | 50 U | 50 U |
| Phenol | 420 | 1200 | -- | -- | 8 U | 8 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | 4.7 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | 0.2 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | 0.31 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 250 U | 250 U |
| Carbazole | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 1 J | 46 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 2 U | 2 U |
| Hexachloroethane | -- | -- | -- | -- | 8 U | 8 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- |
| Isophorone | -- | -- | -- | -- | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-05-0010<br>JHGSA-SD1-05-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-06-0010<br>JHGSA-SD1-06-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 3 U | 3 U |
| **Ethers (µg/kg dry weight)** | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- |
| **Pesticides (µg/kg dry weight)** | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-05-0010<br>JHGSA-SD1-05-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-06-0010<br>JHGSA-SD1-06-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | -- | 2 U |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1260 | -- | -- | -- | -- | 20 U | 20 U |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 20 U | 20 U |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-05-0010<br>JHGSA-SD1-05-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-06-0010<br>JHGSA-SD1-06-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- |

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-05-0010<br>JHGSA-SD1-05-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-06-0010<br>JHGSA-SD1-06-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-05-0010<br>JHGSA-SD1-05-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-06-0010<br>JHGSA-SD1-06-0010<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 8.43 | 23.5 |
| Sand (total calc'd) | -- | -- | -- | -- | 72.9 | 69.6 |
| Silt (total calc'd) | -- | -- | -- | -- | 6.77 | 7.64 |
| Clay (total calc'd) | -- | -- | -- | -- | 2.21 | 1.77 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.18 | 0.71 |
| Total solids | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | 4.2 | 2 |
| Barium | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.16 | 0.07 |
| Calcium | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 14.5 | 10.1 |
| Cobalt | -- | -- | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | 21.4 | 16.1 |
| Iron | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 29.2 | 18.6 |
| Magnesium | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | 0.15 | 0.05 |
| Sodium | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | 54 | 47.1 |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.25 J | 0.14 U |
| Acenaphthylene | 66 | 66 | -- | -- | 1.7 J | 0.28 J |
| Acenaphthene | 16 | 57 | -- | -- | 3 | 0.42 J |
| Anthracene | 220 | 1200 | -- | -- | 4 | 0.85 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 7.1 | 2.8 J |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 6.6 | 1.4 J |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 4.3 | 1.4 J |
| Chrysene | 110 | 460 | -- | -- | 12 | 3.8 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 0.85 J | 0.42 J |
| Fluoranthene | 160 | 1200 | -- | -- | 14 | 6.3 |
| Fluorene | 23 | 79 | -- | -- | 0.85 J | 0.28 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 4.7 | 1.4 J |
| Naphthalene | 99 | 170 | -- | -- | 0.51 J | 0.14 U |
| Phenanthrene | 100 | 480 | -- | -- | 4.1 | 1.4 J |
| Pyrene | 1000 | 1400 | -- | -- | 13 | 4.8 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 14 | 5.6 J |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 14 J | 3 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 77 J | 28 J |
| **PAHs (µg/kg dry weight)** | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 3 J | 1 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 J | 2 J |
| Acenaphthene | -- | -- | 500 | 730 | 35 | 3 J |
| Anthracene | -- | -- | 960 | 4400 | 47 | 6 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 84 | 20 J |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 78 | 10 J |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 100 | 20 J |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 74 | 20 J |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 51 | 10 J |
| Chrysene | -- | -- | 1400 | 2800 | 140 | 27 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 10 J | 3 J |
| Fluoranthene | -- | -- | 1700 | 2500 | 170 | 45 |
| Fluorene | -- | -- | 540 | 1000 | 10 J | 2 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 55 | 10 J |
| Naphthalene | -- | -- | 2100 | 2400 | 6 J | 1 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 48 | 10 J |
| Pyrene | -- | -- | 2600 | 3300 | 150 | 34 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 170 | 40 J |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 166 J | 21 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 910 J | 199 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 1080 J | 220 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.17 U | 0.28 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.17 U | 0.28 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.17 U | 0.28 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.17 U | 0.28 U |
| **Benzenes (µg/kg dry weight)** | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 2 U | 2 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 3 U | 3 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 2 U | 2 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 2 U | 2 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 2 U | 2 U |
| Nitrobenzene | -- | -- | -- | -- | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 5.9 J | 3.1 J |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.25 U | 0.42 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.17 U | 0.28 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.17 U | 0.28 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 3 | 0.56 J |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.17 U | 0.28 U |
| **Phthalates (µg/kg dry weight)** | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 70 J | 22 J |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 3 U | 3 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 2 U | 2 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 2 U | 2 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 35 | 4 J |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 2 U | 2 U |
| **Phenols (µg/kg dry weight)** | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | ***50 U*** | ***50 U*** |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | 30 U | 30 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 50 U | 50 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | 50 U | 50 U |
| Phenol | 420 | 1200 | -- | -- | 59 | 31 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 0.34 J | 0.14 J |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.17 U | 0.28 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.25 U | 0.42 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 250 U | 250 U |
| Carbazole | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 4 J | 1 J |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 2 U | 2 U |
| Hexachloroethane | -- | -- | -- | -- | 8 U | 8 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- |
| Isophorone | -- | -- | -- | -- | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 3 U | 3 U |
| **Ethers (µg/kg dry weight)** | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- |
| **Pesticides (µg/kg dry weight)** | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- |

## Table B-4
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **12 J** | 5.6 J |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 100 | 40 J |
| Aroclor-1260 | -- | -- | -- | -- | 40 J | 20 U |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 140 J | 40 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- |

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP10-00<br>JHGSA-SD1-COMP10-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | JHGSA-SD1-COMP16-00<br>JHGSA-SD1-COMP16-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 24.4 | 10.7 |
| Sand (total calc'd) | -- | -- | -- | -- | 40 | 60.2 |
| Silt (total calc'd) | -- | -- | -- | -- | 34.6 | 26.77 |
| Clay (total calc'd) | -- | -- | -- | -- | 4.71 | 7.42 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | 34.19 |
| **Conventional Parameters** | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.9 | 1.96 |
| Total solids | -- | -- | -- | -- | -- | 53.7 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | 20.3 J |
| Arsenic | 57 | 93 | -- | -- | 6 | 46.5 J |
| Barium | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.24 | 0.323 |
| Calcium | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 19.8 | 31.9 |
| Cobalt | -- | -- | -- | -- | -- | 9.8 |
| Copper | 390 | 390 | -- | -- | 37.7 | 189 |
| Iron | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 40.3 | 67.8 J |
| Magnesium | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | -- | 0.115 |
| Molybdenum | -- | -- | -- | -- | -- | 5.21 |
| Nickel | -- | -- | -- | -- | -- | 16.9 |
| Potassium | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | 0.7 |
| Silver | 6.1 | 6.1 | -- | -- | 0.27 | 0.545 |
| Sodium | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | 0.095 |
| Tin | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | 54.8 |
| Zinc | 410 | 960 | -- | -- | 62.1 | 291 |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | 4.9 |
| Dibutyltin as ion | -- | -- | -- | -- | -- | 15 |
| Tributyltin as ion | -- | -- | -- | -- | -- | 32 |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | 0.74 J |
| **PAHs (mg/kg organic carbon)** | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.31 J | 2.7 |
| Acenaphthylene | 66 | 66 | -- | -- | 0.34 J | 9.2 |
| Acenaphthene | 16 | 57 | -- | -- | 0.14 J | 1.8 |
| Anthracene | 220 | 1200 | -- | -- | 0.93 | 17 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 1.7 | 51 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 1.7 | 56 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 1.3 | **44** |
| Chrysene | 110 | 460 | -- | -- | 3.4 | **130** |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 0.034 U | 6.6 |
| Fluoranthene | 160 | 1200 | -- | -- | 2.9 | **470** |
| Fluorene | 23 | 79 | -- | -- | 0.28 J | 4.9 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 0.69 J | **45** |
| Naphthalene | 99 | 170 | -- | -- | 0.34 J | 4.2 |
| Phenanthrene | 100 | 480 | -- | -- | 1.2 | **120** |
| Pyrene | 1000 | 1400 | -- | -- | 4.8 | 360 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 2.7 | 150 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 3.3 J | 160 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 19 J | **1300** |
| **PAHs (µg/kg dry weight)** | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | 32 |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 9 J | 53 |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 10 J | 180 |
| Acenaphthene | -- | -- | 500 | 730 | 4 J | 36 |
| Anthracene | -- | -- | 960 | 4400 | 27 | 340 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 49 | 1000 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 50 | 1100 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | 1300 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 42 | 1900 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 37 | 1100 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 38 | 870 |
| Chrysene | -- | -- | 1400 | 2800 | 100 | 2600 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 1 U | 130 |
| Fluoranthene | -- | -- | 1700 | 2500 | 85 | 9300 |
| Fluorene | -- | -- | 540 | 1000 | 8 J | 97 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 20 J | 890 |
| Naphthalene | -- | -- | 2100 | 2400 | 10 J | 82 |
| Phenanthrene | -- | -- | 1500 | 5400 | 36 | 2400 |
| Pyrene | -- | -- | 2600 | 3300 | 140 | 7100 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 79 | 3000 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 95 J | 3100 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 560 J | 26000 |
| Total PAH (calc'd) | -- | -- | -- | -- | 660 J | 29100 |
| **Benzenes (mg/kg organic carbon)** | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.069 U | 1 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.069 U | 1 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.069 U | **1 U** |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.069 U | 0.27 JN |
| **Benzenes (µg/kg dry weight)** | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 2 U | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 3 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 2 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 2 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 2 U | 5.3 JN |
| Nitrobenzene | -- | -- | -- | -- | -- | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 2.4 J | 7.1 J |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.1 U | 1.1 |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.17 J | 1 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.069 U | 1 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.31 J | 0.82 J |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.069 U | 2 U |
| **Phthalates (µg/kg dry weight)** | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 70 J | 140 J |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 3 U | 21 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 5 J | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 2 U | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 9 J | 16 J |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 2 U | 40 U |
| **Phenols (µg/kg dry weight)** | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | 20 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | 20 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | ***50 U*** | ***100 UJ*** |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | 400 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 30 U | 20 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 50 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | 20 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | 20 U |
| 2-Nitrophenol | -- | -- | -- | -- | -- | 20 U |
| 4-Nitrophenol | -- | -- | -- | -- | -- | 200 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 50 U | 80 J |
| Phenol | 420 | 1200 | -- | -- | 8 U | 23 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 0.1 J | 2 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.069 U | 1 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.1 U | 1 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | 40 U |
| 3-Nitroaniline | -- | -- | -- | -- | -- | 40 U |
| 4-Nitroaniline | -- | -- | -- | -- | -- | 40 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | -- | 20 U |
| Aniline | -- | -- | -- | -- | -- | 40 U |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 20 U |
| Benzoic acid | 650 | 650 | -- | -- | 250 U | 400 U |
| Carbazole | -- | -- | -- | -- | -- | 25 |
| Dibenzofuran | -- | -- | 540 | 700 | 3 J | 39 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 2 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 8 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | 100 UJ |
| Isophorone | -- | -- | -- | -- | -- | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | 20 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | 100 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 3 U | 20 U |
| **Ethers (µg/kg dry weight)** | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | 20 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | 20 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | 20 U |
| **Pesticides (µg/kg dry weight)** | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | 1.9 U |
| 2,4'-DDE | -- | -- | -- | -- | -- | 1 U |
| 2,4'-DDT | -- | -- | -- | -- | -- | 8.8 JN |
| 4,4'-DDD | -- | -- | -- | -- | -- | 1 U |
| 4,4'-DDE | -- | -- | -- | -- | -- | 3.5 JN |
| 4,4'-DDT | -- | -- | -- | -- | -- | 9.3 JN |
| Aldrin | -- | -- | -- | -- | -- | 1 U |
| alpha-Chlordane | -- | -- | -- | -- | -- | 1 U |
| alpha-BHC | -- | -- | -- | -- | -- | 1 U |
| beta-BHC | -- | -- | -- | -- | -- | 1 U |
| delta-BHC | -- | -- | -- | -- | -- | 1 U |
| gamma-BHC | -- | -- | -- | -- | -- | 1 JN |
| gamma-Chlordane | -- | -- | -- | -- | -- | 4.6 U |
| Oxychlordane | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | 1 U |
| alpha-Endosulfan | -- | -- | -- | -- | -- | 1 U |
| beta-Endosulfan | -- | -- | -- | -- | -- | 3 U |
| Endosulfan sulfate | -- | -- | -- | -- | -- | 1 U |
| Endrin | -- | -- | -- | -- | -- | 1 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | 1.7 U |
| Endrin ketone | -- | -- | -- | -- | -- | 1 U |
| Heptachlor | -- | -- | -- | -- | -- | 1 U |
| Heptachlor epoxide | -- | -- | -- | -- | -- | 1 U |
| Toxaphene | -- | -- | -- | -- | -- | 170 U |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | 1 U |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | 21.6 JN |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | 4.6 U |
| **Herbicides (µg/kg dry weight)** | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | 1 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 3.4 J | **17** |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 10 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 10 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 10 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 10 U |
| Aroclor-1254 | -- | -- | -- | -- | 40 J | 170 |
| Aroclor-1260 | -- | -- | -- | -- | 60 J | 160 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 100 J | 330 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- |

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP22-00<br>JHGSA-SD1-COMP22-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - Glacier NW | B4a<br>LDW-B4a-S<br>8/15/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. | | | | | |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. | | | | | |
| UJ | The analyte was not detected at the estimated detection limit. | | | | | |
| C | The metal analyte is estimated below the reporting limit. | | | | | |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. | | | | | |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. | | | | | |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 2.11 | 16.2 | 0.6 |
| Sand (total calc'd) | -- | -- | -- | -- | 67.7 | 75.5 | 56.1 |
| Silt (total calc'd) | -- | -- | -- | -- | 23.2 | 7.82 | 32.8 |
| Clay (total calc'd) | -- | -- | -- | -- | 6.43 | 3.24 | 10.6 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 29.63 | 11.06 | 43.4 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.39 | 1.4 | 1.77 |
| Total solids | -- | -- | -- | -- | 57.8 | 67.5 | 70.2 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 0.59 J | 20.2 J | 7 UJ |
| Arsenic | 57 | 93 | -- | -- | 6.74 J | 49 | 14 |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.257 | 0.2 | 0.3 U |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 20.3 | 19.9 | 20.8 |
| Cobalt | -- | -- | -- | -- | 7.1 | 5.43 | 7 |
| Copper | 390 | 390 | -- | -- | 42 | 118 | 51.1 |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 30.8 | 59.6 J | 18 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.095 | 0.051 | 0.12 |
| Molybdenum | -- | -- | -- | -- | 1.08 J | 3.71 J | 1.2 |
| Nickel | -- | -- | -- | -- | 14 | 9.73 | 15 |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 0.8 | 0.5 J | 7 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.236 J | 0.485 | 0.4 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 0.092 | 0.053 | 7 U |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 43.3 | 43.5 | 56.5 |
| Zinc | 410 | 960 | -- | -- | 93.9 | 236 J | 77.9 |

## Table B-4
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 14 | 2 | -- |
| Dibutyltin as ion | -- | -- | -- | -- | 18 | 3.1 | -- |
| Tributyltin as ion | -- | -- | -- | -- | 30 | 3.4 | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | 0.74 J | 1.5 U | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.67 | 1.2 | 3.3 U |
| Acenaphthylene | 66 | 66 | -- | -- | 2.2 | 3.4 | 3.3 U |
| Acenaphthene | 16 | 57 | -- | -- | 0.79 | 0.19 J | 3.3 U |
| Anthracene | 220 | 1200 | -- | -- | 7.2 | 2.4 | 3.3 U |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 23 | 10 | 1.8 J |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 16 | 14 | 1.8 J |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 8.6 | 10 | 3.3 U |
| Chrysene | 110 | 460 | -- | -- | 37 | 16 | 2.4 J |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 1.7 | 1.9 | 3.3 U |
| Fluoranthene | 160 | 1200 | -- | -- | 64 | 14 | 2.4 J |
| Fluorene | 23 | 79 | -- | -- | 1.3 | 0.37 | 3.3 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 9.4 | 10 | 3.3 U |
| Naphthalene | 99 | 170 | -- | -- | 0.72 | 1.9 | 3.3 U |
| Phenanthrene | 100 | 480 | -- | -- | 7.9 | 3.1 | 3.3 U |
| Pyrene | 1000 | 1400 | -- | -- | 47 | 19 | 5.2 J |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 41 | 20 | 5.7 J |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 20 | 11 J | 3.3 U |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 250 | 110 | 19 J |
| **PAHs (µg/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 7 | -- | 58 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 9.3 | 17 | 58 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 31 | 47 | 58 U |
| Acenaphthene | -- | -- | 500 | 730 | 11 | 2.7 J | 58 U |
| Anthracene | -- | -- | 960 | 4400 | 100 | 33 | 58 U |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 320 | 140 | 32 J |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 220 | 190 | 32 J |
| Benzo(e)pyrene | -- | -- | -- | -- | 230 | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 340 | 140 | 58 J |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 230 | 140 | 43 J |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 120 | 140 | 58 U |
| Chrysene | -- | -- | 1400 | 2800 | 510 | 220 | 42 J |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 24 | 27 | 58 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 890 | 190 | 42 J |
| Fluorene | -- | -- | 540 | 1000 | 18 | 5.2 | 58 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 130 | 140 | 58 U |
| Naphthalene | -- | -- | 2100 | 2400 | 10 | 27 | 58 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 110 | 43 | 58 U |
| Pyrene | -- | -- | 2600 | 3300 | 660 | 260 | 92 J |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 570 | 280 | 101 J |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 280 | 158 J | 58 U |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3440 | 1590 | 341 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 3720 | 1740 J | 341 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.72 U | 0.47 U | 0.33 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.72 U | 0.47 U | 0.33 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.72 U | 0.47 U | 0.33 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.072 U | 0.31 | 0.33 |
| **Benzenes (µg/kg dry weight)** | | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 10 U | 6.6 U | 5.9 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 10 U | 100 U | 58 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 10 U | 6.6 U | 5.9 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 10 U | 6.6 U | 5.9 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 1 U | 4.3 | 5.9 |
| Nitrobenzene | -- | -- | -- | -- | 10 U | 100 U | 58 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 7.9 J | 6.4 J | 2.3 J |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.61 J | 0.47 U | 0.33 |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.72 U | 0.47 U | 3.3 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.26 J | 0.47 U | 3.3 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.62 J | 7.1 U | 3.5 |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 1.4 U | 7.1 U | 3.3 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 110 J | 90 J | 40 J |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 8.5 J | 6.6 U | 5.9 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 10 U | 6.6 U | 58 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 3.6 J | 6.6 U | 58 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 8.6 J | 100 U | 62 |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 100 U | 58 U |
| **Phenols (µg/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 10 U | 100 U | 58 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 10 U | 100 U | 290 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 10 U | 100 U | 290 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | ***50 UJ*** | 6.6 U | 5.9 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 U | 2000 U | 580 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | 10 U | 6.6 U | 5.9 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 10 U | 100 U | 58 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 10 U | 100 U | 290 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 10 U | 100 U | 290 U |
| 2-Nitrophenol | -- | -- | -- | -- | 10 U | 100 U | 290 U |
| 4-Nitrophenol | -- | -- | -- | -- | 100 U | 1000 U | 290 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 50 U | 130 | 29 U |
| Phenol | 420 | 1200 | -- | -- | 11 U | 99 J | 58 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 0.79 | 0.32 J | 3.3 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.72 U | 0.47 U | 0.33 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.72 U | 0.47 U | 0.85 UJ |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 20 U | 200 U | 290 U |
| 3-Nitroaniline | -- | -- | -- | -- | 20 U | 200 U | 290 UJ |
| 4-Nitroaniline | -- | -- | -- | -- | 20 U | 200 U | 290 UJ |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 100 U | 1000 U | 290 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | 10 UJ | 100 U | 290 UJ |
| Aniline | -- | -- | -- | -- | 20 UJ | 200 U | 58 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | 10 U | 33 U | 29 U |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | 100 | 73 J |
| Carbazole | -- | -- | -- | -- | 20 | 82 J | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 11 | 4.5 J | 58 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 10 U | 6.6 U | 5.9 U |
| Hexachloroethane | -- | -- | -- | -- | 10 U | 100 U | 58 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 50 UJ | 500 U | 290 U |
| Isophorone | -- | -- | -- | -- | 10 U | 100 U | 58 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 10 U | 33 U | 29 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 50 U | 33 U | 29 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 10 U | 6.6 U | 15 UJ |
| **Ethers (µg/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 10 U | 100 U | 58 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 10 U | 100 U | 58 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 10 U | 100 U | 58 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 10 U | 100 U | 58 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | 7 J | 1.9 U | -- |
| 2,4'-DDE | -- | -- | -- | -- | 1 U | 1.4 U | -- |
| 2,4'-DDT | -- | -- | -- | -- | 5.1 | 4 | -- |
| 4,4'-DDD | -- | -- | -- | -- | 0.86 J | 0.98 U | -- |
| 4,4'-DDE | -- | -- | -- | -- | 1.4 J | 1.6 J | -- |
| 4,4'-DDT | -- | -- | -- | -- | 6.5 | 4.8 | -- |
| Aldrin | -- | -- | -- | -- | 1 U | 0.81 J | -- |
| alpha-Chlordane | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| alpha-BHC | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| beta-BHC | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| delta-BHC | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| gamma-BHC | -- | -- | -- | -- | 0.36 J | 0.98 U | -- |
| gamma-Chlordane | -- | -- | -- | -- | 1 U | 2.3 U | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | 1 U | 3.8 U | -- |
| alpha-Endosulfan | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| beta-Endosulfan | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| Endosulfan sulfate | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| Endrin | -- | -- | -- | -- | 1 U | 0.98 U | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| Endrin ketone | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| Heptachlor | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| Heptachlor epoxide | -- | -- | -- | -- | 4.9 J | 0.98 U | -- |
| Toxaphene | -- | -- | -- | -- | 58 U | 170 U | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | 1 U | 0.81 J | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | 20.9 J | 10.4 J | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | 1 U | 2.3 U | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | 1 U | 0.98 U | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **20** | 4.9 | 1.9 J |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 10 U | 9.8 U | 3.9 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U | 3.9 U |
| Aroclor-1232 | -- | -- | -- | -- | 10 U | 9.8 U | 3.9 U |
| Aroclor-1242 | -- | -- | -- | -- | 10 U | 9.8 U | 3.9 U |
| Aroclor-1248 | -- | -- | -- | -- | 68 | 9.8 U | 8.6 J |
| Aroclor-1254 | -- | -- | -- | -- | 120 | 69 | 12 |
| Aroclor-1260 | -- | -- | -- | -- | 90 | 57 U | 12 J |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 280 | 69 | 33 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | 1180 | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | 120 | -- |
| PCB-081 | -- | -- | -- | -- | -- | 4.7 J | -- |
| PCB-090 | -- | -- | -- | -- | -- | 5170 C | -- |
| PCB-101 | -- | -- | -- | -- | -- | C90 | -- |
| PCB-105 | -- | -- | -- | -- | -- | 1190 | -- |
| PCB-110 | -- | -- | -- | -- | -- | 6150 C | -- |
| PCB-114 | -- | -- | -- | -- | -- | 54.3 | -- |
| PCB-118 | -- | -- | -- | -- | -- | 3640 | -- |
| PCB-123 | -- | -- | -- | -- | -- | 62.6 | -- |
| PCB-126 | -- | -- | -- | -- | -- | 4.97 | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | 5340 C | -- |
| PCB-138 | -- | -- | -- | -- | -- | C129 | -- |
| PCB-153 | -- | -- | -- | -- | -- | 4060 C | -- |
| PCB-156 | -- | -- | -- | -- | -- | 544 C | -- |
| PCB-157 | -- | -- | -- | -- | -- | C156 | -- |
| PCB-167 | -- | -- | -- | -- | -- | 189 | -- |
| PCB-169 | -- | -- | -- | -- | -- | 1.25 U | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | 1620 C | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | 33.2 | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | 7.19 J | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | 1.31 J | -- |

## Table B-4
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | 1270 |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | 508 |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | 66.2 |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | 1.4 |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | 152 |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | 44.5 |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | 24.3 |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | 6.98 |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | 2.36 |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | 0.883 J |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | 5.82 |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | 9.55 |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | 21.3 |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | 0.325 |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | 2.3 U |
| OCDD | -- | -- | -- | -- | -- | -- | 10700 |
| OCDF | -- | -- | -- | -- | -- | -- | 1640 |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | 52.5 J |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | 65.1 J |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | 40.5 J |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | 56 J |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | 54.1 J |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | B5b<br>LDW-B5b-S<br>9/28/2004<br>0-9 cm<br>East Nav. Channel - Glacier NW | C4<br>LDW-C4-S<br>8/27/2004<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-0-1<br>2/21/2006<br>0-1 FT<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.3 | 0.9 | 0.2 |
| Sand (total calc'd) | -- | -- | -- | -- | 74 | 95.7 | 36.9 |
| Silt (total calc'd) | -- | -- | -- | -- | 20.7 | 3.4 | 47.2 |
| Clay (total calc'd) | -- | -- | -- | -- | 4.8 | -- | 15.6 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 25.5 | 3.4 | 62.8 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.06 | 0.48 | 1.53 |
| Total solids | -- | -- | -- | -- | 75 | 80 | 59.5 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | 48.4 |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | 5.91 |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | 880 |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 6 UJ | 6 UJ | 0.3 UJ |
| Arsenic | 57 | 93 | -- | -- | 11 | 6 U | 17.2 |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.2 U | 0.2 U | 0.4 |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 14.5 | 10.6 | 25.4 |
| Cobalt | -- | -- | -- | -- | 6.6 | 5.5 | 9.7 |
| Copper | 390 | 390 | -- | -- | 20.5 | 11.3 | 137 |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 6 | 4 | 53 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.05 U | 0.06 U | 0.15 |
| Molybdenum | -- | -- | -- | -- | 1.7 | 0.6 U | 4.7 |
| Nickel | -- | -- | -- | -- | 12 | 9 | 20 |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 6 U | 6 U | 7 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.4 U | 0.4 U | 0.6 |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 6 U | 6 U | 0.3 U |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 52.7 | 44.6 | 63.5 |
| Zinc | 410 | 960 | -- | -- | 38.4 | 31.2 | 151 |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | 5.5 U |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | 16 |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 1.9 U | -- | 3.8 J |
| Acenaphthylene | 66 | 66 | -- | -- | 1 J | -- | 6.4 U |
| Acenaphthene | 16 | 57 | -- | -- | 1.9 U | -- | 13 |
| Anthracene | 220 | 1200 | -- | -- | 2.5 | -- | 5.7 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 10 | -- | 10 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 10 | -- | 7.2 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 2.5 | -- | 6.4 U |
| Chrysene | 110 | 460 | -- | -- | 12 | -- | 14 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 1 J | -- | 6.4 U |
| Fluoranthene | 160 | 1200 | -- | -- | 19 | -- | 42 |
| Fluorene | 23 | 79 | -- | -- | 1.9 U | -- | 16 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 2.7 | -- | 2.5 |
| Naphthalene | 99 | 170 | -- | -- | 1.9 U | -- | 9.2 |
| Phenanthrene | 100 | 480 | -- | -- | 7.7 | -- | 31 |
| Pyrene | 1000 | 1400 | -- | -- | 29 J | -- | 39 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 22 | -- | 24 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 11 J | -- | 75 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 110 J | -- | 140 |
| **PAHs (µg/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 20 U | 20 U | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 U | 20 U | 58 J |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 11 J | 20 U | 98 U |
| Acenaphthene | -- | -- | 500 | 730 | 20 U | 20 U | 200 |
| Anthracene | -- | -- | 960 | 4400 | 26 | 20 U | 87 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 110 | 20 U | 160 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 110 | 20 U | 110 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 100 | 20 U | 190 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 130 | 20 U | 170 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 26 | 20 U | 98 U |
| Chrysene | -- | -- | 1400 | 2800 | 130 | 20 U | 220 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 11 J | 20 U | 98 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 200 | 20 U | 640 |
| Fluorene | -- | -- | 540 | 1000 | 20 U | 20 U | 240 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 29 | 20 U | 39 |
| Naphthalene | -- | -- | 2100 | 2400 | 20 U | 20 U | 140 |
| Phenanthrene | -- | -- | 1500 | 5400 | 82 | 20 U | 470 |
| Pyrene | -- | -- | 2600 | 3300 | 310 J | 9.9 J | 590 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 230 | 20 U | 360 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 119 J | 20 U | 1140 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 1160 J | 9.9 J | 2120 |
| Total PAH (calc'd) | -- | -- | -- | -- | 1280 J | 9.9 J | 3260 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.56 U | -- | 0.42 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.56 U | -- | 0.42 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.56 U | -- | 0.42 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.56 U** | -- | 0.064 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 5.9 U | 5.8 U | 6.5 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 20 U | 98 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 5.9 U | 5.8 U | 6.5 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 5.9 U | 5.8 U | 6.5 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 5.9 U | 5.8 U | 0.98 U |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 20 U | 98 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 1.9 U | -- | 6.4 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.56 U | -- | 0.42 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 1.9 U | -- | 0.42 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 1.9 U | -- | 0.42 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.6 | -- | 6.4 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 1.9 U | -- | 6.4 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 20 U | 20 U | 98 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 5.9 U | 5.8 U | 6.5 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 20 U | 6.5 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 U | 20 U | 6.5 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 28 | 22 | 98 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 20 U | 98 U |
| **Phenols (µg/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 20 U | 98 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 98 U | 97 U | 490 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 98 U | 97 U | 490 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 5.9 U | 5.8 U | 6.5 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 UJ | 200 UJ | 980 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 5.9 U | 5.8 U | 6.5 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | 20 U | 98 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 98 U | 97 U | 490 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 98 U | 97 U | 490 U |
| 2-Nitrophenol | -- | -- | -- | -- | 98 U | 97 U | 490 U |
| 4-Nitrophenol | -- | -- | -- | -- | 98 U | 97 U | 490 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 29 U | 29 U | 32 U |
| Phenol | 420 | 1200 | -- | -- | 20 U | 20 U | 98 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 1.9 U | -- | 9.2 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.56 U | -- | 0.064 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.4 UJ | -- | 0.42 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 98 U | 97 U | 490 U |
| 3-Nitroaniline | -- | -- | -- | -- | 98 UJ | 97 UJ | 490 U |
| 4-Nitroaniline | -- | -- | -- | -- | 98 UJ | 97 UJ | 490 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 98 UJ | 97 UJ | 490 U |
| 4-Chloroaniline | -- | -- | -- | -- | 98 UJ | 97 UJ | 490 U |
| Aniline | -- | -- | -- | -- | 20 UJ | 20 UJ | 98 U |
| Benzyl alcohol | 57 | 73 | -- | -- | 29 U | 29 U | 32 U |
| Benzoic acid | 650 | 650 | -- | -- | 64 J | 68 J | 65 U |
| Carbazole | -- | -- | -- | -- | -- | -- | 160 |
| Dibenzofuran | -- | -- | 540 | 700 | 20 U | 20 U | 140 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 5.9 U | 5.8 U | 0.98 U |
| Hexachloroethane | -- | -- | -- | -- | 20 U | 20 U | 98 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 98 U | 97 U | 490 U |
| Isophorone | -- | -- | -- | -- | 20 U | 20 U | 98 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 29 U | 29 U | 32 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 29 U | 29 U | 32 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 15 UJ | 5.8 UJ | 6.5 U |
| **Ethers (µg/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 20 U | 20 U | 98 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | 20 U | 98 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 20 U | 20 U | 98 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 20 U | 20 U | 98 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | 2 U |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | 2 U |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | 2 U |
| Aldrin | -- | -- | -- | -- | -- | -- | 0.98 U |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | 0.98 U |
| alpha-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| beta-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| delta-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| gamma-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | 0.98 U |
| Oxychlordane | -- | -- | -- | -- | -- | -- | 2 U |
| Dieldrin | -- | -- | -- | -- | -- | -- | 2 U |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | 0.98 U |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | 2 U |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | 2 U |
| Endrin | -- | -- | -- | -- | -- | -- | 2 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | 2 UJ |
| Endrin ketone | -- | -- | -- | -- | -- | -- | 2 U |
| Heptachlor | -- | -- | -- | -- | -- | -- | 0.98 U |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | 0.98 U |
| Toxaphene | -- | -- | -- | -- | -- | -- | 98 U |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | 2 U |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | 2 U |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | 2 U |
| **Herbicides (µg/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | 9.8 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 0.37 UJ | -- | 1.6 J |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 3.9 UJ | 3.9 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 3.9 UJ | 3.9 U | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 3.9 UJ | 3.9 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 3.9 UJ | 3.9 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 3.9 UJ | 3.9 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 3.9 UJ | 3.9 U | 24 J |
| Aroclor-1260 | -- | -- | -- | -- | 3.9 UJ | 3.9 U | 20 U |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 3.9 UJ | 3.9 U | 24 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | 31.1 | 2.56 | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | 11.1 | 0.743 J | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | 1.47 | 0.093 U | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | 0.106 U | 0.044 U | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | 1.48 | 0.176 J | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | 0.891 | 0.103 J | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | 0.311 J | 0.044 U | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | 0.331 J | 0.066 U | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | 0.044 U | 0.044 U | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | 0.064 J | 0.044 U | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | 0.093 J | 0.044 U | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | 0.194 J | 0.044 U | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | 0.284 J | 0.067 J | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | 0.053 U | 0.044 U | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | 0.074 J | 0.044 U | -- |
| OCDD | -- | -- | -- | -- | 207 | 20.9 | -- |
| OCDF | -- | -- | -- | -- | 65.5 | 2.08 | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | 0.887 J | 0.178 J | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | 0.884 J | 0.142 J | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | 0.664 J | 0.129 J | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | 1.04 J | 0.157 J | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | 1.03 J | 0.147 J | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC29<br>LDW-SC29-1-2<br>2/21/2006<br>1-2 FT<br>West Nav. Channel - Glacier NW | LDW-SC29<br>LDW-SC29-2-3.6<br>2/21/2006<br>2-3.6 FT<br>West Nav. Channel - Glacier NW | LDW-SS55<br>LDW-SS55-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 5.9 | 0.1 | 1 |
| Sand (total calc'd) | -- | -- | -- | -- | 72.8 | 30.8 | 32.8 |
| Silt (total calc'd) | -- | -- | -- | -- | 14.2 | 51.8 | 47 |
| Clay (total calc'd) | -- | -- | -- | -- | 7.1 | 17.2 | 19.2 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 21.3 | 69 | 66.2 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.13 | 1.73 | 1.78 |
| Total solids | -- | -- | -- | -- | 62.4 | 50 | 50.7 |
| Total solids (preserved) | -- | -- | -- | -- | 62 | 46.2 | 53.8 |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | 1.83 | 5.63 | 2.82 |
| Sulfides (total) | -- | -- | -- | -- | 37 | 130 | 250 |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 2.2 J | 0.4 UJ | 0.4 UJ |
| Arsenic | 57 | 93 | -- | -- | ***161*** | 35.4 | 33.9 |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.6 | 0.7 | 1 |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 41.2 | 43 | 45 |
| Cobalt | -- | -- | -- | -- | 18.7 | 11.3 | 11.4 |
| Copper | 390 | 390 | -- | -- | 365 | 179 | 146 |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 160 | 138 | 287 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.14 | 0.31 | 0.29 |
| Molybdenum | -- | -- | -- | -- | 23 | 5 | 5.5 |
| Nickel | -- | -- | -- | -- | 16 | 23 | 28 |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 8 U | 10 U | 9 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.9 | 0.9 | 1.1 |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 0.3 U | 0.4 U | 0.4 U |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 59.3 | 72.6 | 68.7 |
| Zinc | 410 | 960 | -- | -- | **607** | 262 | 281 |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | 23 | -- | 6.9 |
| Tributyltin as ion | -- | -- | -- | -- | 96 | -- | 28 |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 8.7 U | 8.1 U | 8.4 U |
| Acenaphthylene | 66 | 66 | -- | -- | 6.8 J | 8.1 U | 8.4 U |
| Acenaphthene | 16 | 57 | -- | -- | 8.7 U | 8.1 U | 8.4 U |
| Anthracene | 220 | 1200 | -- | -- | 5 J | 8.1 U | 8.4 U |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 20 | 11 | 8.4 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 29 | 13 | 10 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 12 | 5.7 J | 4.8 J |
| Chrysene | 110 | 460 | -- | -- | 32 | 17 | 16 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 8.7 U | 8.1 U | 8.4 U |
| Fluoranthene | 160 | 1200 | -- | -- | 35 | 24 | 18 |
| Fluorene | 23 | 79 | -- | -- | 8.7 U | 8.1 U | 8.4 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 12 | 5.8 J | 4.5 J |
| Naphthalene | 99 | 170 | -- | -- | 8.7 U | 8.1 U | 8.4 U |
| Phenanthrene | 100 | 480 | -- | -- | 14 | 11 | 9.6 |
| Pyrene | 1000 | 1400 | -- | -- | 47 | 34 | 22 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 52 | 34 | 25 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 26 J | 11 | 9.6 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 240 | 140 J | 110 J |
| **PAHs (µg/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 98 U | 140 U | 150 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 77 J | 140 U | 150 U |
| Acenaphthene | -- | -- | 500 | 730 | 98 U | 140 U | 150 U |
| Anthracene | -- | -- | 960 | 4400 | 57 J | 140 U | 150 U |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 230 | 190 | 150 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 330 | 230 | 180 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 280 | 280 | 220 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 310 | 300 | 220 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 130 | 99 J | 86 J |
| Chrysene | -- | -- | 1400 | 2800 | 360 | 290 | 290 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 98 U | 140 U | 150 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 400 | 420 | 320 |
| Fluorene | -- | -- | 540 | 1000 | 98 U | 140 U | 150 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 130 | 100 J | 80 J |
| Naphthalene | -- | -- | 2100 | 2400 | 98 U | 140 U | 150 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 160 | 190 | 170 |
| Pyrene | -- | -- | 2600 | 3300 | 530 | 580 | 400 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 590 | 580 | 440 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 290 J | 190 | 170 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2700 | 2490 J | 1950 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 2990 J | 2680 J | 2120 J |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.58 U | ***8.1 U*** | ***8.4 U*** |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.58 U | **8.1 U** | **8.4 U** |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.58 U | ***8.1 U*** | ***8.4 U*** |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.58 U** | ***8.1 U*** | 0.055 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6.5 U | 140 U | 150 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6.5 U | 140 U | 150 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6.5 U | 140 U | 150 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 6.5 U | 140 U | 0.98 U |
| Nitrobenzene | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 19 | 17 | 16 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.58 U | **8.1 U** | **8.4 U** |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.58 U | 8.1 U | 8.4 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.58 U | 8.1 U | 8.4 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 8.7 U | 8.1 U | 8.4 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 8.7 U | 8.1 U | 8.4 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 210 | 290 | 280 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 6.5 U | 140 U | 150 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 6.5 U | 140 U | 150 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 6.5 U | 140 U | 150 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 98 U | 140 U | 150 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 98 U | 140 U | 150 U |
| **Phenols (µg/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6.5 U | ***140 U*** | ***150 U*** |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 980 U | 1400 U | 1500 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6.5 U | ***140 U*** | ***150 U*** |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 98 U | 140 U | 150 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| 2-Nitrophenol | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| 4-Nitrophenol | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 33 U | ***720 U*** | ***740 U*** |
| Phenol | 420 | 1200 | -- | -- | 98 U | 140 U | 150 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 8.7 U | 8.1 U | 8.4 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.58 U | ***8.1 U*** | 0.055 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.58 U | 8.1 U | 8.4 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| 3-Nitroaniline | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| 4-Nitroaniline | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| 4-Chloroaniline | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| Aniline | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| Benzyl alcohol | 57 | 73 | -- | -- | 33 U | ***140 U*** | ***150 U*** |
| Benzoic acid | 650 | 650 | -- | -- | 65 U | ***1400 U*** | ***1500 U*** |
| Carbazole | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| Dibenzofuran | -- | -- | 540 | 700 | 98 U | 140 U | 150 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6.5 U | 140 U | 0.98 U |
| Hexachloroethane | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 490 U | 720 U | 740 U |
| Isophorone | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 33 U | 720 U | 740 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 33 U | 720 U | 740 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 6.5 U | 140 U | 150 U |
| **Ethers (µg/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 98 U | 140 U | 150 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | 2 U |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | 12 U |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | 8.7 U |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | 2 U |
| Aldrin | -- | -- | -- | -- | -- | -- | 0.98 U |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | 0.98 U |
| alpha-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| beta-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| delta-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| gamma-BHC | -- | -- | -- | -- | -- | -- | 0.98 U |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | 0.98 U |
| Oxychlordane | -- | -- | -- | -- | -- | -- | 2 U |
| Dieldrin | -- | -- | -- | -- | -- | -- | 2 U |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | 0.98 U |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | 2 U |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | 2 U |
| Endrin | -- | -- | -- | -- | -- | -- | 2 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | 3.2 UJ |
| Endrin ketone | -- | -- | -- | -- | -- | -- | 2 U |
| Heptachlor | -- | -- | -- | -- | -- | -- | 1.7 U |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | 0.98 U |
| Toxaphene | -- | -- | -- | -- | -- | -- | 98 U |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | 2 U |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | 12 U |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | 2 U |
| **Herbicides (µg/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | 9.8 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | ***66 J*** | **43** | **15** |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 100 U | 77 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 100 U | 77 U | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 100 U | 77 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 100 U | 77 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 100 U | 160 | 84 |
| Aroclor-1254 | -- | -- | -- | -- | 500 J | 350 | 120 |
| Aroclor-1260 | -- | -- | -- | -- | 250 J | 240 | 59 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 750 J | 750 | 260 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | 10000 | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | 716 | -- | -- |
| PCB-081 | -- | -- | -- | -- | 80.9 J | -- | -- |
| PCB-090 | -- | -- | -- | -- | 56800 C | -- | -- |
| PCB-101 | -- | -- | -- | -- | C90 | -- | -- |
| PCB-105 | -- | -- | -- | -- | 17600 | -- | -- |
| PCB-110 | -- | -- | -- | -- | 60300 C | -- | -- |
| PCB-114 | -- | -- | -- | -- | 971 | -- | -- |
| PCB-118 | -- | -- | -- | -- | 41800 | -- | -- |
| PCB-123 | -- | -- | -- | -- | 938 | -- | -- |
| PCB-126 | -- | -- | -- | -- | 91.7 J | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | 54500 C | -- | -- |
| PCB-138 | -- | -- | -- | -- | C129 | -- | -- |
| PCB-153 | -- | -- | -- | -- | 37900 C | -- | -- |
| PCB-156 | -- | -- | -- | -- | 7290 C | -- | -- |
| PCB-157 | -- | -- | -- | -- | C156 | -- | -- |
| PCB-167 | -- | -- | -- | -- | 2180 | -- | -- |
| PCB-169 | -- | -- | -- | -- | 28.5 U | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | 16900 C | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 338 | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | 56.1 J | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | 19.6 J | -- | -- |

## Table B-4
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | 73700 | 14900 | 11300 |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | 40300 | 4040 | 4710 |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | 3720 | 487 | 756 |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | 124 | 33.7 J | 31.6 J |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | 2530 | 895 | 1670 |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | 3400 | 350 | 480 |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | 365 | 151 | 284 |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | 315 | 95.2 | 99.6 |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | 33.8 J | 10.6 J | 21.7 J |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | 34.5 J | 16.7 J | 19.9 J |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | 69.3 | 27.8 J | 56.9 |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | 302 J | 62 J | 121 J |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | 230 | 95.9 | 181 |
| 2,3,7,8-TCDD | -- | -- | -- | -- | 4.57 J | 4.17 J | 9.28 |
| 2,3,7,8-TCDF | -- | -- | -- | -- | 14.8 | 8.64 | 13.6 |
| OCDD | -- | -- | -- | -- | 241000 | 172000 | 124000 |
| OCDF | -- | -- | -- | -- | 93700 | 18700 | 9630 |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | 1230 J | 334 J | 535 J |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS56<br>LDW-SS56-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS57<br>LDW-SS57-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SS58<br>LDW-SS58-010<br>1/24/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 39.6 | 0.6 | 3.6 |
| Sand (total calc'd) | -- | -- | -- | -- | 28.4 | 57.3 | 81.2 |
| Silt (total calc'd) | -- | -- | -- | -- | 23.8 | 31 | 10.9 |
| Clay (total calc'd) | -- | -- | -- | -- | 8.3 | 11.2 | 4.4 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 32.1 | 42 | 15.3 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.07 | 1.82 | 1.75 |
| Total solids | -- | -- | -- | -- | 52.5 | 57.5 | 70.1 |
| Total solids (preserved) | -- | -- | -- | -- | 49 | 49.4 | 70 |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | 8.53 | 3.94 | 3.91 |
| Sulfides (total) | -- | -- | -- | -- | 570 | 360 | 32 |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 0.4 U | 0.3 | 0.3 U |
| Arsenic | 57 | 93 | -- | -- | 20.7 | 38.1 | 5.6 |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.5 | 0.3 | 0.3 U |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 43.5 | 34.3 | 16 |
| Cobalt | -- | -- | -- | -- | 11 | 9 | 4.6 |
| Copper | 390 | 390 | -- | -- | 102 J | 226 J | 31.8 J |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 60 | 75 | 22 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.19 | 0.23 | 0.08 |
| Molybdenum | -- | -- | -- | -- | 3.1 | 5.7 | 1.4 |
| Nickel | -- | -- | -- | -- | 33 | 14 | 11 |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 9 U | 9 U | 7 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.6 U | 0.9 | 0.4 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 0.4 U | 0.3 U | 0.3 U |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 67.4 | 54.9 | 38.1 |
| Zinc | 410 | 960 | -- | -- | 219 J | 214 J | 63.3 J |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.97 U | 2.4 U | 1.1 U |
| Acenaphthylene | 66 | 66 | -- | -- | 0.97 U | 4.5 | 1.1 U |
| Acenaphthene | 16 | 57 | -- | -- | 0.97 U | 2.4 U | 1.4 |
| Anthracene | 220 | 1200 | -- | -- | 3.6 | 4.4 | 5.1 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 9.7 | 15 | 15 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 14 | 24 | 13 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 5.3 | 7.1 | 3.1 |
| Chrysene | 110 | 460 | -- | -- | 19 | 26 | 30 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.2 | 2.4 U | 1.6 |
| Fluoranthene | 160 | 1200 | -- | -- | 25 | 31 | 42 |
| Fluorene | 23 | 79 | -- | -- | 0.97 U | 2.4 U | 1.6 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 15 | 11 | 4.2 |
| Naphthalene | 99 | 170 | -- | -- | 0.97 U | 2.5 | 1.1 U |
| Phenanthrene | 100 | 480 | -- | -- | 8.2 | 12 | 10 |
| Pyrene | 1000 | 1400 | -- | -- | 17 | 30 | 24 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 42 | 46 | 39 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 12 | 24 | 18 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 150 | 190 | 170 |
| **PAHs (µg/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 U | 44 U | 20 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | 81 | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 20 U | 44 U | 25 |
| Anthracene | -- | -- | 960 | 4400 | 75 | 80 | 90 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 200 | 270 | 260 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 290 | 440 | 220 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 420 | 440 | 460 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 450 | 400 | 230 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 110 | 130 | 54 |
| Chrysene | -- | -- | 1400 | 2800 | 400 | 470 | 520 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 45 | 44 U | 28 |
| Fluoranthene | -- | -- | 1700 | 2500 | 520 | 570 | 740 |
| Fluorene | -- | -- | 540 | 1000 | 20 U | 44 U | 28 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 310 | 200 | 74 |
| Naphthalene | -- | -- | 2100 | 2400 | 20 U | 45 | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 170 | 220 | 180 |
| Pyrene | -- | -- | 2600 | 3300 | 360 | 540 | 420 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 870 | 840 | 690 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 250 | 430 | 320 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3110 | 3460 | 3010 |
| Total PAH (calc'd) | -- | -- | -- | -- | 3350 | 3890 | 3330 |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.97 U | ***2.3 U*** | 0.38 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.97 U | 2.3 U | 0.38 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.47 UJ | ***2.3 U*** | 0.38 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.047 U | 0.12 JN | 0.055 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | 42 U | 6.6 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 44 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | 42 U | 6.6 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 9.8 UJ | 42 U | 6.6 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 0.98 U | 2.1 JN | 0.97 U |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 44 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 26 | 9.3 | 5.7 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 3.9 | 2.3 U | 0.38 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.97 U | 2.3 U | 0.38 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.97 U | 2.3 U | 0.38 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.97 U | 2.4 U | 1.1 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.97 U | 2.4 U | 1.1 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 530 | 170 | 100 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 80 | 42 U | 6.6 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 42 U | 6.6 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 U | 42 U | 6.6 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 U | 44 U | 20 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 44 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 44 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 U | 24 UJ | 6.6 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 U | 440 U | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 U | 42 U | 6.6 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | 44 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| 2-Nitrophenol | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| 4-Nitrophenol | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 98 U | **410** | 33 U |
| Phenol | 420 | 1200 | -- | -- | 49 U | 51 U | 20 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 0.97 U | 2.4 U | 1.1 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.047 U | 0.053 U | 0.055 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.97 U | 2.3 U | 0.38 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| 3-Nitroaniline | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| 4-Nitroaniline | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| 4-Chloroaniline | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| Aniline | -- | -- | -- | -- | 20 U | 44 U | 20 U |
| Benzyl alcohol | 57 | 73 | -- | -- | 20 U | 44 U | 20 U |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | 420 U | 66 U |
| Carbazole | -- | -- | -- | -- | 40 | 44 U | 38 |
| Dibenzofuran | -- | -- | 540 | 700 | 20 U | 44 U | 20 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 0.98 U | 0.97 U | 0.97 U |
| Hexachloroethane | -- | -- | -- | -- | 20 U | 44 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 99 U | 220 U | 98 U |
| Isophorone | -- | -- | -- | -- | 20 U | 44 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 98 U | 210 U | 33 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | 98 U | 210 U | 33 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 20 U | 42 U | 6.6 U |
| **Ethers (µg/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 20 U | 44 U | 20 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | 44 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 20 U | 44 U | 20 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 20 U | 44 U | 20 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | 2 U | 1.9 U | 2 U |
| 2,4'-DDE | -- | -- | -- | -- | 2 U | 1.9 U | 2 U |
| 2,4'-DDT | -- | -- | -- | -- | 2 U | 1.9 U | 2 U |
| 4,4'-DDD | -- | -- | -- | -- | 2 U | 1.9 U | 2 U |
| 4,4'-DDE | -- | -- | -- | -- | 4.1 U | 1.9 U | 2.6 U |
| 4,4'-DDT | -- | -- | -- | -- | 8.9 U | 1.9 U | 2 U |
| Aldrin | -- | -- | -- | -- | 0.98 U | 0.97 U | 0.97 U |
| alpha-Chlordane | -- | -- | -- | -- | 0.98 U | 0.97 U | 0.97 U |
| alpha-BHC | -- | -- | -- | -- | 0.98 U | 0.97 U | 0.97 U |
| beta-BHC | -- | -- | -- | -- | 0.98 U | 0.97 U | 0.97 U |
| delta-BHC | -- | -- | -- | -- | 0.98 U | 0.97 U | 0.97 U |
| gamma-BHC | -- | -- | -- | -- | 0.98 U | 1.9 U | 0.97 U |
| gamma-Chlordane | -- | -- | -- | -- | 3.9 U | 0.97 U | 0.97 U |
| Oxychlordane | -- | -- | -- | -- | 2 U | 1.9 U | 2 U |
| Dieldrin | -- | -- | -- | -- | 2 U | 1.9 U | 2 U |
| alpha-Endosulfan | -- | -- | -- | -- | 0.98 U | 0.97 U | 0.97 U |
| beta-Endosulfan | -- | -- | -- | -- | 2 U | 10 U | 2 U |
| Endosulfan sulfate | -- | -- | -- | -- | 2 U | 1.9 U | 2 U |
| Endrin | -- | -- | -- | -- | 2 U | 1.9 U | 2 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | 2 U | 3.3 U | 2 U |
| Endrin ketone | -- | -- | -- | -- | 2 U | 1.9 U | 2 U |
| Heptachlor | -- | -- | -- | -- | 1.9 U | 0.97 U | 0.97 U |
| Heptachlor epoxide | -- | -- | -- | -- | 0.98 U | 0.97 U | 0.97 U |
| Toxaphene | -- | -- | -- | -- | 98 U | 97 U | 97 U |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | 2 U | 1.9 U | 2 U |
| DDTs (total-calc'd) | -- | -- | -- | -- | 8.9 U | 1.9 U | 2.6 U |
| Total Chlordane (calc'd) | -- | -- | -- | -- | 3.9 U | 1.9 U | 3.3 U |
| **Herbicides (µg/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | 9.8 U | 9.7 U | 9.7 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 2.6 | **45** | 6.1 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 97 U | 19 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 97 U | 19 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 97 U | 19 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 97 U | 19 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 97 U | 28 |
| Aroclor-1254 | -- | -- | -- | -- | 27 | 490 | 50 |
| Aroclor-1260 | -- | -- | -- | -- | 26 | 320 | 29 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 53 | 810 | 107 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-4
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | 1880 | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | 288 | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | 24.2 J | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | 11.4 J | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | 30.5 | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | 65.3 | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | 7.2 J | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | 26.4 | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | 0.568 J | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | 5.24 J | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | 1.08 J | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | 5.38 J | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | 4.71 J | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | 1.04 U | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | 1.9 | -- | -- |
| OCDD | -- | -- | -- | -- | 15600 | -- | -- |
| OCDF | -- | -- | -- | -- | 1030 | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | 27.4 J | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS59<br>LDW-SS59R2-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB4a<br>LDW-SSB4a-010<br>3/14/2005<br>0-10 cm<br>West Nav. Channel - Glacier NW | LDW-SSB5b<br>LDW-SSB5b-010<br>3/14/2005<br>0-10 cm<br>East Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. | | | | | | |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. | | | | | | |
| UJ | The analyte was not detected at the estimated detection limit. | | | | | | |
| C | The metal analyte is estimated below the reporting limit. | | | | | | |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. | | | | | | |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. | | | | | | |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 2.4 | 0.01 U | 61 |
| Sand (total calc'd) | -- | -- | -- | -- | 76 | 9.9 | 15.6 |
| Silt (total calc'd) | -- | -- | -- | -- | 15.8 | 65 | 16.8 J |
| Clay (total calc'd) | -- | -- | -- | -- | 6.3 | 25 | 7.3 J |
| Fines (percent silt+clay) | -- | -- | -- | -- | 22.1 | 90 | 24.1 J |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 0.86 | 2.18 | 2.78 |
| Total solids | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | 10000 | 27000 | 20000 |
| Antimony | -- | -- | -- | -- | 10 UJ | 8 J | 8 J |
| Arsenic | 57 | 93 | -- | -- | 7.3 | 17 | 32 |
| Barium | -- | -- | -- | -- | 45 | 91 | 89 |
| Beryllium | -- | -- | -- | -- | 0.19 | 0.49 J | 0.45 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.3 | 0.3 | 0.65 |
| Calcium | -- | -- | -- | -- | 15000 J | 7400 | 15000 |
| Chromium | 260 | 270 | -- | -- | 26 J | 38 | 39 |
| Cobalt | -- | -- | -- | -- | 5 | 12 | 10 |
| Copper | 390 | 390 | -- | -- | 50 J | 100 | 120 |
| Iron | -- | -- | -- | -- | 18000 J | 37000 | 31000 |
| Lead | 450 | 530 | -- | -- | 46 J | 47 J | 83 |
| Magnesium | -- | -- | -- | -- | 4300 | 10000 | 17000 |
| Manganese | -- | -- | -- | -- | 190 | 390 | 360 |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.07 | 0.2 | 0.05 U |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | 14 | 27 | 31 |
| Potassium | -- | -- | -- | -- | 1300 | 3300 | 2500 |
| Selenium | -- | -- | -- | -- | 8 J | 1 U | 1 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.17 | 0.31 | 0.35 J |
| Sodium | -- | -- | -- | -- | 5700 | 14000 | 13000 |
| Thallium | -- | -- | -- | -- | 0.08 | 0.21 J | 0.11 |
| Tin | -- | -- | -- | -- | 7 | 49 J | 140 J |
| Vanadium | -- | -- | -- | -- | 44 | 79 | 66 |
| Zinc | 410 | 960 | -- | -- | 81 | 160 | 280 |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 2.3 | 0.92 U | 0.72 U |
| Acenaphthylene | 66 | 66 | -- | -- | 2.3 U | 0.92 U | 0.72 U |
| Acenaphthene | 16 | 57 | -- | -- | 14 | 0.92 | 1.1 |
| Anthracene | 220 | 1200 | -- | -- | 15 | 4.1 | 4.3 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 35 | 16 | 17 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 22 | 17 | 28 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 13 | 12 | 22 |
| Chrysene | 110 | 460 | -- | -- | 44 | 25 | 28 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 4.7 | 3.2 | 5 |
| Fluoranthene | 160 | 1200 | -- | -- | 130 | 34 | 40 |
| Fluorene | 23 | 79 | -- | -- | 10 | 1.8 | 1.4 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 14 | 13 | 24 |
| Naphthalene | 99 | 170 | -- | -- | 2.3 | 0.92 U | 0.72 U |
| Phenanthrene | 100 | 480 | -- | -- | 65 | 11 | 15 |
| Pyrene | 1000 | 1400 | -- | -- | 95 | 32 | 36 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 55 | 39 | 61 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 110 | 18 | 22 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 410 | 190 | 260 |
| **PAHs (µg/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 | 20 U | 20 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 120 | 20 | 30 |
| Anthracene | -- | -- | 960 | 4400 | 130 | 90 | 120 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 300 | 350 | 480 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 190 | 360 | 770 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 260 | 460 | 1000 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 210 | 390 | 740 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 110 | 260 | 600 |
| Chrysene | -- | -- | 1400 | 2800 | 380 | 550 | 790 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 40 | 70 | 140 |
| Fluoranthene | -- | -- | 1700 | 2500 | 1100 | 750 | 1100 |
| Fluorene | -- | -- | 540 | 1000 | 90 | 40 | 40 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 120 | 290 | 680 |
| Naphthalene | -- | -- | 2100 | 2400 | 20 | 20 U | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 560 | 240 | 430 |
| Pyrene | -- | -- | 2600 | 3300 | 820 | 700 | 1000 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 470 | 850 | 1700 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 920 | 390 | 620 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3500 | 4180 | 7300 |
| Total PAH (calc'd) | -- | -- | -- | -- | 4500 | 4570 | 7900 |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | ***2.3 U*** | 0.92 U | 0.72 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 2.3 U | 0.92 U | 0.72 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | ***2.3 U*** | **0.92 U** | 0.72 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | ***2.3 U*** | **0.92 U** | **0.72 U** |
| **Benzenes (µg/kg dry weight)** | | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | 20 U | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | 20 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 20 U | 20 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 20 U | 20 U | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 13 | 26 | 34 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 2.3 U | 3.2 | 3.6 |
| Diethyl phthalate | 61 | 110 | -- | -- | 2.3 U | 0.92 U | 0.72 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 2.3 U | 0.92 | 0.72 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.3 U | 0.92 U | 0.72 |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.3 U | 0.92 U | 0.72 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 110 | 560 | 940 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 20 U | 70 | 100 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 20 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 U | 20 | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 U | 20 U | 20 |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 20 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 40 U | 40 U | 40 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 U | 20 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 U | 20 U | 20 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 100 UJ | 100 UJ | 100 U |
| Phenol | 420 | 1200 | -- | -- | 40 | 320 | 20 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 7 | 0.92 | 0.72 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 2.3 U | 0.92 U | 0.72 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 4.7 U | 1.8 U | 1.4 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 200 U | 200 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 200 U | 200 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| Aniline | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 50 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | 200 U | 200 U |
| Carbazole | -- | -- | -- | -- | 30 | 40 | 80 |
| Dibenzofuran | -- | -- | 540 | 700 | 60 | 20 | 20 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 20 U | 20 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 100 UJ | 100 U | 100 U |
| Isophorone | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 40 U | 40 U | 40 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 40 U | 40 U | 40 U |
| **Ethers (µg/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 40 U | 40 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 5.2 | 5.6 | 5.8 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 UJ | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 40 U | 40 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 24 | 60 | 90 |
| Aroclor-1260 | -- | -- | -- | -- | 21 | 63 | 71 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 45 | 123 | 161 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-028 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 J |
| PCB-044 | -- | -- | -- | -- | 1000 UJ | 1000 J | 1000 J |
| PCB-055 | -- | -- | -- | -- | 1000 J | 3000 J | 2000 J |
| PCB-066 | -- | -- | -- | -- | 2000 UJ | 5000 | 5000 J |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-081 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 UJ |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 2000 J | 5000 J | 4000 J |
| PCB-105 | -- | -- | -- | -- | 1000 UJ | 1000 | 1000 J |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ |
| PCB-118 | -- | -- | -- | -- | 2000 J | 4000 | 3000 J |
| PCB-123 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ |
| PCB-126 | -- | -- | -- | -- | 1000 UJ | 1000 | 1000 UJ |
| PCB-128 | -- | -- | -- | -- | 1000 UJ | 1000 J | 1000 J |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 3000 J | 8000 | 8000 J |
| PCB-153 | -- | -- | -- | -- | 2000 J | 7000 | 5000 J |
| PCB-156 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ |
| PCB-157 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ |
| PCB-167 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ |
| PCB-169 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 UJ |
| PCB-170 | -- | -- | -- | -- | 1000 UJ | 2000 | 3000 J |
| PCB-180 | -- | -- | -- | -- | 2000 J | 4000 | 4000 J |
| PCB-187 | -- | -- | -- | -- | 1000 J | 3000 | 3000 J |
| PCB-189 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ |
| PCB-195 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ |
| PCB-206 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ |
| PCB-209 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-4
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

## Table B-4

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR091<br>SD-DR091-0000<br>8/31/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR122<br>SD-DR122-0000<br>9/14/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR124<br>SD-DR124-0000<br>9/15/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 2.1 J | 1.1 | 0.01 U |
| Sand (total calc'd) | -- | -- | -- | -- | 13.8 J | 28 | 11.4 J |
| Silt (total calc'd) | -- | -- | -- | -- | 54 | 54 | 63 |
| Clay (total calc'd) | -- | -- | -- | -- | 29 | 16.7 | 27 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 84 | 70 | 90 |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 3.09 | 1.84 | 2.87 |
| Total solids | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | 19000 | 18000 | 27000 |
| Antimony | -- | -- | -- | -- | 6 J | 7 J | 10 UJ |
| Arsenic | 57 | 93 | -- | -- | 13 | 26 | 8.6 |
| Barium | -- | -- | -- | -- | 80 | 120 | 93 |
| Beryllium | -- | -- | -- | -- | 0.38 | 0.47 | 0.49 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.41 | 0.64 | 0.27 |
| Calcium | -- | -- | -- | -- | 6300 | 12000 | 6400 |
| Chromium | 260 | 270 | -- | -- | 30 | 36 | 35 |
| Cobalt | -- | -- | -- | -- | 9 | 10 | 13 |
| Copper | 390 | 390 | -- | -- | 89 | 77 | 48 |
| Iron | -- | -- | -- | -- | 29000 J | 26000 | 33000 J |
| Lead | 450 | 530 | -- | -- | 46 | 65 | 17 |
| Magnesium | -- | -- | -- | -- | 8600 | 6800 | 9200 |
| Manganese | -- | -- | -- | -- | 310 | 270 | 520 |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Mercury | 0.41 | 0.59 | -- | -- | 0.24 | 0.22 | 0.13 |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- |
| Nickel | -- | -- | -- | -- | 19 | 22 | 26 |
| Potassium | -- | -- | -- | -- | 2900 | 2600 | 3000 |
| Selenium | -- | -- | -- | -- | 0.8 J | 8 | 18 J |
| Silver | 6.1 | 6.1 | -- | -- | 0.35 | 0.58 | 0.24 |
| Sodium | -- | -- | -- | -- | 17000 | 11000 | 10000 |
| Thallium | -- | -- | -- | -- | 0.12 | 0.11 | 0.09 |
| Tin | -- | -- | -- | -- | 14 | 6 | 5 |
| Vanadium | -- | -- | -- | -- | 55 | 51 | 77 |
| Zinc | 410 | 960 | -- | -- | 140 | 180 | 86 |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.65 | 1.6 | 0.7 U |
| Acenaphthylene | 66 | 66 | -- | -- | 0.65 U | 1.1 U | 0.7 U |
| Acenaphthene | 16 | 57 | -- | -- | 2.6 | 6 | 0.7 U |
| Anthracene | 220 | 1200 | -- | -- | 5.8 | 4.9 | 0.7 U |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 16 | 17 | 1.4 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 14 | 16 | 1.4 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 8.4 | 9.2 | 1.4 |
| Chrysene | 110 | 460 | -- | -- | 23 | 22 | 2.1 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.3 | 2.7 | 0.7 U |
| Fluoranthene | 160 | 1200 | -- | -- | 42 | 43 | 3.5 |
| Fluorene | 23 | 79 | -- | -- | 2.6 | 5.4 | 0.7 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 9.4 | 8.7 | 1.4 |
| Naphthalene | 99 | 170 | -- | -- | 0.65 | 3.8 | 0.7 U |
| Phenanthrene | 100 | 480 | -- | -- | 15 | 22 | 1.4 |
| Pyrene | 1000 | 1400 | -- | -- | 28 | 53 | 3.1 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 31 | 33 | 3.1 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 27 | 42 | 1.4 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 170 | 210 | 17 |
| **PAHs (µg/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 | 30 | 20 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 80 | 110 | 20 U |
| Anthracene | -- | -- | 960 | 4400 | 180 | 90 | 20 U |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 490 | 310 | 40 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 420 | 300 | 40 |
| Benzo(e)pyrene | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 600 | 320 | 50 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 370 | 290 | 40 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 260 | 170 | 40 |
| Chrysene | -- | -- | 1400 | 2800 | 720 | 410 | 60 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 70 | 50 | 20 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 1300 | 800 | 100 |
| Fluorene | -- | -- | 540 | 1000 | 80 | 100 | 20 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 290 | 160 | 40 |
| Naphthalene | -- | -- | 2100 | 2400 | 20 | 70 | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 460 | 400 | 40 |
| Pyrene | -- | -- | 2600 | 3300 | 880 | 970 | 90 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 970 | 610 | 90 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 820 | 770 | 40 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 5400 | 3780 | 500 |
| Total PAH (calc'd) | -- | -- | -- | -- | 6200 | 4550 | 540 |
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.65 U | 1.1 U | 0.7 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.65 U | 1.1 U | 0.7 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.65 U | **1.1 U** | 0.7 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.65 U** | **1.1 U** | **0.7 U** |
| **Benzenes (µg/kg dry weight)** | | | | | | | |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | 20 U | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | 20 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 20 U | 20 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 20 U | 20 U | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 19 | 33 | 3.1 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | **15** | 1.1 U | 0.7 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.65 U | 1.1 U | 0.7 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.65 | 1.1 U | 0.7 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.65 | 1.1 | 0.7 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.65 U | 1.1 U | 0.7 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 590 | 610 | 90 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 460 | 20 U | 20 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 20 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 | 20 U | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 | 20 | 20 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 20 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 40 U | 40 U | 40 U |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 U | 20 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 U | 20 U | 20 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 100 U | 100 U | 100 UJ |
| Phenol | 420 | 1200 | -- | -- | 20 | 20 U | 20 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 1.9 | 3.8 | 0.7 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.65 U | 1.1 U | 0.7 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.3 U | 2.2 U | 1.4 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 200 U | 200 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 200 U | 200 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | 60 U | 60 U | 60 U |
| Aniline | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 50 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | 200 U | 200 U |
| Carbazole | -- | -- | -- | -- | 50 | 50 | 20 U |
| Dibenzofuran | -- | -- | 540 | 700 | 60 | 70 | 20 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 20 U | 20 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 100 UJ | 100 UJ | 100 UJ |
| Isophorone | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 40 U | 40 U | 40 U |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 40 U | 40 U | 40 U |
| **Ethers (µg/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 40 U | 40 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 5.8 | **17** | 0.84 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 UJ | 20 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 40 U | 40 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 79 | 190 | 24 |
| Aroclor-1260 | -- | -- | -- | -- | 100 | 120 | 20 U |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 180 | 310 | 24 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | 2000 J | 4000 J | 1000 UJ |
| PCB-028 | -- | -- | -- | -- | 3000 J | 8000 UJ | 1000 UJ |
| PCB-044 | -- | -- | -- | -- | 2000 J | 6000 J | 1000 UJ |
| PCB-055 | -- | -- | -- | -- | 4000 J | 8000 J | 1000 UJ |
| PCB-066 | -- | -- | -- | -- | 9000 U | 18000 UJ | 1000 J |

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| PCB-077 | -- | -- | -- | -- | 1000 U | 1000 UJ | 1000 UJ |
| PCB-081 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 U |
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 4000 J | 11000 J | 1000 J |
| PCB-105 | -- | -- | -- | -- | 3000 J | 4000 J | 1000 UJ |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-118 | -- | -- | -- | -- | 6000 | 10000 J | 1000 J |
| PCB-123 | -- | -- | -- | -- | 1000 UJ | 2000 UJ | 1000 UJ |
| PCB-126 | -- | -- | -- | -- | 1000 U | 1000 UJ | 1000 UJ |
| PCB-128 | -- | -- | -- | -- | 2000 J | 3000 J | 1000 UJ |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 14000 UJ | 17000 J | 2000 J |
| PCB-153 | -- | -- | -- | -- | 10000 J | 12000 J | 1000 J |
| PCB-156 | -- | -- | -- | -- | 1000 J | 2000 J | 1000 UJ |
| PCB-157 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-167 | -- | -- | -- | -- | 1000 UJ | 1000 J | 1000 UJ |
| PCB-169 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 U |
| PCB-170 | -- | -- | -- | -- | 6000 J | 5000 J | 1000 UJ |
| PCB-180 | -- | -- | -- | -- | 10000 J | 9000 J | 1000 J |
| PCB-187 | -- | -- | -- | -- | 6000 J | 5000 J | 1000 UJ |
| PCB-189 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-195 | -- | -- | -- | -- | 1000 J | 1000 UJ | 1000 UJ |
| PCB-206 | -- | -- | -- | -- | 1000 | 1000 J | 1000 UJ |
| PCB-209 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 UJ |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |

## Table B-4
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish Sheboygan - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Fish WHO - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

**Table B-4**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR126<br>SD-DR126-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - Glacier NW | DR144<br>SD-DR144-0000<br>8/17/1998<br>0-10 cm<br>East Nav. Channel - Glacier NW | DR161<br>SD-DR161-0000<br>8/31/1998<br>0-10 cm<br>Nav. Channel - Glacier NW |
|---|---|---|---|---|---|---|---|

| | |
|---|---|
| U | The analyte was analyzed for, but not detected above the method reporting limit. |
| J | The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. |
| UJ | The analyte was not detected at the estimated detection limit. |
| C | The metal analyte is estimated below the reporting limit. |
| | Non-detected concentration above either the SMS SQS and/or CSL criteria. |
| **Bold** | Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria. |
| ***Bold*** | Detected concentration greater than or equal to SMS CSL criteria. |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0028<br>CH08-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | CH0032<br>CH09-03<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | EIT079<br>EIT10-01<br>11/4/1997<br>0-10 cm<br>East Nav. Channel - POS | EIT081<br>EIT10-02<br>10/17/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 6.9 | 6.1 | 45 | 68 |
| Silt (total calc'd) | -- | -- | -- | -- | 68 | 70 | 6 | 5.1 |
| Clay (total calc'd) | -- | -- | -- | -- | 25 | 24 | 4.4 | 1.4 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.35 | 2.3 | 1.5 | 0.35 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | -- | -- | -- | -- |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | -- | -- | -- |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | -- | -- | -- | -- |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | -- | -- | -- | -- |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0028<br>CH08-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | CH0032<br>CH09-03<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | EIT079<br>EIT10-01<br>11/4/1997<br>0-10 cm<br>East Nav. Channel - POS | EIT081<br>EIT10-02<br>10/17/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | -- | -- | -- | -- |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | -- | -- | -- | -- |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | -- | -- | -- |
| Acenaphthylene | 66 | 66 | -- | -- | -- | -- | -- | -- |
| Acenaphthene | 16 | 57 | -- | -- | -- | -- | -- | -- |
| Anthracene | 220 | 1200 | -- | -- | -- | -- | -- | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | -- | -- | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | -- | -- | -- |
| Chrysene | 110 | 460 | -- | -- | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | -- | -- | -- |
| Fluoranthene | 160 | 1200 | -- | -- | -- | -- | -- | -- |
| Fluorene | 23 | 79 | -- | -- | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | -- | -- | -- |
| Naphthalene | 99 | 170 | -- | -- | -- | -- | -- | -- |
| Phenanthrene | 100 | 480 | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0028<br>CH08-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | CH0032<br>CH09-03<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | EIT079<br>EIT10-01<br>11/4/1997<br>0-10 cm<br>East Nav. Channel - POS | EIT081<br>EIT10-02<br>10/17/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | -- | -- | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | -- | -- | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | -- | -- | -- |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | -- | -- | -- |
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | -- | -- | -- |
| Acenaphthene | -- | -- | 500 | 730 | -- | -- | -- | -- |
| Anthracene | -- | -- | 960 | 4400 | -- | -- | -- | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | -- | -- | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | -- | -- | -- |
| Chrysene | -- | -- | 1400 | 2800 | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | -- | -- | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | -- | -- | -- |
| Fluorene | -- | -- | 540 | 1000 | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | -- | -- | -- |
| Naphthalene | -- | -- | 2100 | 2400 | -- | -- | -- | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | -- | -- | -- |
| Pyrene | -- | -- | 2600 | 3300 | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | -- | -- | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | -- | -- | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | -- | -- | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0028<br>CH08-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | CH0032<br>CH09-03<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | EIT079<br>EIT10-01<br>11/4/1997<br>0-10 cm<br>East Nav. Channel - POS | EIT081<br>EIT10-02<br>10/17/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | -- | -- | -- |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | -- | -- | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | -- | -- | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | -- | -- | -- |
| Nitrobenzene | -- | -- | -- | -- | -- | -- | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | -- | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | -- | -- | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | -- | -- | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | -- | -- | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | -- | -- | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | -- | -- | -- |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | -- | -- | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | -- | -- | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | -- | -- | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | -- | -- | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | -- | -- | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | -- | -- | -- |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0028<br>CH08-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | CH0032<br>CH09-03<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | EIT079<br>EIT10-01<br>11/4/1997<br>0-10 cm<br>East Nav. Channel - POS | EIT081<br>EIT10-02<br>10/17/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | -- | -- |
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | -- | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | -- | -- |
| Phenol | 420 | 1200 | -- | -- | -- | -- | -- | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | -- | -- | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | -- | -- |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | -- | -- |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | -- | -- |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | -- | -- | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | -- | -- | -- |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0028<br>CH08-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | CH0032<br>CH09-03<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | EIT079<br>EIT10-01<br>11/4/1997<br>0-10 cm<br>East Nav. Channel - POS | EIT081<br>EIT10-02<br>10/17/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | -- | -- | -- |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- | -- | -- |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0028<br>CH08-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | CH0032<br>CH09-03<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | EIT079<br>EIT10-01<br>11/4/1997<br>0-10 cm<br>East Nav. Channel - POS | EIT081<br>EIT10-02<br>10/17/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 5.5 | 5.2 | **16** | -- |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1221 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1232 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1242 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1248 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1254 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1260 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 130 | 120 | 240 | 45 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | 320 U | 270 U | 1400 | 270 U |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0028<br>CH08-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | CH0032<br>CH09-03<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | EIT079<br>EIT10-01<br>11/4/1997<br>0-10 cm<br>East Nav. Channel - POS | EIT081<br>EIT10-02<br>10/17/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 41000 J | 36000 J | 43000 J | 17000 J |
| PCB-105 | -- | -- | -- | -- | 4200 | 4000 | 8300 | 1400 |
| PCB-110 | -- | -- | -- | -- | 10000 | 9500 | 16000 | 5900 |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | 8300 | 8200 | 14000 | 4100 |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | 290 U | 240 U | 170 U | 230 U |
| PCB-128 | -- | -- | -- | -- | 4900 J | 4600 J | 7700 J | 3100 J |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 7900 | 7300 | 11000 | 5200 |
| PCB-153 | -- | -- | -- | -- | 27000 J | 24000 J | 41000 J | 12000 J |
| PCB-156 | -- | -- | -- | -- | 900 | 920 | 1300 | 210 U |
| PCB-157 | -- | -- | -- | -- | 230 U | 190 U | 1900 | 180 U |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | 720 U | 610 U | 410 U | 550 U |
| PCB-170 | -- | -- | -- | -- | 5200 | 4700 | 7400 | 2100 |
| PCB-180 | -- | -- | -- | -- | 7300 | 7100 | 12000 | 3100 |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 330 U | 280 U | 170 U | 230 U |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5
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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | CH0028<br>CH08-01<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | CH0032<br>CH09-03<br>10/16/1997<br>0-10 cm<br>Nav. Channel - POS | EIT079<br>EIT10-01<br>11/4/1997<br>0-10 cm<br>East Nav. Channel - POS | EIT081<br>EIT10-02<br>10/17/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT084<br>EIT11-03<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - POS | EST197<br>EST18-01<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | EST198<br>EST18-02<br>11/13/1997<br>0-10 cm<br>East Nav. Channel - POS | EST199<br>EST18-03<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 5.7 | 30 | 23 | 21 |
| Silt (total calc'd) | -- | -- | -- | -- | 65 | 43 | 44 | 54 |
| Clay (total calc'd) | -- | -- | -- | -- | 30 | 20 | 23 | 24 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.64 | 2.13 | 1.33 | 1.87 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | -- | -- | -- | -- |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | -- | -- | -- |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | -- | -- | -- | -- |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | -- | -- | -- | -- |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- |

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|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | -- | -- | -- | -- |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | -- | -- | -- | -- |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | -- | -- | -- |
| Acenaphthylene | 66 | 66 | -- | -- | -- | -- | -- | -- |
| Acenaphthene | 16 | 57 | -- | -- | -- | -- | -- | -- |
| Anthracene | 220 | 1200 | -- | -- | -- | -- | -- | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | -- | -- | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | -- | -- | -- |
| Chrysene | 110 | 460 | -- | -- | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | -- | -- | -- |
| Fluoranthene | 160 | 1200 | -- | -- | -- | -- | -- | -- |
| Fluorene | 23 | 79 | -- | -- | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | -- | -- | -- |
| Naphthalene | 99 | 170 | -- | -- | -- | -- | -- | -- |
| Phenanthrene | 100 | 480 | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT084<br>EIT11-03<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - POS | EST197<br>EST18-01<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | EST198<br>EST18-02<br>11/13/1997<br>0-10 cm<br>East Nav. Channel - POS | EST199<br>EST18-03<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | -- | -- | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | -- | -- | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | -- | -- | -- |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | -- | -- | -- |
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | -- | -- | -- |
| Acenaphthene | -- | -- | 500 | 730 | -- | -- | -- | -- |
| Anthracene | -- | -- | 960 | 4400 | -- | -- | -- | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | -- | -- | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | -- | -- | -- |
| Chrysene | -- | -- | 1400 | 2800 | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | -- | -- | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | -- | -- | -- |
| Fluorene | -- | -- | 540 | 1000 | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | -- | -- | -- |
| Naphthalene | -- | -- | 2100 | 2400 | -- | -- | -- | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | -- | -- | -- |
| Pyrene | -- | -- | 2600 | 3300 | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | -- | -- | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | -- | -- | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | -- | -- | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT084<br>EIT11-03<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - POS | EST197<br>EST18-01<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | EST198<br>EST18-02<br>11/13/1997<br>0-10 cm<br>East Nav. Channel - POS | EST199<br>EST18-03<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | -- | -- | -- |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | -- | -- | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | -- | -- | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | -- | -- | -- |
| Nitrobenzene | -- | -- | -- | -- | -- | -- | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | -- | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | -- | -- | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | -- | -- | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | -- | -- | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | -- | -- | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | -- | -- | -- |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | -- | -- | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | -- | -- | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | -- | -- | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | -- | -- | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | -- | -- | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | -- | -- | -- |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT084<br>EIT11-03<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - POS | EST197<br>EST18-01<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | EST198<br>EST18-02<br>11/13/1997<br>0-10 cm<br>East Nav. Channel - POS | EST199<br>EST18-03<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | -- | -- |
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | -- | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | -- | -- |
| Phenol | 420 | 1200 | -- | -- | -- | -- | -- | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | -- | -- | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | -- | -- |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | -- | -- |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | -- | -- |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | -- | -- | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | -- | -- | -- |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT084<br>EIT11-03<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - POS | EST197<br>EST18-01<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | EST198<br>EST18-02<br>11/13/1997<br>0-10 cm<br>East Nav. Channel - POS | EST199<br>EST18-03<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | -- | -- | -- |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- | -- | -- |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT084<br>EIT11-03<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - POS | EST197<br>EST18-01<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | EST198<br>EST18-02<br>11/13/1997<br>0-10 cm<br>East Nav. Channel - POS | EST199<br>EST18-03<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 0.29 J | 6.1 | 7.5 | 7.5 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1221 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1232 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1242 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1248 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1254 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1260 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 4.7 J | 130 | 100 | 140 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | 230 U | 280 U | 320 U | 240 U |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT084<br>EIT11-03<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - POS | EST197<br>EST18-01<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | EST198<br>EST18-02<br>11/13/1997<br>0-10 cm<br>East Nav. Channel - POS | EST199<br>EST18-03<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 180 U | 32000 J | 30000 J | 38000 J |
| PCB-105 | -- | -- | -- | -- | 180 U | 4200 | 3300 | 3900 |
| PCB-110 | -- | -- | -- | -- | 180 U | 9900 | 7100 | 12000 |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | 180 U | 8900 | 7300 | 9200 |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | 200 U | 240 U | 280 U | 210 U |
| PCB-128 | -- | -- | -- | -- | 190 U | 4500 J | 4700 U | 6200 U |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 200 U | 8800 | 5800 | 9100 |
| PCB-153 | -- | -- | -- | -- | 190 U | 25000 J | 20000 J | 26000 J |
| PCB-156 | -- | -- | -- | -- | 180 U | 1200 | 250 U | 1000 |
| PCB-157 | -- | -- | -- | -- | 150 U | 190 U | 220 U | 160 U |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | 460 U | 580 U | 650 U | 480 U |
| PCB-170 | -- | -- | -- | -- | 170 U | 7100 | 4800 | 5800 |
| PCB-180 | -- | -- | -- | -- | 160 U | 7300 | 6100 | 8100 |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 210 U | 240 U | 300 U | 220 U |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EIT084<br>EIT11-03<br>9/19/1997<br>0-10 cm<br>East Nav. Channel - POS | EST197<br>EST18-01<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | EST198<br>EST18-02<br>11/13/1997<br>0-10 cm<br>East Nav. Channel - POS | EST199<br>EST18-03<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST200<br>EST18-04<br>10/6/1997<br>0-10 cm<br>East Nav. Channel - POS | EST209<br>EST19-06<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | JHGSA-SD1-COMP27-00<br>JHGSA-SD1-COMP27-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | 32 |
| Sand (total calc'd) | -- | -- | -- | -- | 39 | 13 | 57.9 |
| Silt (total calc'd) | -- | -- | -- | -- | 37 | 64 | 4.92 |
| Clay (total calc'd) | -- | -- | -- | -- | 19 | 23 | 2.24 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.47 | 1.98 | 0.47 |
| Total solids | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | -- | -- | 7.5 J |
| Barium | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | -- | 0.23 |
| Calcium | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | -- | -- | 23 J |
| Cobalt | -- | -- | -- | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | -- | -- | 40.9 J |
| Iron | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | -- | -- | 18.4 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST200<br>EST18-04<br>10/6/1997<br>0-10 cm<br>East Nav. Channel - POS | EST209<br>EST19-06<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | JHGSA-SD1-COMP27-00<br>JHGSA-SD1-COMP27-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | -- | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | -- | -- | 0.08 |
| Sodium | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | -- | -- | 90.9 J |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | -- | -- |
| Acenaphthylene | 66 | 66 | -- | -- | -- | -- | -- |
| Acenaphthene | 16 | 57 | -- | -- | -- | -- | -- |
| Anthracene | 220 | 1200 | -- | -- | -- | -- | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | -- | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | -- | -- |
| Chrysene | 110 | 460 | -- | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | -- | -- |
| Fluoranthene | 160 | 1200 | -- | -- | -- | -- | -- |
| Fluorene | 23 | 79 | -- | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | -- | -- |
| Naphthalene | 99 | 170 | -- | -- | -- | -- | -- |
| Phenanthrene | 100 | 480 | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST200<br>EST18-04<br>10/6/1997<br>0-10 cm<br>East Nav. Channel - POS | EST209<br>EST19-06<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | JHGSA-SD1-COMP27-00<br>JHGSA-SD1-COMP27-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | -- | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | -- | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | -- | -- |
| **PAHs (µg/kg dry weight)** | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | -- | 7 J |
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | -- | 10 J |
| Acenaphthene | -- | -- | 500 | 730 | -- | -- | 36 |
| Anthracene | -- | -- | 960 | 4400 | -- | -- | 59 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | -- | 87 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | -- | 67 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | -- | 94 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | -- | 72 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | -- | 40 |
| Chrysene | -- | -- | 1400 | 2800 | -- | -- | 140 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | -- | 10 J |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | -- | 210 |
| Fluorene | -- | -- | 540 | 1000 | -- | -- | 29 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | -- | 44 |
| Naphthalene | -- | -- | 2100 | 2400 | -- | -- | 10 J |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | -- | 82 |
| Pyrene | -- | -- | 2600 | 3300 | -- | -- | 160 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | -- | 166 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | -- | 226 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | -- | 920 J |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | -- | 1150 J |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST200<br>EST18-04<br>10/6/1997<br>0-10 cm<br>East Nav. Channel - POS | EST209<br>EST19-06<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | JHGSA-SD1-COMP27-00<br>JHGSA-SD1-COMP27-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | -- | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | -- | -- |
| **Benzenes (µg/kg dry weight)** | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | -- | 2 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | -- | 3 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | -- | 2 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | -- | 2 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | -- | 2 U |
| Nitrobenzene | -- | -- | -- | -- | -- | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | -- | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | -- | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | -- | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | -- | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | -- | -- |
| **Phthalates (µg/kg dry weight)** | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | -- | 39 J |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | -- | 3 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | -- | 2 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | -- | 2 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | -- | 5 J |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | -- | 2 U |
| **Phenols (µg/kg dry weight)** | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST200<br>EST18-04<br>10/6/1997<br>0-10 cm<br>East Nav. Channel - POS | EST209<br>EST19-06<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | JHGSA-SD1-COMP27-00<br>JHGSA-SD1-COMP27-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | ***50 U*** |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | 30 U |
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | 50 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | 50 U |
| Phenol | 420 | 1200 | -- | -- | -- | -- | 10 J |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | -- | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | -- |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | 250 U |
| Carbazole | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | -- | 23 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | -- | 2 U |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | 8 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | EST200<br>EST18-04<br>10/6/1997<br>0-10 cm<br>East Nav. Channel - POS | EST209<br>EST19-06<br>10/7/1997<br>0-10 cm<br>East Nav. Channel - POS | JHGSA-SD1-COMP27-00<br>JHGSA-SD1-COMP27-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | -- | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | -- | 3 U |
| **Ethers (µg/kg dry weight)** | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- | -- |
| **Pesticides (µg/kg dry weight)** | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **12** | 4.4 J | -- |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | -- | -- | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | -- | -- | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | -- | -- | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | -- | -- | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | -- | -- | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | -- | -- | 30 J |
| Aroclor-1260 | -- | -- | -- | -- | -- | -- | 20 U |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 180 | 88 J | 30 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | 260 U | 310 U | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 47000 J | 28000 J | -- |
| PCB-105 | -- | -- | -- | -- | 6400 | 2900 | -- |
| PCB-110 | -- | -- | -- | -- | 14000 | 6900 | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | 12000 | 7100 | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | 230 U | 280 U | -- |
| PCB-128 | -- | -- | -- | -- | 6400 U | 3000 J | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 11000 | 5900 | -- |
| PCB-153 | -- | -- | -- | -- | 35000 J | 20000 J | -- |
| PCB-156 | -- | -- | -- | -- | 1400 | 790 | -- |
| PCB-157 | -- | -- | -- | -- | 180 U | 670 | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | 530 U | 680 U | -- |
| PCB-170 | -- | -- | -- | -- | 6100 | 4100 | -- |
| PCB-180 | -- | -- | -- | -- | 8600 | 6300 | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 250 U | 310 U | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

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|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP32-00<br>JHGSA-SD1-COMP32-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - POS | C5<br>LDW-C5-S<br>8/27/2004<br>0-10 cm<br>East Nav. Channel - POS | LDW-SC203<br>LDW-SC203-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 35 | 1.72 | 3 | 2.7 |
| Sand (total calc'd) | -- | -- | -- | -- | 47.3 | 93.5 | 25.2 | 23.1 |
| Silt (total calc'd) | -- | -- | -- | -- | 5.2 | 3.64 | 53.7 | 61.3 |
| Clay (total calc'd) | -- | -- | -- | -- | 2.78 | 1.82 | 17.9 | 12.7 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | 5.46 | 71.6 | 74 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.01 | 0.32 | 3.27 | 2.91 |
| Total solids | -- | -- | -- | -- | -- | 73.8 | 45.5 | 47.3 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | 0.67 J | 9 UJ | 10 UJ |
| Arsenic | 57 | 93 | -- | -- | 27.3 | 4.72 | 20 | 20 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.49 | 0.07 | 0.6 | 0.7 |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 24.5 | 10.4 | 39.5 | 41 |
| Cobalt | -- | -- | -- | -- | -- | 3.92 | 8.9 | 9.8 |
| Copper | 390 | 390 | -- | -- | 62.9 | 17.4 | 102 | 88.1 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 101 | 22.5 J | 78 | 68 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | -- | 0.021 | 0.23 | 0.2 |
| Molybdenum | -- | -- | -- | -- | -- | 0.495 J | 2.8 | 3 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP32-00<br>JHGSA-SD1-COMP32-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - POS | C5<br>LDW-C5-S<br>8/27/2004<br>0-10 cm<br>East Nav. Channel - POS | LDW-SC203<br>LDW-SC203-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | -- | 11.3 | 29 | 28 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | 0.3 J | 9 U | 10 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.12 | 0.077 | 0.6 U | 0.7 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | 0.044 | 9 U | 10 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | 41.5 | 67.1 | 73.1 |
| Zinc | 410 | 960 | -- | -- | 213 | 70.4 J | 204 | 225 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | 0.85 J | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | 2.9 | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | 6.5 | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | 1.4 U | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.59 J | -- | 4.9 U | 3.8 U |
| Acenaphthylene | 66 | 66 | -- | -- | 7.6 | -- | 4.9 U | 3.8 U |
| Acenaphthene | 16 | 57 | -- | -- | 0.99 J | -- | 4.9 U | 3.8 U |
| Anthracene | 220 | 1200 | -- | -- | 27 | -- | 4.3 J | 5.8 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 51 | -- | 11 | 16 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 31 | -- | 10 | 15 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 14 | -- | 2.6 J | 4.8 |
| Chrysene | 110 | 460 | -- | -- | 80 | -- | 16 | 23 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 4.7 | -- | 4.9 U | 3.8 U |
| Fluoranthene | 160 | 1200 | -- | -- | 80 | -- | 34 | 45 |
| Fluorene | 23 | 79 | -- | -- | 3.5 | -- | 4.9 U | 3.8 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 17 | -- | 3.1 J | 5.5 |
| Naphthalene | 99 | 170 | -- | -- | 0.4 J | -- | 4.9 U | 3.8 U |
| Phenanthrene | 100 | 480 | -- | -- | 14 | -- | 5.5 | 15 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br><br>SMS 2LAET[a] | JHGSA-SD1-COMP32-00<br>JHGSA-SD1-COMP32-00<br>7/3/2000<br>0-10 cm<br><br>East Nav. Channel - POS | C5<br>LDW-C5-S<br>8/27/2004<br>0-10 cm<br>East Nav.<br>Channel - POS | LDW-SC203<br>LDW-SC203-0-1<br>2/17/2006<br>0-1 FT<br>West Nav.<br>Channel - POS | LDW-SC203<br>LDW-SC203-1-2<br>2/17/2006<br>1-2 FT<br>West Nav.<br>Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 90 | -- | 24 | 31 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 93 | -- | 29 | 41 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 53 J | -- | 9.8 J | 21 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 460 | -- | 130 J | 180 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | 160 U | 110 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 6 J | 6.2 | 160 U | 110 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 77 | 12 | 160 U | 110 U |
| Acenaphthene | -- | -- | 500 | 730 | 10 J | 41 | 160 U | 110 U |
| Anthracene | -- | -- | 960 | 4400 | 270 | 59 | 140 J | 170 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 520 | 410 | 350 | 480 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 310 | 390 | 330 | 450 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 520 | 390 | 540 | 640 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 420 | 180 | 400 | 550 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 140 | 110 | 84 J | 140 |
| Chrysene | -- | -- | 1400 | 2800 | 810 | 290 | 530 | 680 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 47 | 28 | 160 U | 110 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 810 | 440 | 1100 | 1300 |
| Fluorene | -- | -- | 540 | 1000 | 35 | 33 | 160 U | 110 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 170 | 200 | 100 J | 160 |
| Naphthalene | -- | -- | 2100 | 2400 | 4 J | 13 | 160 U | 110 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 140 | 230 | 180 | 440 |
| Pyrene | -- | -- | 2600 | 3300 | 910 | 390 | 800 | 910 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 940 | 570 | 940 | 1190 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 540 J | 390 | 320 J | 610 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 4660 | 2830 | 4200 J | 5300 |
| Total PAH (calc'd) | -- | -- | -- | -- | 5190 J | 3220 | 4600 J | 5900 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | JHGSA-SD1-COMP32-00<br>JHGSA-SD1-COMP32-00<br>7/3/2000<br>0-10 cm<br>East Nav. Channel - POS | C5<br>LDW-C5-S<br>8/27/2004<br>0-10 cm<br>East Nav. Channel - POS | LDW-SC203<br>LDW-SC203-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.2 U | -- | 0.28 U | 0.38 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.2 U | -- | 0.17 J | 0.22 J |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.2 U | -- | 0.28 UJ | 0.38 UJ |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.2 U | -- | 0.15 U | 0.17 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 2 U | 6.4 U | 9.3 U | 11 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 3 U | 20 U | 160 U | 110 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 2 U | 6.4 U | 5.6 J | 6.5 J |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 2 U | 6.4 U | 9.3 UJ | 11 UJ |
| Hexachlorobenzene | -- | -- | 22 | 70 | 2 U | 0.98 U | 4.9 U | 4.9 U |
| Nitrobenzene | -- | -- | -- | -- | -- | 20 U | 160 U | 110 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 11 J | -- | **55** | ***89*** |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.69 J | -- | **12** | **14** |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.2 U | -- | 4.9 U | 3.8 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.2 J | -- | 52 | 3.8 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.5 J | -- | 4.9 U | 3.8 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.2 U | -- | 4.9 U | 3.8 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 110 J | 41 J | 1800 | 2600 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 7 J | 39 | 380 | 400 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 2 U | 6.4 U | 160 U | 110 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 2 J | 6.4 U | 1700 | 110 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 5 J | 29 J | 160 U | 110 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 2 U | 20 U | 160 U | 110 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | 20 U | 160 U | 110 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | 20 U | 780 U | 540 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br><br>SMS 2LAET[a] | JHGSA-SD1-COMP32-00<br>JHGSA-SD1-COMP32-00<br>7/3/2000<br>0-10 cm<br><br>East Nav. Channel - POS | C5<br>LDW-C5-S<br>8/27/2004<br>0-10 cm<br>East Nav.<br>Channel - POS | LDW-SC203<br>LDW-SC203-0-1<br>2/17/2006<br>0-1 FT<br>West Nav.<br>Channel - POS | LDW-SC203<br>LDW-SC203-1-2<br>2/17/2006<br>1-2 FT<br>West Nav.<br>Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | 20 U | 780 U | 540 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | ***50 U*** | 6.4 U | 9.3 U | 11 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | 400 U | 1600 UJ | 1100 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | 30 U | 6.4 U | 20 J | 11 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 50 U | 20 U | 160 U | 110 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | 20 U | 780 U | 540 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | 20 U | 780 U | 540 U |
| 2-Nitrophenol | -- | -- | -- | -- | -- | 20 U | 780 U | 540 U |
| 4-Nitrophenol | -- | -- | -- | -- | -- | 200 U | 780 U | 540 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 50 U | 44 | 47 U | 54 U |
| Phenol | 420 | 1200 | -- | -- | 8 U | 59 | 160 U | 110 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 0.99 J | -- | 4.9 U | 3.8 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.2 U | -- | 0.15 U | 0.17 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.3 U | -- | 3 U | 6.9 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | 40 U | 780 U | 540 U |
| 3-Nitroaniline | -- | -- | -- | -- | -- | 40 U | 780 UJ | 540 UJ |
| 4-Nitroaniline | -- | -- | -- | -- | -- | 40 U | 780 U | 540 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | 200 U | 780 UJ | 540 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | -- | 20 U | 780 UJ | 540 UJ |
| Aniline | -- | -- | -- | -- | -- | 40 U | 160 UJ | 110 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 20 U | **66** | 41 J |
| Benzoic acid | 650 | 650 | -- | -- | 250 U | 600 | 420 | 140 U |
| Carbazole | -- | -- | -- | -- | -- | 21 J | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 10 J | 21 | 160 U | 110 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 2 U | 6.4 U | 4.9 U | 4.9 U |
| Hexachloroethane | -- | -- | -- | -- | 8 U | 20 U | 160 U | 110 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | 100 U | 780 UJ | 540 UJ |

**Table B-5**

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|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | -- | 20 U | 160 U | 110 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | 20 U | 47 U | 54 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | 32 U | 47 U | 54 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 3 U | 6.4 U | 98 U | 200 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | 20 U | 160 U | 110 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | 20 U | 160 U | 110 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | 20 U | 160 U | 110 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | 20 U | 160 U | 110 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | 0.98 U | 9.8 U | 9.8 U |
| 2,4'-DDE | -- | -- | -- | -- | -- | 0.98 U | 9.8 U | 9.8 U |
| 2,4'-DDT | -- | -- | -- | -- | -- | 2 | 9.8 U | 9.8 U |
| 4,4'-DDD | -- | -- | -- | -- | -- | 0.44 J | 9.8 U | 9.8 U |
| 4,4'-DDE | -- | -- | -- | -- | -- | 0.98 U | 9.8 U | 9.8 U |
| 4,4'-DDT | -- | -- | -- | -- | -- | 2.5 | 32 U | 12 U |
| Aldrin | -- | -- | -- | -- | -- | 0.98 U | 4.9 U | 4.9 U |
| alpha-Chlordane | -- | -- | -- | -- | -- | 0.13 J | 4.9 U | 4.9 U |
| alpha-BHC | -- | -- | -- | -- | -- | 0.98 U | 4.9 U | 4.9 U |
| beta-BHC | -- | -- | -- | -- | -- | 0.98 U | 4.9 U | 4.9 U |
| delta-BHC | -- | -- | -- | -- | -- | 0.98 U | 23 | 60 |
| gamma-BHC | -- | -- | -- | -- | -- | 0.98 U | 4.9 U | 4.9 U |
| gamma-Chlordane | -- | -- | -- | -- | -- | 1.1 J | 9.2 U | 4.9 U |
| Oxychlordane | -- | -- | -- | -- | -- | -- | 9.8 U | 9.8 U |
| Dieldrin | -- | -- | -- | -- | -- | 0.98 U | 9.8 U | 9.8 U |
| alpha-Endosulfan | -- | -- | -- | -- | -- | 0.33 J | 4.9 U | 4.9 U |
| beta-Endosulfan | -- | -- | -- | -- | -- | 0.98 U | 9.8 U | 9.8 U |
| Endosulfan sulfate | -- | -- | -- | -- | -- | 0.98 U | 9.8 U | 9.8 U |
| Endrin | -- | -- | -- | -- | -- | 0.98 U | 9.8 U | 9.8 U |

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|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | 0.98 U | 9.8 U | 9.8 U |
| Endrin ketone | -- | -- | -- | -- | -- | 0.98 U | 9.8 U | 9.8 U |
| Heptachlor | -- | -- | -- | -- | -- | 0.98 U | 4.9 U | 4.9 U |
| Heptachlor epoxide | -- | -- | -- | -- | -- | 0.98 U | 4.9 U | 4.9 U |
| Toxaphene | -- | -- | -- | -- | -- | 49 U | 490 U | 490 U |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | 0.98 U | 9.8 U | 9.8 U |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | 4.9 J | 32 U | 12 U |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | 1.2 J | 9.8 U | 9.8 U |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | 0.98 U | 49 U | 49 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | ***68*** | -- | 7.6 | 3.8 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 9.8 U | 20 U | 39 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 39 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 9.8 U | 20 U | 39 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 9.8 U | 20 U | 39 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 9.8 U | 60 | 330 U |
| Aroclor-1254 | -- | -- | -- | -- | 690 | 25 | 110 | 110 |
| Aroclor-1260 | -- | -- | -- | -- | 20 U | 28 | 84 | 140 U |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 690 | 53 | 250 | 110 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br><br>SMS 2LAET[a] | JHGSA-SD1-COMP32-00<br>JHGSA-SD1-COMP32-00<br>7/3/2000<br>0-10 cm<br><br>East Nav. Channel - POS | C5<br>LDW-C5-S<br>8/27/2004<br>0-10 cm<br>East Nav.<br>Channel - POS | LDW-SC203<br>LDW-SC203-0-1<br>2/17/2006<br>0-1 FT<br>West Nav.<br>Channel - POS | LDW-SC203<br>LDW-SC203-1-2<br>2/17/2006<br>1-2 FT<br>West Nav.<br>Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br><br>SMS 2LAET[a] | JHGSA-SD1-COMP32-00<br>JHGSA-SD1-COMP32-00<br>7/3/2000<br>0-10 cm<br><br>East Nav. Channel - POS | C5<br>LDW-C5-S<br>8/27/2004<br>0-10 cm<br>East Nav.<br>Channel - POS | LDW-SC203<br>LDW-SC203-0-1<br>2/17/2006<br>0-1 FT<br>West Nav.<br>Channel - POS | LDW-SC203<br>LDW-SC203-1-2<br>2/17/2006<br>1-2 FT<br>West Nav.<br>Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC203<br>LDW-SC203-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - POS | LDW-SC30<br>LDW-SC30-0-2.5<br>2/14/2006<br>0-2.5 FT<br>East Nav. Channel - POS | LDW-SC30<br>LDW-SC30-2.5-4<br>2/14/2006<br>2.5-4 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 4.3 | -- | 0.9 | 0.1 |
| Sand (total calc'd) | -- | -- | -- | -- | 36.6 | -- | 94.4 | 49.3 |
| Silt (total calc'd) | -- | -- | -- | -- | 47.4 | -- | 3.4 | 45.5 |
| Clay (total calc'd) | -- | -- | -- | -- | 11.5 | -- | 1.3 | 5.1 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 58.9 | -- | 4.7 | 50.6 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.59 | 2.44 | 0.541 | 0.271 |
| Total solids | -- | -- | -- | -- | 52.9 | 58.8 | 79.1 | 77.5 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 9 UJ | -- | 6 UJ | 7 UJ |
| Arsenic | 57 | 93 | -- | -- | 15 | -- | 6 U | 7 U |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.4 U | -- | 0.2 U | 0.3 U |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 32 | -- | 11.4 | 10.6 |
| Cobalt | -- | -- | -- | -- | 8.9 | -- | 4.3 | 3.9 |
| Copper | 390 | 390 | -- | -- | 66.9 | -- | 11.1 J | 16.4 J |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 58 | -- | 3 | 3 U |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.17 | -- | 0.06 U | 0.06 U |
| Molybdenum | -- | -- | -- | -- | 1.3 | -- | 0.6 U | 0.7 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC203<br>LDW-SC203-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - POS | LDW-SC30<br>LDW-SC30-0-2.5<br>2/14/2006<br>0-2.5 FT<br>East Nav. Channel - POS | LDW-SC30<br>LDW-SC30-2.5-4<br>2/14/2006<br>2.5-4 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 27 | -- | 7 J | 6 J |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 9 U | -- | 6 U | 7 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.5 U | -- | 0.4 U | 0.4 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 9 U | -- | 6 U | 7 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 61.8 | -- | 45.6 | 43 |
| Zinc | 410 | 960 | -- | -- | 137 | -- | 27.3 | 20.5 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 2.7 U | 2.7 U | 3.5 U | |
| Acenaphthylene | 66 | 66 | -- | -- | 2.7 U | 2.7 U | 3.5 U | |
| Acenaphthene | 16 | 57 | -- | -- | 2.7 U | 2.7 U | 3.5 U | |
| Anthracene | 220 | 1200 | -- | -- | 6.2 | 3 | 3.5 U | |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 9.7 | 9.8 | 3.1 J | |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 7.3 | 7.4 | 3.3 J | |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 2.3 J | 3.6 | 3.5 U | |
| Chrysene | 110 | 460 | -- | -- | 14 | 13 | 4.6 | |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.7 U | 1.6 | 3.5 U | |
| Fluoranthene | 160 | 1200 | -- | -- | 27 | 31 | 7.8 | |
| Fluorene | 23 | 79 | -- | -- | 2.7 U | 1.6 J | 3.5 U | |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 2.7 | 2.7 | 3.5 U | |
| Naphthalene | 99 | 170 | -- | -- | 2.7 U | 2.7 U | 3.5 U | |
| Phenanthrene | 100 | 480 | -- | -- | 6.6 | 7 | 2.8 J | |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC203<br>LDW-SC203-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - POS | LDW-SC30<br>LDW-SC30-0-2.5<br>2/14/2006<br>0-2.5 FT<br>East Nav. Channel - POS | LDW-SC30<br>LDW-SC30-2.5-4<br>2/14/2006<br>2.5-4 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 24 | 28 | 4.8 | |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 21 | 20 | 10 | |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 13 | 11 J | 2.8 J | |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 110 J | 120 | 34 J | |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 69 U | 66 U | 19 U | 19 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 69 U | 66 U | 19 U | 19 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 69 U | 66 U | 19 U | 19 U |
| Acenaphthene | -- | -- | 500 | 730 | 69 U | 66 U | 19 U | 19 U |
| Anthracene | -- | -- | 960 | 4400 | 160 | 74 | 19 U | 19 U |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 250 | 240 | 17 J | 19 U |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 190 | 180 | 18 J | 19 U |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 280 | 340 | 32 | 19 U |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 260 | 150 | 23 | 19 U |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 60 J | 89 | 19 U | 19 U |
| Chrysene | -- | -- | 1400 | 2800 | 370 | 310 | 25 | 19 U |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 69 U | 39 | 19 U | 19 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 700 | 760 | 42 | 19 U |
| Fluorene | -- | -- | 540 | 1000 | 69 U | 39 J | 19 U | 19 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 71 | 66 | 19 U | 19 U |
| Naphthalene | -- | -- | 2100 | 2400 | 69 U | 66 U | 19 U | 19 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 170 | 170 | 15 J | 19 U |
| Pyrene | -- | -- | 2600 | 3300 | 630 | 690 | 26 | 19 U |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 540 | 490 | 55 | 19 U |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 330 | 280 J | 15 J | 19 U |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2810 J | 2860 | 183 J | 19 U |
| Total PAH (calc'd) | -- | -- | -- | -- | 3140 J | 3150 J | 198 J | 19 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC203<br>LDW-SC203-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - POS | LDW-SC30<br>LDW-SC30-0-2.5<br>2/14/2006<br>0-2.5 FT<br>East Nav. Channel - POS | LDW-SC30<br>LDW-SC30-2.5-4<br>2/14/2006<br>2.5-4 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.27 U | 0.27 U | 1.1 U | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.27 U | 0.27 U | 1.1 U | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.27 UJ | 0.27 U | **1.1 U** | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.19 U | 0.27 U | **1.1 U** | -- |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6.9 U | 6.6 U | 5.8 U | 5.8 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 69 U | 6.6 U | 19 U | 19 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6.9 U | 6.6 U | 5.8 U | 5.8 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6.9 UJ | 6.6 U | 5.8 U | 5.8 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 4.9 U | 6.6 U | 5.8 U | 5.8 U |
| Nitrobenzene | -- | -- | -- | -- | 69 U | 66 U | 19 U | 19 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 23 | 32 | 5.5 | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | **5.4** | 2 | 1.1 U | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | 2.7 U | 2.7 U | 3.5 U | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | ***340*** | 8.6 | 3.5 U | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 2.7 U | 2.7 U | 8.7 | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.7 U | 2.7 U | 3.5 U | -- |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 590 | 770 | 30 | 19 U |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 140 | 48 | 5.8 U | 5.8 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 69 U | 66 U | 19 U | 19 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 8800 | 210 | 19 U | 19 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 69 U | 66 U | 47 | 19 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 69 U | 66 U | 19 U | 19 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 69 U | 66 U | 19 U | 19 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 350 U | 330 U | 97 U | 97 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC203<br>LDW-SC203-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - POS | LDW-SC30<br>LDW-SC30-0-2.5<br>2/14/2006<br>0-2.5 FT<br>East Nav. Channel - POS | LDW-SC30<br>LDW-SC30-2.5-4<br>2/14/2006<br>2.5-4 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 350 U | 330 U | 97 U | 97 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6.9 U | 6.6 U | 5.8 U | 5.8 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 690 UJ | 660 U | 190 U | 190 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6.9 U | 6.6 U | 5.8 U | 5.8 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 69 U | 66 U | 19 U | 19 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 350 U | 330 U | 97 U | 97 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 350 U | 330 U | 97 U | 97 U |
| 2-Nitrophenol | -- | -- | -- | -- | 350 U | 330 U | 97 U | 97 U |
| 4-Nitrophenol | -- | -- | -- | -- | 350 U | 330 U | 97 U | 97 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 35 U | 63 | 29 U | 29 U |
| Phenol | 420 | 1200 | -- | -- | 62 J | 66 U | 19 U | 19 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 2.7 U | 2.7 U | 3.5 U | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.19 U | 0.27 U | 1.1 U | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.1 U | 2.5 U | 1.1 U | -- |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 350 U | 330 U | 97 U | 97 U |
| 3-Nitroaniline | -- | -- | -- | -- | 350 UJ | 330 U | 97 U | 97 U |
| 4-Nitroaniline | -- | -- | -- | -- | 350 U | 330 U | 97 U | 97 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 350 UJ | 330 U | 97 UJ | 97 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | 350 UJ | 330 U | 97 UJ | 97 UJ |
| Aniline | -- | -- | -- | -- | 69 UJ | 66 U | 19 UJ | 19 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | 35 U | 33 U | 29 U | 29 U |
| Benzoic acid | 650 | 650 | -- | -- | 570 | 590 U | 58 U | 58 U |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 69 U | 66 U | 19 U | 19 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 4.9 U | 6.6 U | 5.8 U | 5.8 U |
| Hexachloroethane | -- | -- | -- | -- | 69 U | 66 U | 19 U | 19 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 350 UJ | 330 U | 97 U | 97 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC203<br>LDW-SC203-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - POS | LDW-SC30<br>LDW-SC30-0-2.5<br>2/14/2006<br>0-2.5 FT<br>East Nav. Channel - POS | LDW-SC30<br>LDW-SC30-2.5-4<br>2/14/2006<br>2.5-4 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 69 U | 66 U | 19 U | 19 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 35 U | 33 U | 29 U | 29 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 35 U | 33 U | 29 U | 29 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 28 U | 62 U | 5.8 U | 5.8 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 69 U | 66 U | 19 U | 19 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 69 U | 66 U | 19 U | 19 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 69 U | 66 U | 19 U | 19 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 69 U | 66 U | 19 U | 19 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | 4.9 U | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | 4.9 U | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | 4.9 U | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | 4.9 U | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | 29 | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | 4.9 U | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | 4.9 U | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | 4.9 U | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| Endrin | -- | -- | -- | -- | 9.7 U | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC203<br>LDW-SC203-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - POS | LDW-SC30<br>LDW-SC30-0-2.5<br>2/14/2006<br>0-2.5 FT<br>East Nav. Channel - POS | LDW-SC30<br>LDW-SC30-2.5-4<br>2/14/2006<br>2.5-4 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | 4.9 U | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | 4.9 U | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | 490 U | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | 9.7 U | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | 49 U | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 6.7 | 7.4 | 2.4 | -- |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 12 U | 3.9 U | 3.9 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 12 U | 3.9 U | 3.9 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 12 U | 3.9 U | 3.9 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 41 | 3.9 U | 3.9 U |
| Aroclor-1248 | -- | -- | -- | -- | 38 | 12 U | 3.9 U | 3.9 U |
| Aroclor-1254 | -- | -- | -- | -- | 81 | 80 | 6.8 | 3.9 U |
| Aroclor-1260 | -- | -- | -- | -- | 55 | 60 | 6.1 | 3.9 U |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 174 | 181 | 12.9 | 3.9 U |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC203<br>LDW-SC203-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - POS | LDW-SC30<br>LDW-SC30-0-2.5<br>2/14/2006<br>0-2.5 FT<br>East Nav. Channel - POS | LDW-SC30<br>LDW-SC30-2.5-4<br>2/14/2006<br>2.5-4 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC203<br>LDW-SC203-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SC203<br>LDW-SC203-4-6<br>2/17/2006<br>4-6 FT<br>West Nav. Channel - POS | LDW-SC30<br>LDW-SC30-0-2.5<br>2/14/2006<br>0-2.5 FT<br>East Nav. Channel - POS | LDW-SC30<br>LDW-SC30-2.5-4<br>2/14/2006<br>2.5-4 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC31<br>LDW-SC31-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-1-2.8<br>2/16/2006<br>1-2.8 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-2.8-4<br>2/16/2006<br>2.8-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-0-1<br>2/10/2006<br>0-1 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | 0.2 | 0.8 | 12.9 |
| Sand (total calc'd) | -- | -- | -- | -- | 16.1 | 18 | 97.3 | 38.5 |
| Silt (total calc'd) | -- | -- | -- | -- | 62.3 | 59.2 | 1.9 | 35 |
| Clay (total calc'd) | -- | -- | -- | -- | 21.6 | 22.9 | -- | 13.3 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 83.9 | 82.1 | 1.9 | 49 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.52 | 2.18 | 0.11 | 1.81 |
| Total solids | -- | -- | -- | -- | 44.8 | 50 | 82.1 | 42.6 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 10 UJ | 9 UJ | 6 UJ | 8 UJ |
| Arsenic | 57 | 93 | -- | -- | 20 | 17 | 6 U | 20 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.5 | 0.5 | 0.3 U | 0.6 |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 35 | 31.1 | 8.9 | 33.5 |
| Cobalt | -- | -- | -- | -- | 9.7 | 9.2 | 3.6 | 8.4 |
| Copper | 390 | 390 | -- | -- | 88.4 | 72.9 | 9.3 | 58.2 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 49 | 43 | 3 U | 59 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.33 | 0.22 | 0.04 U | 0.2 |
| Molybdenum | -- | -- | -- | -- | 1 U | 1 | 0.6 U | 1.1 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC31<br>LDW-SC31-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-1-2.8<br>2/16/2006<br>1-2.8 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-2.8-4<br>2/16/2006<br>2.8-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-0-1<br>2/10/2006<br>0-1 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 22 | 21 | 6 | 22 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 10 U | 9 U | 6 U | 8 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.6 U | 0.6 U | 0.4 U | 0.5 |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 10 U | 9 U | 6 U | 8 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 75.2 | 68 | 36.1 | 68 |
| Zinc | 410 | 960 | -- | -- | 139 | 131 | 18.5 | 136 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 4 U | 4 U | 3.8 U | -- |
| Dibutyltin as ion | -- | -- | -- | -- | 13 | 5.7 U | 5.4 U | -- |
| Tributyltin as ion | -- | -- | -- | -- | 46 | 49 | 3.6 U | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 2.3 U | 2.7 U | -- | 3.2 U |
| Acenaphthylene | 66 | 66 | -- | -- | 2.3 U | 2.7 U | -- | 3.2 U |
| Acenaphthene | 16 | 57 | -- | -- | 2.3 U | 2.7 U | -- | 3.2 U |
| Anthracene | 220 | 1200 | -- | -- | 2.8 | 2.2 J | -- | 2.3 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 9.5 | 6.9 | -- | 6.6 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 8.7 | 9.2 | -- | 8.8 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 3.1 | 2.3 J | -- | 3.2 U |
| Chrysene | 110 | 460 | -- | -- | 13 | 11 | -- | 9.4 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.3 U | 2.7 U | -- | 3.2 U |
| Fluoranthene | 160 | 1200 | -- | -- | 24 | 15 | -- | 12 |
| Fluorene | 23 | 79 | -- | -- | 2.3 U | 2.7 U | -- | 3.2 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 3.9 | 2.6 J | -- | 2 J |
| Naphthalene | 99 | 170 | -- | -- | 2.3 U | 2.7 U | -- | 3.2 U |
| Phenanthrene | 100 | 480 | -- | -- | 5.6 | 4.6 | -- | 4.9 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC31<br>LDW-SC31-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-1-2.8<br>2/16/2006<br>1-2.8 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-2.8-4<br>2/16/2006<br>2.8-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-0-1<br>2/10/2006<br>0-1 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 16 | 20 | -- | 23 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 23 | 27 | -- | 25 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 8.3 | 6.9 J | -- | 7.2 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 100 | 94 J | -- | 87 J |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 59 U | 58 U | 20 U | 58 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 59 U | 58 U | 20 U | 58 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 59 U | 58 U | 20 U | 58 U |
| Acenaphthene | -- | -- | 500 | 730 | 59 U | 58 U | 20 U | 58 U |
| Anthracene | -- | -- | 960 | 4400 | 71 | 48 J | 20 U | 42 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 240 | 150 | 20 U | 120 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 220 | 200 | 20 U | 160 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 290 | 320 | 20 U | 270 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 280 | 270 | 20 U | 180 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 79 | 50 J | 20 U | 58 U |
| Chrysene | -- | -- | 1400 | 2800 | 330 | 250 | 20 U | 170 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 59 U | 58 U | 20 U | 58 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 600 | 320 | 20 U | 210 |
| Fluorene | -- | -- | 540 | 1000 | 59 U | 58 U | 20 U | 58 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 98 | 56 J | 20 U | 36 J |
| Naphthalene | -- | -- | 2100 | 2400 | 59 U | 58 U | 20 U | 58 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 140 | 100 | 20 U | 88 |
| Pyrene | -- | -- | 2600 | 3300 | 410 | 430 | 20 U | 420 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 570 | 590 | 20 U | 450 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 210 | 150 J | 20 U | 130 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2550 | 2050 J | 20 U | 1570 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 2760 | 2190 J | 20 U | 1700 J |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC31<br>LDW-SC31-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-1-2.8<br>2/16/2006<br>1-2.8 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-2.8-4<br>2/16/2006<br>2.8-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-0-1<br>2/10/2006<br>0-1 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.23 U | 0.27 U | -- | 0.32 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.14 J | 0.27 U | -- | 0.32 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.23 U | 0.27 U | -- | 0.32 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.19 U | 0.22 U | -- | 0.32 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 5.9 U | 5.9 U | 5.8 U | 5.8 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 59 U | 58 U | 20 U | 58 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 3.5 J | 5.9 U | 5.8 U | 5.8 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 5.9 U | 5.9 U | 5.8 U | 5.8 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 4.9 U | 4.9 U | 0.96 U | 5.8 U |
| Nitrobenzene | -- | -- | -- | -- | 59 U | 58 U | 20 U | 58 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 11 | 12 | -- | 11 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.5 | 0.96 | -- | 1.8 |
| Diethyl phthalate | 61 | 110 | -- | -- | 2.3 U | 2.7 U | -- | 3.2 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 2.3 U | 2.7 U | -- | 3.2 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 1.3 J | 2.7 U | -- | 3.2 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 2.3 U | 2.7 U | -- | 3.2 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 270 | 260 | 20 U | 200 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 38 | 21 | 5.8 U | 32 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 59 U | 58 U | 20 U | 58 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 59 U | 58 U | 20 U | 58 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 33 J | 58 U | 11 J | 58 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 59 U | 58 U | 20 U | 58 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 59 U | 58 U | 20 U | 58 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 290 U | 290 U | 97 U | 290 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC31<br>LDW-SC31-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-1-2.8<br>2/16/2006<br>1-2.8 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-2.8-4<br>2/16/2006<br>2.8-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-0-1<br>2/10/2006<br>0-1 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 290 U | 290 U | 97 U | 290 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 5.9 U | 5.9 U | 5.8 U | 5.8 UJ |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 590 UJ | 580 UJ | 200 UJ | 580 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | 5.9 U | 5.9 U | 5.8 U | 5.8 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 59 U | 58 U | 20 U | 58 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 290 U | 290 U | 97 U | 290 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 290 U | 290 U | 97 U | 290 U |
| 2-Nitrophenol | -- | -- | -- | -- | 290 U | 290 U | 97 U | 290 U |
| 4-Nitrophenol | -- | -- | -- | -- | 290 UJ | 290 UJ | 97 UJ | 290 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 29 U | 29 U | 29 U | 29 U |
| Phenol | 420 | 1200 | -- | -- | 59 U | 58 U | 20 U | 69 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 2.3 U | 2.7 U | -- | 3.2 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.19 U | 0.22 U | -- | 0.32 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.1 U | 1 U | -- | 1.8 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 290 U | 290 U | 97 U | 290 U |
| 3-Nitroaniline | -- | -- | -- | -- | 290 U | 290 U | 97 U | 290 U |
| 4-Nitroaniline | -- | -- | -- | -- | 290 U | 290 U | 97 U | 290 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 290 UJ | 290 UJ | 97 UJ | 290 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | 290 UJ | 290 UJ | 97 UJ | 290 UJ |
| Aniline | -- | -- | -- | -- | 59 UJ | 58 UJ | 20 UJ | 58 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | 29 U | 29 U | 29 U | 29 U |
| Benzoic acid | 650 | 650 | -- | -- | 170 J | 120 J | 57 J | 160 |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 59 U | 58 U | 20 U | 58 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 4.9 U | 4.9 U | 0.96 U | 5.8 U |
| Hexachloroethane | -- | -- | -- | -- | 59 U | 58 U | 20 U | 58 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 290 UJ | 290 UJ | 97 UJ | 290 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC31<br>LDW-SC31-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-1-2.8<br>2/16/2006<br>1-2.8 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-2.8-4<br>2/16/2006<br>2.8-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-0-1<br>2/10/2006<br>0-1 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 59 U | 58 U | 20 U | 58 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 29 U | 29 U | 29 U | 29 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 29 U | 29 U | 29 U | 29 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 27 U | 22 U | 5.8 U | 33 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 59 U | 58 U | 20 U | 58 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 59 U | 58 U | 20 U | 58 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 59 U | 58 U | 20 U | 58 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 59 U | 58 U | 20 U | 58 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| 2,4'-DDE | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| 2,4'-DDT | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| 4,4'-DDD | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| 4,4'-DDE | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| 4,4'-DDT | -- | -- | -- | -- | 32 U | 22 U | 1.9 U | -- |
| Aldrin | -- | -- | -- | -- | 4.9 U | 4.9 U | 0.96 U | -- |
| alpha-Chlordane | -- | -- | -- | -- | 4.9 U | 4.9 U | 0.96 U | -- |
| alpha-BHC | -- | -- | -- | -- | 4.9 U | 4.9 U | 0.96 U | -- |
| beta-BHC | -- | -- | -- | -- | 4.9 U | 4.9 U | 0.96 U | -- |
| delta-BHC | -- | -- | -- | -- | 4.9 U | 4.9 U | 0.96 U | -- |
| gamma-BHC | -- | -- | -- | -- | 4.9 U | 4.9 U | 0.96 U | -- |
| gamma-Chlordane | -- | -- | -- | -- | 4.9 U | 4.9 U | 0.96 U | -- |
| Oxychlordane | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| Dieldrin | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| alpha-Endosulfan | -- | -- | -- | -- | 4.9 U | 4.9 U | 0.96 U | -- |
| beta-Endosulfan | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| Endosulfan sulfate | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| Endrin | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC31<br>LDW-SC31-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-1-2.8<br>2/16/2006<br>1-2.8 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-2.8-4<br>2/16/2006<br>2.8-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-0-1<br>2/10/2006<br>0-1 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| Endrin ketone | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| Heptachlor | -- | -- | -- | -- | 4.9 U | 4.9 U | 0.96 U | -- |
| Heptachlor epoxide | -- | -- | -- | -- | 4.9 U | 4.9 U | 0.96 U | -- |
| Toxaphene | -- | -- | -- | -- | 490 U | 490 U | 96 U | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | 32 U | 22 U | 1.9 U | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | 9.8 U | 9.9 U | 1.9 U | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | 49 U | 49 U | 9.6 U | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **15** | **15** | -- | **56** |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 U | 3.9 U | 74 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U | 3.9 U | 74 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 3.9 U | 74 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U | 3.9 U | 74 U |
| Aroclor-1248 | -- | -- | -- | -- | 69 | 100 | 3.9 U | 430 |
| Aroclor-1254 | -- | -- | -- | -- | 160 | 140 | 2.7 J | 380 |
| Aroclor-1260 | -- | -- | -- | -- | 140 | 88 | 3.9 U | 200 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 370 | 330 | 2.7 J | 1010 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC31<br>LDW-SC31-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-1-2.8<br>2/16/2006<br>1-2.8 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-2.8-4<br>2/16/2006<br>2.8-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-0-1<br>2/10/2006<br>0-1 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC31<br>LDW-SC31-0-1<br>2/16/2006<br>0-1 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-1-2.8<br>2/16/2006<br>1-2.8 FT<br>East Nav. Channel - POS | LDW-SC31<br>LDW-SC31-2.8-4<br>2/16/2006<br>2.8-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-0-1<br>2/10/2006<br>0-1 FT<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC32<br>LDW-SC32-1-2<br>2/10/2006<br>1-2 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-2-4<br>2/10/2006<br>2-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-5.2-8<br>2/10/2006<br>5.2-8 FT<br>East Nav. Channel - POS | LDW-SC34<br>LDW-SC34-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 3.1 | 4.2 | -- | 1.4 |
| Sand (total calc'd) | -- | -- | -- | -- | 29.4 | 51.7 | -- | 27 |
| Silt (total calc'd) | -- | -- | -- | -- | 62 | 37.5 | -- | 50.8 |
| Clay (total calc'd) | -- | -- | -- | -- | 5.6 | 6.7 | -- | 20.8 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 67.6 | 44.2 | -- | 71.6 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.16 | 1.47 | 0.724 | 2.9 |
| Total solids | -- | -- | -- | -- | 37.4 | 45.8 | 75.7 | 46.1 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 10 UJ | 10 UJ | -- | 10 UJ |
| Arsenic | 57 | 93 | -- | -- | 40 | 30 | -- | 20 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 1.7 | 1 | -- | 0.4 U |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 46 | 37 | -- | 34 |
| Cobalt | -- | -- | -- | -- | 9.6 | 7.9 | -- | 9.6 |
| Copper | 390 | 390 | -- | -- | 90.2 | 60 | -- | 78.4 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 87 | 51 | -- | 60 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.3 | 0.22 | -- | 0.26 |
| Molybdenum | -- | -- | -- | -- | 1 U | 1 U | -- | 1 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC32<br>LDW-SC32-1-2<br>2/10/2006<br>1-2 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-2-4<br>2/10/2006<br>2-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-5.2-8<br>2/10/2006<br>5.2-8 FT<br>East Nav. Channel - POS | LDW-SC34<br>LDW-SC34-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 30 | 23 | -- | 26 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 10 U | 10 U | -- | 10 U |
| Silver | 6.1 | 6.1 | -- | -- | 1.1 | 1 | -- | 0.6 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 10 U | 10 U | -- | 10 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 76.7 | 71.5 | -- | 67.5 |
| Zinc | 410 | 960 | -- | -- | 287 | 160 | -- | 188 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 7.4 | 6 | 9.1 U | 3.8 U |
| Acenaphthylene | 66 | 66 | -- | -- | 5.1 U | 1.4 U | 9.1 U | 3.8 U |
| Acenaphthene | 16 | 57 | -- | -- | ***120*** | **20** | 9.1 U | 3.8 U |
| Anthracene | 220 | 1200 | -- | -- | 31 | 5.7 | 9.1 U | 2.9 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 85 | 10 | 9.1 U | 9 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 34 | 7.5 | 9.1 U | 7.9 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 3.7 J | 1.4 | 9.1 U | 2.2 J |
| Chrysene | 110 | 460 | -- | -- | 77 | 14 | 9.1 U | 12 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 5.1 U | 1.4 U | 0.91 U | 3.8 U |
| Fluoranthene | 160 | 1200 | -- | -- | **220** | 40 | 9.1 U | 28 |
| Fluorene | 23 | 79 | -- | -- | ***160*** | 18 | 9.1 U | 3.8 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 5.2 | 1.5 | 9.1 U | 2.6 J |
| Naphthalene | 99 | 170 | -- | -- | 12 | 9.5 | 9.1 U | 3.8 U |
| Phenanthrene | 100 | 480 | -- | -- | **320** | 31 | 9.1 U | 9.7 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC32<br>LDW-SC32-1-2<br>2/10/2006<br>1-2 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-2-4<br>2/10/2006<br>2-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-5.2-8<br>2/10/2006<br>5.2-8 FT<br>East Nav. Channel - POS | LDW-SC34<br>LDW-SC34-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 100 | 25 | 9.1 U | 19 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 120 | 26 | 9.1 U | 23 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | **650** | 84 | 9.1 U | 12 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 640 J | 130 | 9.1 U | 100 J |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 160 | 87 | 66 U | 110 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 86 | 88 | 66 U | 110 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 59 U | 20 U | 66 U | 110 U |
| Acenaphthene | -- | -- | 500 | 730 | 1400 | 300 | 66 U | 110 U |
| Anthracene | -- | -- | 960 | 4400 | 360 | 84 | 66 U | 84 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 990 | 150 | 66 U | 260 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 400 | 110 | 66 U | 230 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 850 | 210 | 66 U | 380 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 510 | 170 | 66 U | 280 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 43 J | 20 | 66 U | 63 J |
| Chrysene | -- | -- | 1400 | 2800 | 890 | 210 | 66 U | 360 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 59 U | 20 U | 6.6 U | 110 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 2500 | 590 | 66 U | 810 |
| Fluorene | -- | -- | 540 | 1000 | 1900 | 260 | 66 U | 110 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 60 | 22 | 66 U | 75 J |
| Naphthalene | -- | -- | 2100 | 2400 | 140 | 140 | 66 U | 110 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 3700 | 460 | 66 U | 280 |
| Pyrene | -- | -- | 2600 | 3300 | 1200 | 370 | 66 U | 540 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 1360 | 380 | 66 U | 660 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 7500 | 1240 | 66 U | 360 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 7400 J | 1850 | 66 U | 3000 J |
| Total PAH (calc'd) | -- | -- | -- | -- | 14900 J | 3100 | 66 U | 3360 J |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC32<br>LDW-SC32-1-2<br>2/10/2006<br>1-2 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-2-4<br>2/10/2006<br>2-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-5.2-8<br>2/10/2006<br>5.2-8 FT<br>East Nav. Channel - POS | LDW-SC34<br>LDW-SC34-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.51 U | 0.4 U | 0.91 U | 0.23 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.51 U | 0.4 U | 0.91 U | 0.14 J |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.36 J | 0.28 J | **0.91 U** | 0.23 UJ |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.51 U** | **0.4 U** | **0.91 U** | 0.034 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 5.9 U | 5.9 U | 6.6 U | 6.7 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 59 U | 20 U | 6.6 U | 110 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 5.9 U | 5.9 U | 6.6 U | 4 J |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 4.2 J | 4.1 J | 6.6 U | 6.7 UJ |
| Hexachlorobenzene | -- | -- | 22 | 70 | 5.9 U | 5.9 U | 6.6 U | 0.98 U |
| Nitrobenzene | -- | -- | -- | -- | 59 U | 20 U | 66 U | 110 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | **56** | 31 | 9.1 U | 32 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 3.8 | 3.1 | 0.91 U | **15** |
| Diethyl phthalate | 61 | 110 | -- | -- | 5.1 U | 1.4 U | 9.1 U | 3.8 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 5.1 U | 1.4 U | 0.91 U | 3.8 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 5.1 U | 1.4 U | 9.1 U | 3.8 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 5.1 U | 1.4 U | 9.1 U | 3.8 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 650 | 460 | 66 U | 920 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 44 | 45 | 6.6 U | 440 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 59 U | 20 U | 66 U | 110 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 59 U | 20 U | 6.6 U | 110 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 59 U | 20 U | 66 U | 110 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 59 U | 20 U | 66 U | 110 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 59 U | 20 U | 66 U | 110 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 300 U | 98 U | 330 U | 560 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC32<br>LDW-SC32-1-2<br>2/10/2006<br>1-2 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-2-4<br>2/10/2006<br>2-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-5.2-8<br>2/10/2006<br>5.2-8 FT<br>East Nav. Channel - POS | LDW-SC34<br>LDW-SC34-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 300 U | 98 U | 330 U | 560 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 5.9 UJ | 11 J | 6.6 UJ | 6.7 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 590 UJ | 200 UJ | 660 U | 1100 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | 5.9 U | 5.9 U | 6.6 U | 6.7 J |
| 4-Methylphenol | 670 | 670 | -- | -- | 59 U | 20 U | 66 U | 110 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 300 U | 98 U | 330 U | 560 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 300 U | 98 U | 330 U | 560 U |
| 2-Nitrophenol | -- | -- | -- | -- | 300 U | 98 U | 330 U | 560 U |
| 4-Nitrophenol | -- | -- | -- | -- | 300 U | 98 U | 330 U | 560 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 20 J | 30 U | 25 J | 76 |
| Phenol | 420 | 1200 | -- | -- | 59 U | 20 U | 66 U | 110 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | ***100*** | 12 | 9.1 U | 3.8 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.51 U | 0.4 U | 0.91 U | 0.034 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 10 U | 6.8 U | 0.91 U | 1.7 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 300 U | 98 U | 330 U | 560 U |
| 3-Nitroaniline | -- | -- | -- | -- | 300 U | 98 U | 330 U | 560 UJ |
| 4-Nitroaniline | -- | -- | -- | -- | 300 U | 98 U | 330 U | 560 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 300 UJ | 98 UJ | 330 U | 560 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | 300 UJ | 98 UJ | 330 U | 560 UJ |
| Aniline | -- | -- | -- | -- | 59 UJ | 20 UJ | 66 U | 110 UJ |
| Benzyl alcohol | 57 | 73 | -- | -- | 30 U | 30 U | 33 U | 34 |
| Benzoic acid | 650 | 650 | -- | -- | 59 U | 59 U | 600 U | 160 U |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 1200 | 170 | 66 U | 110 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 5.9 U | 5.9 U | 6.6 U | 0.98 U |
| Hexachloroethane | -- | -- | -- | -- | 59 U | 20 U | 66 U | 110 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 300 U | 98 U | 330 U | 560 UJ |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC32<br>LDW-SC32-1-2<br>2/10/2006<br>1-2 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-2-4<br>2/10/2006<br>2-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-5.2-8<br>2/10/2006<br>5.2-8 FT<br>East Nav. Channel - POS | LDW-SC34<br>LDW-SC34-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 59 U | 20 U | 66 U | 110 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 70 | 41 | 33 U | 34 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 30 U | 30 U | 33 U | 34 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 120 U | 100 U | 6.6 U | 48 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 59 U | 20 U | 66 U | 110 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 59 U | 20 U | 66 U | 110 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 59 U | 20 U | 66 U | 110 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 59 U | 20 U | 66 U | 110 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | 2 U |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | 5.7 U |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | 13 U |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | 0.98 U |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | 0.98 U |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | 0.98 U |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | 0.98 U |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | 7 |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | 3.1 U |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | 3.2 U |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | 2 U |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | 2 U |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | 0.98 U |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | 2 U |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | 9.2 U |
| Endrin | -- | -- | -- | -- | -- | -- | -- | 11 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC32<br>LDW-SC32-1-2<br>2/10/2006<br>1-2 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-2-4<br>2/10/2006<br>2-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-5.2-8<br>2/10/2006<br>5.2-8 FT<br>East Nav. Channel - POS | LDW-SC34<br>LDW-SC34-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | 2 U |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | 2 U |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | 0.98 U |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | 2.5 U |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | 98 U |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | 2 U |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | 13 U |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | 3.2 U |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | 9.8 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | ***150*** | ***170*** | 0.52 U | 7.2 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 160 U | 140 U | 3.8 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 160 U | 140 U | 3.8 U | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 160 U | 140 U | 3.8 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 160 U | 140 U | 3.8 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 540 | 830 | 3.8 U | 99 U |
| Aroclor-1254 | -- | -- | -- | -- | 850 | 950 | 3.8 U | 110 |
| Aroclor-1260 | -- | -- | -- | -- | 330 | 670 | 3.8 U | 100 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 1720 | 2450 | 3.8 U | 210 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC32<br>LDW-SC32-1-2<br>2/10/2006<br>1-2 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-2-4<br>2/10/2006<br>2-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-5.2-8<br>2/10/2006<br>5.2-8 FT<br>East Nav. Channel - POS | LDW-SC34<br>LDW-SC34-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC32<br>LDW-SC32-1-2<br>2/10/2006<br>1-2 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-2-4<br>2/10/2006<br>2-4 FT<br>East Nav. Channel - POS | LDW-SC32<br>LDW-SC32-5.2-8<br>2/10/2006<br>5.2-8 FT<br>East Nav. Channel - POS | LDW-SC34<br>LDW-SC34-0-1<br>2/17/2006<br>0-1 FT<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC34<br>LDW-SC34-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS | LDW-SC34<br>LDW-SC34-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SS62<br>LDW-SS207-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS327<br>LDW-SS327-010<br>10/2/2006 12:25:00 PM<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 2.4 | 5.8 | 0.1 U | 0.8 |
| Sand (total calc'd) | -- | -- | -- | -- | 21.8 | 44.1 | 15.2 | 57.1 |
| Silt (total calc'd) | -- | -- | -- | -- | 62 | 39.9 | 63.2 | 30.3 |
| Clay (total calc'd) | -- | -- | -- | -- | 13.7 | 10.2 | 21.6 | 11.7 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 76 | 50.1 | 84.8 | 42 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 3.02 | 2.05 | 2.84 | 1.84 |
| Total solids | -- | -- | -- | -- | 50 | 59.9 | 42.7 | 59.8 |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | 39.4 | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | 21.8 | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | 48 J | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 10 UJ | 8 UJ | 0.4 UJ | 0.3 UJ |
| Arsenic | 57 | 93 | -- | -- | 20 | 15 | 16.5 | 10.7 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.9 | 0.3 U | 0.8 | 0.4 |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 50 | 30.9 | 39 | 21.7 |
| Cobalt | -- | -- | -- | -- | 8.9 | 8.6 | 10.9 | 6.8 |
| Copper | 390 | 390 | -- | -- | 91.4 | 51.3 | 107 | 52.5 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 87 | 78 | 58 | 34 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.25 | 0.12 | 0.28 | 0.14 |
| Molybdenum | -- | -- | -- | -- | 4 | 1.3 | 2 | 0.5 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC34<br>LDW-SC34-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS | LDW-SC34<br>LDW-SC34-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SS62<br>LDW-SS207-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS327<br>LDW-SS327-010<br>10/2/2006 12:25:00 PM<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 29 | 33 | 24 | 18.7 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 10 U | 8 U | 10 U | 0.7 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.6 U | 0.5 U | 0.7 U | 0.4 J |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 10 U | 8 U | 0.4 U | 0.3 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 65.7 | 60.4 | 77.2 | 46.2 |
| Zinc | 410 | 960 | -- | -- | 253 | 136 | 160 | 143 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 4.3 U | 4.8 U | 2.1 U | 3.4 U |
| Acenaphthylene | 66 | 66 | -- | -- | 4.3 U | 4.8 U | 1.2 J | 3.4 U |
| Acenaphthene | 16 | 57 | -- | -- | 4.3 U | 4.8 U | 2.1 U | 3.4 U |
| Anthracene | 220 | 1200 | -- | -- | 5.3 J | 4.8 U | 4.9 | 2.1 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 14 | 6.3 | 11 | 5.3 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 13 | 7.3 | 12 | 6.5 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 6.6 | 4.8 U | 3.4 | 4.4 |
| Chrysene | 110 | 460 | -- | -- | 24 | 9.3 | 19 | 9.2 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 4.3 U | 4.8 U | 2.1 U | 1.7 |
| Fluoranthene | 160 | 1200 | -- | -- | 43 J | 15 | 26 | 13 |
| Fluorene | 23 | 79 | -- | -- | 4.3 U | 4.8 U | 1.3 J | 3.4 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 6.6 | 2.5 J | 4.2 | 3.8 |
| Naphthalene | 99 | 170 | -- | -- | 4.3 U | 4.8 U | 4.2 | 3.4 U |
| Phenanthrene | 100 | 480 | -- | -- | 11 J | 5.4 | 8.5 | 4.2 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC34<br>LDW-SC34-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS | LDW-SC34<br>LDW-SC34-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SS62<br>LDW-SS207-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS327<br>LDW-SS327-010<br>10/2/2006 12:25:00 PM<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 30 J | 22 | 17 | 13 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 33 | 21 | 31 | 17 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 17 J | 5.4 | 20 J | 6.4 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 170 J | 83 J | 120 | 74 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | 130 U | 99 U | -- | 62 U |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 130 U | 99 U | 59 U | 62 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 130 U | 99 U | 34 J | 62 U |
| Acenaphthene | -- | -- | 500 | 730 | 130 U | 99 U | 59 U | 62 U |
| Anthracene | -- | -- | 960 | 4400 | 160 J | 99 U | 140 | 39 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 430 | 130 | 320 | 97 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 400 | 150 | 330 | 120 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 530 | 220 | 390 | 200 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 470 | 210 | 500 | 110 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 200 | 99 U | 97 | 81 |
| Chrysene | -- | -- | 1400 | 2800 | 720 | 190 | 530 | 170 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 130 U | 99 U | 59 U | 31 |
| Fluoranthene | -- | -- | 1700 | 2500 | 1300 J | 300 | 730 | 240 |
| Fluorene | -- | -- | 540 | 1000 | 130 U | 99 U | 36 J | 62 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 200 | 52 J | 120 | 70 |
| Naphthalene | -- | -- | 2100 | 2400 | 130 U | 99 U | 120 | 62 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 340 J | 110 | 240 | 78 |
| Pyrene | -- | -- | 2600 | 3300 | 920 J | 460 | 490 | 240 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 1000 | 430 | 890 | 310 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 500 J | 110 | 570 J | 117 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 5200 J | 1710 J | 3510 | 1360 |
| Total PAH (calc'd) | -- | -- | -- | -- | 5700 J | 1820 J | 4080 J | 1480 J |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC34<br>LDW-SC34-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS | LDW-SC34<br>LDW-SC34-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SS62<br>LDW-SS207-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS327<br>LDW-SS327-010<br>10/2/2006 12:25:00 PM<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.15 J | 0.29 U | 0.23 U | 0.34 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.23 J | 0.29 U | 0.23 U | 0.34 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.26 UJ | 0.29 UJ | 0.23 U | 0.34 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.16 U | 0.047 U | 0.23 U | 0.34 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 4.6 J | 6 U | 6.6 U | 6.2 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 130 U | 99 U | 59 U | 62 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 7 J | 6 U | 6.6 U | 6.2 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 7.8 UJ | 6 UJ | 6.6 U | 6.2 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 4.9 U | 0.96 U | 6.6 U | 6.2 U |
| Nitrobenzene | -- | -- | -- | -- | 130 U | 99 U | 59 U | 62 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | ***130*** | 33 | 19 U | 11 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | **13** | 2.1 | 0.35 | 0.98 |
| Diethyl phthalate | 61 | 110 | -- | -- | 4.3 U | 4.8 U | 0.23 U | 3.4 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 4.3 U | 4.8 U | 0.23 U | 0.34 UJ |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 6 UJ | 4.8 U | 2.1 U | 3.4 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 7.3 | 3.1 J | 2.1 U | 3.4 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 3900 | 670 | 550 U | 210 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 400 | 44 | 9.8 | 18 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 130 U | 99 U | 6.6 U | 62 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 130 U | 99 U | 6.6 U | 6.2 UJ |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 180 UJ | 99 U | 59 U | 62 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 220 | 64 J | 59 U | 62 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 130 U | 99 U | 59 U | 62 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 650 U | 500 U | 300 U | 310 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC34<br>LDW-SC34-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS | LDW-SC34<br>LDW-SC34-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SS62<br>LDW-SS207-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS327<br>LDW-SS327-010<br>10/2/2006 12:25:00 PM<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 650 U | 500 U | 300 U | 310 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 7.8 U | 6 U | 6.6 U | 6.2 UJ |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 1300 U | 990 UJ | 590 U | 620 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | 9.3 J | 6 U | 6.6 U | 6.2 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 130 U | 99 U | 59 U | 86 |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 650 U | 500 U | 300 U | 310 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 650 U | 500 U | 300 U | 310 U |
| 2-Nitrophenol | -- | -- | -- | -- | 650 U | 500 U | 300 U | 310 U |
| 4-Nitrophenol | -- | -- | -- | -- | 650 U | 500 U | 300 U | 310 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 39 U | 30 U | 33 U | 31 U |
| Phenol | 420 | 1200 | -- | -- | 130 U | 99 U | 59 U | 80 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 4.3 U | 4.8 U | 2.1 U | 3.4 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.16 U | 0.047 U | 0.23 U | 0.34 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 9.6 U | 1.6 U | 0.23 U | 0.34 UJ |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 650 U | 500 U | 300 U | 310 U |
| 3-Nitroaniline | -- | -- | -- | -- | 650 UJ | 500 UJ | 300 U | 310 U |
| 4-Nitroaniline | -- | -- | -- | -- | 650 U | 500 U | 300 U | 310 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 650 UJ | 500 UJ | 300 U | 310 UJ |
| 4-Chloroaniline | -- | -- | -- | -- | 650 UJ | 500 UJ | 300 U | 310 UJ |
| Aniline | -- | -- | -- | -- | 130 UJ | 99 UJ | 59 U | 62 U |
| Benzyl alcohol | 57 | 73 | -- | -- | ***210*** | 20 J | 33 U | 31 U |
| Benzoic acid | 650 | 650 | -- | -- | 140 U | 110 U | 66 U | 620 U |
| Carbazole | -- | -- | -- | -- | -- | -- | 45 J | -- |
| Dibenzofuran | -- | -- | 540 | 700 | 130 U | 99 U | 59 U | 62 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 4.9 U | 0.96 U | 6.6 U | 6.2 U |
| Hexachloroethane | -- | -- | -- | -- | 130 U | 99 U | 59 U | 62 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 650 UJ | 500 UJ | 300 U | 310 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC34<br>LDW-SC34-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS | LDW-SC34<br>LDW-SC34-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SS62<br>LDW-SS207-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS327<br>LDW-SS327-010<br>10/2/2006 12:25:00 PM<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 130 U | 99 U | 59 U | 62 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 39 U | 30 U | 33 U | 31 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 39 U | 30 U | 33 U | 31 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 290 U | 32 U | 6.6 U | 6.2 UJ |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 130 UJ | 99 U | 59 U | 62 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 130 U | 99 U | 59 U | 62 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 130 U | 99 U | 59 U | 62 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 130 U | 99 U | 59 U | 62 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | 9.8 U | 1.9 U | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | 9.8 U | 1.9 U | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | 9.8 U | 1.9 U | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | 9.8 U | 3.6 U | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | 9.8 U | 1.9 U | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | 41 U | 8.3 U | -- | -- |
| Aldrin | -- | -- | -- | -- | 4.9 U | 0.96 U | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | 9.2 U | 2.3 U | -- | -- |
| alpha-BHC | -- | -- | -- | -- | 4.9 U | 0.96 U | -- | -- |
| beta-BHC | -- | -- | -- | -- | 4.9 U | 2 U | -- | -- |
| delta-BHC | -- | -- | -- | -- | 19 | 0.96 U | -- | -- |
| gamma-BHC | -- | -- | -- | -- | 4.9 U | 0.96 U | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | 14 U | 1.7 U | -- | -- |
| Oxychlordane | -- | -- | -- | -- | 9.8 U | 1.9 U | -- | -- |
| Dieldrin | -- | -- | -- | -- | 9.8 U | 1.9 U | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | 4.9 U | 0.96 U | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | 9.8 U | 1.9 U | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | 9.8 U | 3.4 U | -- | -- |
| Endrin | -- | -- | -- | -- | 9.8 U | 1.9 U | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC34<br>LDW-SC34-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS | LDW-SC34<br>LDW-SC34-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SS62<br>LDW-SS207-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS327<br>LDW-SS327-010<br>10/2/2006 12:25:00 PM<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | 23 U | 1.9 U | -- | -- |
| Endrin ketone | -- | -- | -- | -- | 9.8 U | 1.9 U | -- | -- |
| Heptachlor | -- | -- | -- | -- | 4.9 U | 0.96 U | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | 4.9 U | 4.1 U | -- | -- |
| Toxaphene | -- | -- | -- | -- | 490 U | 96 U | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | 9.8 U | 1.9 U | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | 41 U | 8.3 U | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | 14 U | 2.3 U | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | 49 U | 9.6 U | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 9.3 | **12** | 11 | 11 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 19 U | 20 U | 31 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 19 U | 20 U | 31 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 19 U | 20 U | 31 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 19 U | 20 U | 31 U |
| Aroclor-1248 | -- | -- | -- | -- | 82 | 58 | 76 | 73 |
| Aroclor-1254 | -- | -- | -- | -- | 120 | 110 | 130 | 74 |
| Aroclor-1260 | -- | -- | -- | -- | 77 | 81 | 110 | 64 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 280 | 250 | 320 | 211 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC34<br>LDW-SC34-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS | LDW-SC34<br>LDW-SC34-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SS62<br>LDW-SS207-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS327<br>LDW-SS327-010<br>10/2/2006 12:25:00 PM<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SC34<br>LDW-SC34-1-2<br>2/17/2006<br>1-2 FT<br>West Nav. Channel - POS | LDW-SC34<br>LDW-SC34-2-4<br>2/17/2006<br>2-4 FT<br>West Nav. Channel - POS | LDW-SS62<br>LDW-SS207-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS327<br>LDW-SS327-010<br>10/2/2006 12:25:00 PM<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS60<br>LDW-SS60-010<br>1/19/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS61<br>LDW-SS61-010<br>3/10/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS62<br>LDW-SS62-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS63<br>LDW-SS63-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 3.5 | 52.6 | 0.1 U | 2.7 |
| Sand (total calc'd) | -- | -- | -- | -- | 81.7 | 31.1 | 13.5 | 76.7 |
| Silt (total calc'd) | -- | -- | -- | -- | 10.4 | 10.7 | 63.2 | 14.4 |
| Clay (total calc'd) | -- | -- | -- | -- | 4.4 | 5.6 | 23.2 | 6.1 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 14.8 | 16.3 | 86.4 | 20.5 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.08 | 1.68 | 2.92 | 2.39 |
| Total solids | -- | -- | -- | -- | 68 | 69.7 | 42.4 | 63.9 |
| Total solids (preserved) | -- | -- | -- | -- | 67.6 | 57.9 | 39.9 | 69.4 |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | 2.53 | 3.48 | 22.1 | 13.2 |
| Sulfides (total) | -- | -- | -- | -- | 3.3 UJ | 220 J | 35 J | 41 J |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 0.3 UJ | 0.3 UJ | 0.5 UJ | 0.3 UJ |
| Arsenic | 57 | 93 | -- | -- | 4.1 | 6.1 | 16.8 | 10.2 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.3 U | 0.3 U | 0.8 | 0.3 U |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 12.1 | 20.9 | 38 | 24.7 |
| Cobalt | -- | -- | -- | -- | 4.4 | 6.6 | 10.9 | 6.1 |
| Copper | 390 | 390 | -- | -- | 18.4 | 38.4 | 109 | 48.3 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 9 | 19 | 58 | 28 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.07 U | 0.08 | **0.5** | 0.08 |
| Molybdenum | -- | -- | -- | -- | 0.8 | 1.1 | 2 | 1.1 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS60<br>LDW-SS60-010<br>1/19/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS61<br>LDW-SS61-010<br>3/10/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS62<br>LDW-SS62-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS63<br>LDW-SS63-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 9 | 15 | 24 | 21 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 7 U | 7 U | 10 U | 7 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.4 U | 0.4 U | 0.7 U | 0.4 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 0.3 U | 0.3 U | 0.5 U | 0.3 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 40.6 | 48.2 | 77.4 | 48.1 |
| Zinc | 410 | 960 | -- | -- | 38 | 70.4 | 159 | 93 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 1.8 U | 1.1 U | 2.1 U | 4.1 U |
| Acenaphthylene | 66 | 66 | -- | -- | 1.8 U | 1.1 U | 2.1 U | 4.1 U |
| Acenaphthene | 16 | 57 | -- | -- | 1.8 U | 1.1 U | 2.1 U | 4.1 U |
| Anthracene | 220 | 1200 | -- | -- | 1.8 U | 1.1 U | 4.1 | 2.6 J |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 4.3 | 2.4 | 9.2 | 5.9 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 2.4 | 3.6 | 9.9 | 4.6 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 1.8 U | 2.2 | 2.8 | 4.1 U |
| Chrysene | 110 | 460 | -- | -- | 7.8 | 4.2 | 15 | 11 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 1.8 U | 1.1 U | 2.1 U | 4.1 U |
| Fluoranthene | 160 | 1200 | -- | -- | 17 | 4 | 24 | 20 |
| Fluorene | 23 | 79 | -- | -- | 1.8 U | 1.1 U | 1.3 J | 4.1 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 0.6 U | 2.2 | 3.8 | 0.63 |
| Naphthalene | 99 | 170 | -- | -- | 1.8 U | 1.1 U | 2.1 U | 4.1 U |
| Phenanthrene | 100 | 480 | -- | -- | 2.8 | 1.7 | 7.2 | 7.9 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS60<br>LDW-SS60-010<br>1/19/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS61<br>LDW-SS61-010<br>3/10/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS62<br>LDW-SS62-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS63<br>LDW-SS63-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 9.2 | 7.7 | 15 | 13 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 5.7 | 8.3 | 26 | 16 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 2.8 | 1.7 | 13 J | 10 J |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 46 | 35 | 110 | 71 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 19 U | 19 U | 60 U | 98 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 19 U | 19 U | 60 U | 98 U |
| Acenaphthene | -- | -- | 500 | 730 | 19 U | 19 U | 60 U | 98 U |
| Anthracene | -- | -- | 960 | 4400 | 19 U | 19 U | 120 | 62 J |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 46 | 40 | 270 | 140 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 26 | 60 | 290 | 110 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 38 | 74 | 390 | 180 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 24 | 66 | 380 | 210 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 19 U | 37 | 82 | 98 U |
| Chrysene | -- | -- | 1400 | 2800 | 84 | 71 | 440 | 260 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 19 U | 19 U | 60 U | 98 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 180 | 68 | 700 | 470 |
| Fluorene | -- | -- | 540 | 1000 | 19 U | 19 U | 38 J | 98 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 6.5 U | 37 | 110 | 15 |
| Naphthalene | -- | -- | 2100 | 2400 | 19 U | 19 U | 60 U | 98 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 30 | 28 | 210 | 190 |
| Pyrene | -- | -- | 2600 | 3300 | 99 | 130 | 450 | 310 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 62 | 140 | 770 | 390 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 30 | 28 | 370 J | 250 J |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 500 | 580 | 3110 | 1700 |
| Total PAH (calc'd) | -- | -- | -- | -- | 530 | 610 | 3480 J | 1950 J |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS60<br>LDW-SS60-010<br>1/19/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS61<br>LDW-SS61-010<br>3/10/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS62<br>LDW-SS62-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS63<br>LDW-SS63-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.6 U | 0.39 U | 0.22 U | 0.27 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.6 U | 0.39 U | 0.22 U | 0.27 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.6 U | 0.39 U | 0.22 U | 0.27 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.6 U** | 0.2 UJ | 0.22 U | 0.041 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6.5 U | 6.5 U | 6.5 U | 6.5 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 19 U | 19 U | 60 U | 98 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6.5 U | 6.5 U | 6.5 U | 6.5 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6.5 U | 6.5 U | 6.5 U | 6.5 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 6.5 U | 3.3 UJ | 6.5 U | 0.97 U |
| Nitrobenzene | -- | -- | -- | -- | 19 U | 19 UJ | 60 U | 98 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 1.9 | 4.4 | 16 U | 6.3 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.6 U | 0.39 U | 1.6 J | 0.27 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.6 U | 0.43 U | 0.22 U | 0.42 |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.6 U | 0.39 U | 0.22 U | 0.27 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 1.8 U | 1.1 U | 2.1 U | 4.1 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 1.8 U | 1.1 U | 2.1 U | 4.1 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 20 | 74 | 470 U | 150 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 6.5 U | 6.5 U | 46 J | 6.5 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 6.5 U | 7.2 U | 6.5 U | 10 |
| Dimethyl phthalate | -- | -- | 71 | 160 | 6.5 U | 6.5 U | 6.5 U | 6.5 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 19 U | 19 U | 60 U | 98 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 19 U | 19 U | 60 U | 98 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 19 U | 19 U | 60 U | 98 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 97 U | 97 U | 300 U | 490 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS60<br>LDW-SS60-010<br>1/19/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS61<br>LDW-SS61-010<br>3/10/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS62<br>LDW-SS62-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS63<br>LDW-SS63-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 97 U | 97 U | 300 U | 490 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6.5 U | 6.5 U | 6.5 U | 6.5 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 190 U | 190 UJ | 600 U | 980 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6.5 U | 6.5 U | 6.5 U | 6.5 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 19 U | 19 U | 60 U | 98 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 97 U | 97 U | 300 U | 490 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 97 U | 97 U | 300 U | 490 U |
| 2-Nitrophenol | -- | -- | -- | -- | 97 U | 97 U | 300 U | 490 U |
| 4-Nitrophenol | -- | -- | -- | -- | 97 U | 97 UJ | 300 U | 490 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 33 U | 33 U | 32 U | 33 U |
| Phenol | 420 | 1200 | -- | -- | 19 U | 19 U | 60 U | 98 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 1.8 U | 1.1 U | 2.1 U | 4.1 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.6 U | 0.39 U | 0.22 U | 0.041 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.6 U | 0.39 U | 0.22 U | 0.27 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 97 U | 97 U | 300 U | 490 U |
| 3-Nitroaniline | -- | -- | -- | -- | 97 U | 97 U | 300 U | 490 U |
| 4-Nitroaniline | -- | -- | -- | -- | 97 U | 97 U | 300 U | 490 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 97 U | 97 U | 300 U | 490 U |
| 4-Chloroaniline | -- | -- | -- | -- | 97 U | 97 U | 300 U | 490 U |
| Aniline | -- | -- | -- | -- | 19 U | 19 U | 60 U | 98 U |
| Benzyl alcohol | 57 | 73 | -- | -- | 19 U | 19 U | 32 U | 33 U |
| Benzoic acid | 650 | 650 | -- | -- | 65 U | 65 UJ | 65 U | 65 U |
| Carbazole | -- | -- | -- | -- | 19 U | 19 U | 39 J | 98 U |
| Dibenzofuran | -- | -- | 540 | 700 | 19 U | 19 U | 60 U | 98 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6.5 U | 6.5 U | 6.5 U | 0.97 U |
| Hexachloroethane | -- | -- | -- | -- | 19 U | 19 U | 60 U | 98 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 97 U | 97 UJ | 300 U | 490 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS60<br>LDW-SS60-010<br>1/19/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS61<br>LDW-SS61-010<br>3/10/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS62<br>LDW-SS62-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS63<br>LDW-SS63-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 19 U | 19 U | 60 U | 98 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 33 U | 33 U | 32 U | 33 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 33 U | 33 UJ | 32 U | 33 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 6.5 U | 6.5 U | 6.5 U | 6.5 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 19 U | 19 U | 60 U | 98 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 19 U | 19 U | 60 U | 98 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 19 U | 19 U | 60 U | 98 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 19 U | 19 U | 60 U | 98 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | 0.97 U |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | 0.97 U |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | 0.97 U |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | 0.97 U |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | 0.97 U |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | 0.97 U |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | 0.97 U |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | 0.97 U |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| Endrin | -- | -- | -- | -- | -- | -- | -- | 1.9 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS60<br>LDW-SS60-010<br>1/19/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS61<br>LDW-SS61-010<br>3/10/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS62<br>LDW-SS62-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS63<br>LDW-SS63-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | 1.9 UJ |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | 0.97 U |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | 0.97 U |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | 97 U |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | 1.9 U |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | 9.7 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | **23 J** | 3.7 | **12** | 4 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 19 U | 20 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 19 U | 20 U | 20 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 19 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 19 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 55 J | 19 U | 82 | 39 U |
| Aroclor-1254 | -- | -- | -- | -- | 110 J | 30 | 140 | 53 |
| Aroclor-1260 | -- | -- | -- | -- | 80 J | 32 | 120 | 42 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 250 J | 62 | 340 | 95 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS60<br>LDW-SS60-010<br>1/19/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS61<br>LDW-SS61-010<br>3/10/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS62<br>LDW-SS62-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS63<br>LDW-SS63-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS60<br>LDW-SS60-010<br>1/19/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS61<br>LDW-SS61-010<br>3/10/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS62<br>LDW-SS62-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS63<br>LDW-SS63-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS64<br>LDW-SS64-010<br>1/24/2005<br>0-9 cm<br>East Nav. Channel - POS | LDW-SS65<br>LDW-SS65-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS66<br>LDW-SS66-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS67<br>LDW-SS67-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 38.6 | 3.2 | 0.1 | 0.3 |
| Sand (total calc'd) | -- | -- | -- | -- | 34.5 | 57.5 | 18.9 | 93.3 |
| Silt (total calc'd) | -- | -- | -- | -- | 18.9 | 27.6 | 61.8 | 4.6 |
| Clay (total calc'd) | -- | -- | -- | -- | 8.4 | 11.6 | 19.1 | 1.6 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 27.3 | 39.2 | 80.9 | 6.2 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.69 | 2.44 | 2.63 | 0.62 |
| Total solids | -- | -- | -- | -- | 58.1 | 57.7 | 44.9 | 75.5 |
| Total solids (preserved) | -- | -- | -- | -- | 54.5 | 65.6 | 39.4 | 71 |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | 9.68 | 8.38 | 26 | 3.46 |
| Sulfides (total) | -- | -- | -- | -- | 200 | 10 J | 51 J | 130 J |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 0.3 UJ | 0.3 UJ | 0.5 UJ | 0.2 UJ |
| Arsenic | 57 | 93 | -- | -- | 21.2 | 11.3 | 15.7 | 2.4 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.5 | 0.4 | 1 U | 0.3 U |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 27 | 25.2 | 85 | 12.4 |
| Cobalt | -- | -- | -- | -- | 10.8 | 7.8 | 12 | 4.5 |
| Copper | 390 | 390 | -- | -- | 107 | 58.9 | 171 | 16.9 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 50 | 34 | 50 | 11 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.15 | 0.12 | 0.4 | 0.06 |
| Molybdenum | -- | -- | -- | -- | 2.4 | 1.4 | 6 | 0.7 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS64<br>LDW-SS64-010<br>1/24/2005<br>0-9 cm<br>East Nav. Channel - POS | LDW-SS65<br>LDW-SS65-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS66<br>LDW-SS66-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS67<br>LDW-SS67-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 20 | 17 | 44 | 10 |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 9 U | 8 U | 30 U | 6 U |
| Silver | 6.1 | 6.1 | -- | -- | 0.5 U | 0.5 U | 2 U | 0.4 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 0.3 U | 0.3 U | 0.5 U | 0.2 U |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 63.9 | 57 | 78 | 40.6 |
| Zinc | 410 | 960 | -- | -- | 195 | 101 | 154 | 41 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | 5.5 U |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | 3.7 U |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 5.9 U | 0.82 U | 2.2 U | 3.1 U |
| Acenaphthylene | 66 | 66 | -- | -- | 5.9 U | 0.82 U | 2.2 U | 3.1 U |
| Acenaphthene | 16 | 57 | -- | -- | 5.9 U | 0.82 U | 2.2 U | 3.1 U |
| Anthracene | 220 | 1200 | -- | -- | 7.1 | 1.8 | 3.5 | 3.1 U |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 19 | 4.9 | 11 | 1.9 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 17 | 4.5 | 8 | 1.6 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 8.3 | 2 | 2.5 | 3.1 U |
| Chrysene | 110 | 460 | -- | -- | 31 | 7.4 | 13 | 3.7 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 5.9 U | 0.82 U | 2.2 U | 3.1 U |
| Fluoranthene | 160 | 1200 | -- | -- | 49 | 11 | 20 | 5.3 |
| Fluorene | 23 | 79 | -- | -- | 5.9 U | 0.82 U | 1.1 J | 3.1 U |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 7.7 | 2.6 | 4.6 | 1.2 |
| Naphthalene | 99 | 170 | -- | -- | 5.9 U | 0.82 U | 2.2 U | 3.1 U |
| Phenanthrene | 100 | 480 | -- | -- | 12 | 3 | 6.1 | 3.1 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS64<br>LDW-SS64-010<br>1/24/2005<br>0-9 cm<br>East Nav. Channel - POS | LDW-SS65<br>LDW-SS65-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS66<br>LDW-SS66-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS67<br>LDW-SS67-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 37 | 7.4 | 14 | 4.5 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 45 | 11 | 25 | 7.6 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 20 | 4.8 | 11 J | 3.1 U |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 210 | 51 | 98 | 26 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 100 U | 20 U | 59 U | 19 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 100 U | 20 U | 59 U | 19 U |
| Acenaphthene | -- | -- | 500 | 730 | 100 U | 20 U | 59 U | 19 U |
| Anthracene | -- | -- | 960 | 4400 | 120 | 45 | 91 | 19 U |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 320 | 120 | 300 | 12 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 280 | 110 | 210 | 9.9 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 380 | 160 | 450 | 23 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 380 | 110 | 220 | 24 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 140 | 50 | 65 | 19 U |
| Chrysene | -- | -- | 1400 | 2800 | 530 | 180 | 330 | 23 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 100 U | 20 U | 59 U | 19 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 820 | 280 | 520 | 33 |
| Fluorene | -- | -- | 540 | 1000 | 100 U | 20 U | 29 J | 19 U |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 130 | 63 | 120 | 7.3 |
| Naphthalene | -- | -- | 2100 | 2400 | 100 U | 20 U | 59 U | 19 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 210 | 73 | 160 | 19 U |
| Pyrene | -- | -- | 2600 | 3300 | 620 | 180 | 360 | 28 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 760 | 270 | 670 | 47 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 330 | 118 | 280 J | 19 U |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3600 | 1250 | 2580 | 160 |
| Total PAH (calc'd) | -- | -- | -- | -- | 3930 | 1370 | 2860 J | 160 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS64<br>LDW-SS64-010<br>1/24/2005<br>0-9 cm<br>East Nav. Channel - POS | LDW-SS65<br>LDW-SS65-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS66<br>LDW-SS66-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS67<br>LDW-SS67-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.39 U | 0.27 U | 0.25 U | 1.1 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.39 U | 0.27 U | 0.25 U | 1.1 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.39 U | 0.27 U | 0.25 U | 0.53 UJ |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.059 U | 0.27 U | 0.25 U | 0.15 U |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6.6 U | 6.6 U | 6.5 U | 6.6 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 100 U | 20 U | 59 U | 19 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6.6 U | 6.6 U | 6.5 U | 6.6 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6.6 U | 6.6 U | 6.5 U | 3.3 UJ |
| Hexachlorobenzene | -- | -- | 22 | 70 | 0.99 U | 6.6 U | 6.5 U | 0.96 U |
| Nitrobenzene | -- | -- | -- | -- | 100 U | 20 U | 59 U | 19 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 14 | 7.4 U | 14 U | 3.5 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.39 U | 0.27 U | 0.46 | 1.1 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.39 U | 0.27 U | 0.25 U | 1.9 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.39 U | 0.27 U | 0.25 U | 1.1 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 5.9 U | 0.86 U | 2.2 U | 3.1 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 5.9 U | 0.82 U | 2.2 U | 3.1 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 240 | 180 U | 360 U | 22 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 6.6 U | 6.6 U | 12 | 6.6 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 6.6 U | 6.6 U | 6.5 U | 12 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 6.6 U | 6.6 U | 6.5 U | 6.6 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 100 U | 21 U | 59 U | 19 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 100 U | 20 U | 59 U | 19 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 100 U | 20 U | 59 U | 19 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS64<br>LDW-SS64-010<br>1/24/2005<br>0-9 cm<br>East Nav. Channel - POS | LDW-SS65<br>LDW-SS65-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS66<br>LDW-SS66-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS67<br>LDW-SS67-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6.6 U | 6.6 U | 6.5 U | 6.6 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 1000 U | 200 U | 590 U | 190 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6.6 U | 6.6 U | 6.5 U | 6.6 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 100 U | 20 U | 59 U | 19 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |
| 2-Nitrophenol | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |
| 4-Nitrophenol | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 33 U | 33 U | 33 U | 33 UJ |
| Phenol | 420 | 1200 | -- | -- | 100 U | 280 | 59 U | 19 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 5.9 U | 0.82 U | 2.2 U | 3.1 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.059 U | 0.27 U | 0.25 U | 0.15 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.39 U | 0.27 U | 0.25 U | 1.1 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |
| 3-Nitroaniline | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |
| 4-Nitroaniline | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |
| 4-Chloroaniline | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |
| Aniline | -- | -- | -- | -- | 100 U | 20 U | 59 U | 19 U |
| Benzyl alcohol | 57 | 73 | -- | -- | 33 U | 20 U | 33 U | 19 U |
| Benzoic acid | 650 | 650 | -- | -- | 66 U | 66 U | 71 | 66 U |
| Carbazole | -- | -- | -- | -- | 100 U | 20 U | 36 J | 19 U |
| Dibenzofuran | -- | -- | 540 | 700 | 100 U | 20 U | 59 U | 19 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 0.99 U | 6.6 U | 6.5 U | 0.96 U |
| Hexachloroethane | -- | -- | -- | -- | 100 U | 20 U | 59 U | 19 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 500 U | 97 U | 290 U | 96 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS64<br>LDW-SS64-010<br>1/24/2005<br>0-9 cm<br>East Nav. Channel - POS | LDW-SS65<br>LDW-SS65-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS66<br>LDW-SS66-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS67<br>LDW-SS67-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 100 U | 20 U | 59 U | 19 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 33 U | 33 U | 33 U | 33 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 33 U | 33 U | 33 U | 33 U |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 6.6 U | 6.6 U | 6.5 U | 6.6 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 100 U | 20 U | 59 U | 19 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 100 U | 20 U | 59 U | 19 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 100 U | 20 U | 59 U | 19 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 100 U | 20 U | 59 U | 19 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| 2,4'-DDE | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| 2,4'-DDT | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| 4,4'-DDD | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| 4,4'-DDE | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| 4,4'-DDT | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| Aldrin | -- | -- | -- | -- | 0.99 U | -- | -- | 0.96 U |
| alpha-Chlordane | -- | -- | -- | -- | 0.99 U | -- | -- | 0.96 U |
| alpha-BHC | -- | -- | -- | -- | 0.99 U | -- | -- | 0.96 U |
| beta-BHC | -- | -- | -- | -- | 0.99 U | -- | -- | 0.96 U |
| delta-BHC | -- | -- | -- | -- | 0.99 U | -- | -- | 0.96 U |
| gamma-BHC | -- | -- | -- | -- | 0.99 U | -- | -- | 0.96 U |
| gamma-Chlordane | -- | -- | -- | -- | 0.99 U | -- | -- | 0.96 U |
| Oxychlordane | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| Dieldrin | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| alpha-Endosulfan | -- | -- | -- | -- | 0.99 U | -- | -- | 0.96 U |
| beta-Endosulfan | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| Endosulfan sulfate | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| Endrin | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS64<br>LDW-SS64-010<br>1/24/2005<br>0-9 cm<br>East Nav. Channel - POS | LDW-SS65<br>LDW-SS65-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS66<br>LDW-SS66-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS67<br>LDW-SS67-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | 2 UJ | -- | -- | 1.9 UJ |
| Endrin ketone | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| Heptachlor | -- | -- | -- | -- | 0.99 U | -- | -- | 0.96 U |
| Heptachlor epoxide | -- | -- | -- | -- | 0.99 U | -- | -- | 0.96 U |
| Toxaphene | -- | -- | -- | -- | 99 U | -- | -- | 96 U |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| DDTs (total-calc'd) | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| Total Chlordane (calc'd) | -- | -- | -- | -- | 2 U | -- | -- | 1.9 U |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | 9.9 U | -- | -- | 9.6 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 7.5 | 5.8 J | 10 | 5.8 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 19 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 19 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 19 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 J | 20 U | 19 U |
| Aroclor-1248 | -- | -- | -- | -- | 29 | 20 U | 64 | 19 U |
| Aroclor-1254 | -- | -- | -- | -- | 56 | 69 | 110 | 36 |
| Aroclor-1260 | -- | -- | -- | -- | 42 | 52 | 94 | 19 U |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 127 | 141 J | 270 | 36 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | 4090 | -- | -- | 557 |
| PCB-077 | -- | -- | -- | -- | 406 | -- | -- | 52.8 |
| PCB-081 | -- | -- | -- | -- | 27.6 J | -- | -- | 3.89 J |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS64<br>LDW-SS64-010<br>1/24/2005<br>0-9 cm<br>East Nav. Channel - POS | LDW-SS65<br>LDW-SS65-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS66<br>LDW-SS66-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS67<br>LDW-SS67-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | 8780 C | -- | -- | 1030 C |
| PCB-101 | -- | -- | -- | -- | C90 | -- | -- | C90 |
| PCB-105 | -- | -- | -- | -- | 3070 | -- | -- | 361 |
| PCB-110 | -- | -- | -- | -- | 10300 C | -- | -- | 1240 C |
| PCB-114 | -- | -- | -- | -- | 156 | -- | -- | 17.9 |
| PCB-118 | -- | -- | -- | -- | 7490 | -- | -- | 894 |
| PCB-123 | -- | -- | -- | -- | 195 | -- | -- | 20.2 |
| PCB-126 | -- | -- | -- | -- | 26.7 J | -- | -- | 3.36 |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | 10600 C | -- | -- | 1380 C |
| PCB-138 | -- | -- | -- | -- | C129 | -- | -- | C129 |
| PCB-153 | -- | -- | -- | -- | 8430 C | -- | -- | 1080 C |
| PCB-156 | -- | -- | -- | -- | 1100 C | -- | -- | 141 C |
| PCB-157 | -- | -- | -- | -- | C156 | -- | -- | C156 |
| PCB-167 | -- | -- | -- | -- | 398 | -- | -- | 50.7 |
| PCB-169 | -- | -- | -- | -- | 12.8 U | -- | -- | 1.28 U |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | 5020 C | -- | -- | 735 C |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 84 | -- | -- | 12.7 |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | 26.3 J | -- | -- | 3.43 J |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | 4.49 J | -- | -- | 0.557 J |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | 288 | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | 42.8 | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | 3.12 J | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS64<br>LDW-SS64-010<br>1/24/2005<br>0-9 cm<br>East Nav. Channel - POS | LDW-SS65<br>LDW-SS65-010<br>3/8/2005<br>0-10 cm<br>East Nav. Channel - POS | LDW-SS66<br>LDW-SS66-010<br>3/9/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS67<br>LDW-SS67-010<br>1/21/2005<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | 2.24 J | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | 5.12 J | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | 11.7 J | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | 1.98 J | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | 7.69 J | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | 0.149 J | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | 1.75 J | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | 0.811 J | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | 1.62 J | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | 1.89 J | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | 0.463 J | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | 1.13 | -- | -- | -- |
| OCDD | -- | -- | -- | -- | 2380 | -- | -- | -- |
| OCDF | -- | -- | -- | -- | 144 | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | 8.2 J | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS68<br>LDW-SS68-010<br>3/7/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS70<br>LDW-SS70-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - POS | R3<br>SD0054<br>10/15/1997 1:58:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R1<br>SD0057<br>10/15/1997 4:18:00 PM<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.1 | 2.7 | 1 | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 22.4 | 57.8 | 54 | 14 J |
| Silt (total calc'd) | -- | -- | -- | -- | 57.7 | 26.4 | 32 | 64 |
| Clay (total calc'd) | -- | -- | -- | -- | 19.8 | 13 | 13 | 21 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 77.5 | 39.4 | 45 | 85 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.58 | 3.05 | 3.7 | 1.9 J |
| Total solids | -- | -- | -- | -- | 47.1 | 56.3 | 41 | 48.6 |
| Total solids (preserved) | -- | -- | -- | -- | 42.9 | 57.3 | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | 9.78 | 8.34 | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | 80 | 320 J | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | 0.4 UJ | 0.3 UJ | -- | -- |
| Arsenic | 57 | 93 | -- | -- | 12.1 | 14.8 | 17.7 | 12.2 |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.6 | 0.7 | 0.9 | 0.4 U |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | 36 | 38.3 | 46 | 32 |
| Cobalt | -- | -- | -- | -- | 10.3 | 8.2 | -- | -- |
| Copper | 390 | 390 | -- | -- | 87.4 | 84.2 | 78 | 62 |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | 47 | 84 | 140 | 34 |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | 0.2 | 0.14 | 0.12 | 0.1 |
| Molybdenum | -- | -- | -- | -- | 2 | 2.6 | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS68<br>LDW-SS68-010<br>3/7/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS70<br>LDW-SS70-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - POS | R3<br>SD0054<br>10/15/1997 1:58:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R1<br>SD0057<br>10/15/1997 4:18:00 PM<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 24 | 28 | 43 | 32 UJ |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | 10 U | 8 U | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | 0.6 U | 0.5 U | 0.4 U | 0.4 U |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | 0.4 U | 0.3 U | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | 75.4 | 59.9 | -- | -- |
| Zinc | 410 | 960 | -- | -- | 152 | 277 | 288 | 128 UJ |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 3.8 U | 5.9 U | 3 | 1.1 U |
| Acenaphthylene | 66 | 66 | -- | -- | 3.8 U | 5.9 U | 1 U | 1.1 U |
| Acenaphthene | 16 | 57 | -- | -- | 3.8 U | 5.9 U | 4.9 | 1.3 |
| Anthracene | 220 | 1200 | -- | -- | 2.8 J | 5.9 U | 9.7 | 9.5 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 8.1 | 9.8 | 18 | 11 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 8.1 | 7.9 | 16 | 9.5 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 2.1 J | 5.9 U | 12 | 6.3 |
| Chrysene | 110 | 460 | -- | -- | 13 | 18 | 26 | 16 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 3.8 U | 5.9 U | 4.6 | 2.3 |
| Fluoranthene | 160 | 1200 | -- | -- | 18 | 36 | 38 UJ | 29 |
| Fluorene | 23 | 79 | -- | -- | 3.8 U | 5.9 U | 5.9 UJ | 1.9 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 0.54 | 5.9 U | 11 UJ | 6.3 |
| Naphthalene | 99 | 170 | -- | -- | 3.8 U | 5.9 U | 3.2 | 1.1 U |
| Phenanthrene | 100 | 480 | -- | -- | 5.4 | 6.6 | 30 | 8.9 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS68<br>LDW-SS68-010<br>3/7/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS70<br>LDW-SS70-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - POS | R3<br>SD0054<br>10/15/1997 1:58:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R1<br>SD0057<br>10/15/1997 4:18:00 PM<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 14 | 28 | 65 J | 31 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 24 | 29 | 33 | 24 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 8.1 J | 6.6 | 49 | 22 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 88 J | 130 | 180 J | 130 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 98 U | 180 U | 110 | 20 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 98 U | 180 U | 38 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 98 U | 180 U | 180 | 25 |
| Anthracene | -- | -- | 960 | 4400 | 72 J | 180 U | 360 | 180 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 210 | 300 | 660 | 200 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 210 | 240 | 580 | 180 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 380 | 410 | 630 | 220 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 240 | 470 | 580 | 230 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 54 J | 180 U | 460 | 120 |
| Chrysene | -- | -- | 1400 | 2800 | 340 | 550 | 970 | 300 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 98 U | 180 U | 170 | 43 |
| Fluoranthene | -- | -- | 1700 | 2500 | 470 | 1100 | 1400 UJ | 550 |
| Fluorene | -- | -- | 540 | 1000 | 98 U | 180 U | 220 UJ | 37 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 14 | 180 U | 400 UJ | 120 |
| Naphthalene | -- | -- | 2100 | 2400 | 98 U | 180 U | 120 | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 140 | 200 | 1100 | 170 |
| Pyrene | -- | -- | 2600 | 3300 | 360 | 860 | 2400 J | 580 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 620 | 880 | 1210 | 450 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 210 J | 200 | 1800 | 410 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2280 J | 3900 | 6500 J | 2540 |
| Total PAH (calc'd) | -- | -- | -- | -- | 2490 J | 4100 | 8200 J | 2960 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS68<br>LDW-SS68-010<br>3/7/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS70<br>LDW-SS70-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - POS | R3<br>SD0054<br>10/15/1997 1:58:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R1<br>SD0057<br>10/15/1997 4:18:00 PM<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.25 U | ***5.9 U*** | 1 UJ | 1.1 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.25 U | **5.9 U** | 1 UJ | 1.1 UJ |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.25 U | ***5.9 U*** | **1 UJ** | **1.1 U** |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | ***3.7 J*** | 0.032 U | 0.076 | 0.053 UJ |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 6.5 U | 180 U | 38 UJ | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 98 U | 180 U | 38 UJ | 20 UJ |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 6.5 U | 180 U | 38 UJ | 20 UJ |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 6.5 U | 180 U | 38 UJ | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 95 J | 0.98 U | 2.8 | 1 UJ |
| Nitrobenzene | -- | -- | -- | -- | 98 U | 180 U | 38 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 12 | **56** | ***95*** | 23 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 0.47 | **5.9 U** | **8.6** | 1.6 |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.25 U | 5.9 U | 1 U | 1.1 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.25 U | 5.9 U | 4.3 | 1.1 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 3.8 U | 5.9 U | 2.1 | 1.1 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 3.8 U | 33 | 1 UJ | 1.1 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 310 | 1700 | 3500 | 430 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 12 | 180 U | 320 | 30 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 6.5 U | 180 U | 38 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 6.5 U | 180 U | 160 | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 98 U | 180 U | 76 | 20 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 98 U | 1000 | 38 UJ | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 98 U | 180 U | 38 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 490 U | 890 U | 77 UJ | 40 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br><br>SMS 2LAET[a] | LDW-SS68<br>LDW-SS68-010<br>3/7/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS70<br>LDW-SS70-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - POS | R3<br>SD0054<br>10/15/1997 1:58:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R1<br>SD0057<br>10/15/1997 4:18:00 PM<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 490 U | 890 U | 120 U | 60 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 6.5 U | ***180 U*** | ***38 U*** | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 980 U | 1800 U | 380 U | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 6.5 U | ***180 U*** | 38 U | 20 UJ |
| 4-Methylphenol | 670 | 670 | -- | -- | 98 U | 180 U | 65 | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 490 U | 890 U | 190 U | 100 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 490 U | 890 U | 190 U | 100 U |
| 2-Nitrophenol | -- | -- | -- | -- | 490 U | 890 U | 190 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 490 U | 890 U | 190 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 33 U | ***890 U*** | 190 U | 100 U |
| Phenol | 420 | 1200 | -- | -- | 98 U | 180 U | 68 J | 20 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 3.8 U | 5.9 U | 4.3 | 1.6 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.25 U | 0.032 U | 1 U | 1.1 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 0.25 U | 5.9 U | 1 U | 1.1 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 490 U | 890 U | 190 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 490 U | 890 U | 230 UJ | 120 U |
| 4-Nitroaniline | -- | -- | -- | -- | 490 U | 890 U | 190 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 490 U | 890 U | 190 U | 100 U |
| 4-Chloroaniline | -- | -- | -- | -- | 490 U | 890 U | 120 U | 60 U |
| Aniline | -- | -- | -- | -- | 98 U | 180 U | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 33 U | ***180 U*** | 38 U | 20 U |
| Benzoic acid | 650 | 650 | -- | -- | 65 U | ***1800 U*** | 380 U | 200 U |
| Carbazole | -- | -- | -- | -- | 98 U | 180 U | 240 | 97 |
| Dibenzofuran | -- | -- | 540 | 700 | 98 U | 180 U | 160 | 30 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 6.5 U | 0.98 U | 38 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 98 U | 180 U | 38 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 490 U | 890 U | 190 U | 100 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS68<br>LDW-SS68-010<br>3/7/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS70<br>LDW-SS70-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - POS | R3<br>SD0054<br>10/15/1997 1:58:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R1<br>SD0057<br>10/15/1997 4:18:00 PM<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 98 U | 180 U | 38 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 33 U | 890 U | 77 U | 40 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | 33 U | 890 U | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 6.5 U | 180 U | 38 U | 20 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 98 U | 180 U | 38 U | 20 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 98 U | 180 U | 38 UJ | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 98 U | 180 U | 77 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 98 U | 180 U | 38 U | 20 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | 2 U | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | 2 U | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | 2 U | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | 2 U | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | 2 U | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | 0.98 U | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | 0.98 U | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | 0.98 U | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | 0.98 U | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | 0.98 U | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | 0.98 U | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | 0.98 U | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | 2 U | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | 0.98 U | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Endrin | -- | -- | -- | -- | -- | 2 U | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS68<br>LDW-SS68-010<br>3/7/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS70<br>LDW-SS70-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - POS | R3<br>SD0054<br>10/15/1997 1:58:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R1<br>SD0057<br>10/15/1997 4:18:00 PM<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | 2 UJ | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | 0.98 U | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | 0.98 U | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | 98 U | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | 2 U | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | 2 U | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | 9.8 U | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 7.5 | 3.1 | 3.7 J | 8.3 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 U | 18 U | 20 U |
| Aroclor-1221 | -- | -- | -- | -- | 20 U | 20 U | 37 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 18 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U | 17 J | 24 |
| Aroclor-1248 | -- | -- | -- | -- | 52 | 40 U | 18 U | 20 UJ |
| Aroclor-1254 | -- | -- | -- | -- | 82 | 46 | 57 J | 79 |
| Aroclor-1260 | -- | -- | -- | -- | 59 | 50 | 63 | 54 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 193 | 96 | 137 J | 157 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS68<br>LDW-SS68-010<br>3/7/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS70<br>LDW-SS70-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - POS | R3<br>SD0054<br>10/15/1997 1:58:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R1<br>SD0057<br>10/15/1997 4:18:00 PM<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-105 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-128 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-153 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-156 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-157 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-170 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-180 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | LDW-SS68<br>LDW-SS68-010<br>3/7/2005<br>0-10 cm<br>West Nav. Channel - POS | LDW-SS70<br>LDW-SS70-010<br>1/21/2005<br>0-10 cm<br>West Nav. Channel - POS | R3<br>SD0054<br>10/15/1997 1:58:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R1<br>SD0057<br>10/15/1997 4:18:00 PM<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | R2<br>SD0058<br>10/15/1997 4:48:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R4<br>SD0059<br>10/15/1997 1:05:00 PM<br>0-10 cm<br>West Nav. Channel - POS | DR092<br>SD-DR092-0000<br>8/27/1998<br>0-10 cm<br>East Nav. Channel - POS | DR094<br>SD-DR094-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | 1 | 1.7 | 0.01 U |
| Sand (total calc'd) | -- | -- | -- | -- | 13 | 20 | 76 | 62 |
| Silt (total calc'd) | -- | -- | -- | -- | 68 | 60 | 17 | 26.5 |
| Clay (total calc'd) | -- | -- | -- | -- | 19 | 19 | 5.2 | 11.1 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 87 | 79 | 22.2 | 37.6 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.9 | 3.8 | 0.7 | 1.02 |
| Total solids | -- | -- | -- | -- | 47.3 | 48.8 | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | 9400 | 12000 |
| Antimony | -- | -- | -- | -- | -- | -- | 10 U | 10 UJ |
| Arsenic | 57 | 93 | -- | -- | 12.8 | 13.8 | 6 | 8.7 |
| Barium | -- | -- | -- | -- | -- | -- | 41 | 1100 |
| Beryllium | -- | -- | -- | -- | -- | -- | 0.2 | 0.24 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.4 U | 0.5 | 0.2 | 0.51 |
| Calcium | -- | -- | -- | -- | -- | -- | 3600 | 5100 |
| Chromium | 260 | 270 | -- | -- | 30 | 33 | 15 | 23 |
| Cobalt | -- | -- | -- | -- | -- | -- | 5 | 7 |
| Copper | 390 | 390 | -- | -- | 58 | 68 | 26 | 39 |
| Iron | -- | -- | -- | -- | -- | -- | 15000 | 18000 J |
| Lead | 450 | 530 | -- | -- | 31 | 54 | 16 | 29 |
| Magnesium | -- | -- | -- | -- | -- | -- | 3500 | 5300 |
| Manganese | -- | -- | -- | -- | -- | -- | 140 | 180 |
| Mercury | 0.41 | 0.59 | -- | -- | 0.13 | 0.12 | 0.07 | 0.11 |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | R2<br>SD0058<br>10/15/1997 4:48:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R4<br>SD0059<br>10/15/1997 1:05:00 PM<br>0-10 cm<br>West Nav. Channel - POS | DR092<br>SD-DR092-0000<br>8/27/1998<br>0-10 cm<br>East Nav. Channel - POS | DR094<br>SD-DR094-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 29 | 32 | 14 | 16 |
| Potassium | -- | -- | -- | -- | -- | -- | 1100 | 1500 |
| Selenium | -- | -- | -- | -- | -- | -- | 7 | 3 |
| Silver | 6.1 | 6.1 | -- | -- | 0.5 | 0.4 | 0.14 | 0.45 |
| Sodium | -- | -- | -- | -- | -- | -- | 5400 | 6300 |
| Thallium | -- | -- | -- | -- | -- | -- | 0.08 | 0.11 |
| Tin | -- | -- | -- | -- | -- | -- | 4 UJ | 6 |
| Vanadium | -- | -- | -- | -- | -- | -- | 43 | 44 |
| Zinc | 410 | 960 | -- | -- | 111 | 171 | 54 | 86 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | 5 UJ | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | 7 J | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | 25 J | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | 5 UJ | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 1.1 | 0.84 | 2.9 U | 2 U |
| Acenaphthylene | 66 | 66 | -- | -- | 1 U | 0.5 U | 2.9 U | 2 U |
| Acenaphthene | 16 | 57 | -- | -- | 6.3 | 1.8 | 7.1 | 2.9 |
| Anthracene | 220 | 1200 | -- | -- | 7.4 | 4.5 | 7.1 | 4.9 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 15 | 8.2 | 19 | 16 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 12 | 7.1 | 16 | 18 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 7.9 | 4.7 | 8.6 | 7.8 |
| Chrysene | 110 | 460 | -- | -- | 21 | 12 | 26 | 27 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.6 | 1.9 | 2.9 U | 2 |
| Fluoranthene | 160 | 1200 | -- | -- | 48 | 24 | 57 | 42 |
| Fluorene | 23 | 79 | -- | -- | 8.4 | 1.9 | 7.1 | 3.9 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 7.9 | 4.5 | 8.6 | 9.8 |
| Naphthalene | 99 | 170 | -- | -- | 1 U | 1.2 | 0.34 U | 2 U |
| Phenanthrene | 100 | 480 | -- | -- | 37 | 9.5 | 33 | 15 |

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | R2<br>SD0058<br>10/15/1997 4:48:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R4<br>SD0059<br>10/15/1997 1:05:00 PM<br>0-10 cm<br>West Nav. Channel - POS | DR092<br>SD-DR092-0000<br>8/27/1998<br>0-10 cm<br>East Nav. Channel - POS | DR094<br>SD-DR094-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 48 | 21 | 51 | 40 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 29 | 16 | 37 | 43 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 59 | 19 | 54 | 26 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 190 | 100 | 220 | 210 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 | 32 | 20 U | 20 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 19 U | 19 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 120 | 70 | 50 | 30 |
| Anthracene | -- | -- | 960 | 4400 | 140 | 170 | 50 | 50 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 280 | 310 | 130 | 160 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 220 | 270 | 110 | 180 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 310 | 310 | 130 | 240 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 250 | 290 | 130 | 200 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 150 | 180 | 60 | 80 |
| Chrysene | -- | -- | 1400 | 2800 | 390 | 460 | 180 | 280 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 50 | 73 | 20 U | 20 |
| Fluoranthene | -- | -- | 1700 | 2500 | 910 | 930 | 400 | 430 |
| Fluorene | -- | -- | 540 | 1000 | 160 | 74 | 50 | 40 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 150 | 170 | 60 | 100 |
| Naphthalene | -- | -- | 2100 | 2400 | 19 U | 46 | 2.4 U | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 710 | 360 | 230 | 150 |
| Pyrene | -- | -- | 2600 | 3300 | 910 | 800 | 360 | 410 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 560 | 600 | 260 | 440 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 1130 | 720 | 380 | 270 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3620 | 3790 | 1560 | 2100 |
| Total PAH (calc'd) | -- | -- | -- | -- | 4750 | 4510 | 1940 | 2370 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | R2<br>SD0058<br>10/15/1997 4:48:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R4<br>SD0059<br>10/15/1997 1:05:00 PM<br>0-10 cm<br>West Nav. Channel - POS | DR092<br>SD-DR092-0000<br>8/27/1998<br>0-10 cm<br>East Nav. Channel - POS | DR094<br>SD-DR094-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 1 U | 0.5 U | 0.34 U | 2 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 1 U | 0.5 U | 0.34 U | 2 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | **1 U** | 0.5 U | 0.69 U | ***2 U*** |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | 0.04 J | 0.037 J | ***2.9 U*** | **2 U** |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 19 U | 19 U | 2.4 U | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 19 U | 19 U | 2.4 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 19 U | 19 U | 2.4 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 19 U | 19 U | 4.8 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 0.8 J | 1.4 J | 20 U | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 19 U | 19 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 23 | 32 | 16 | 35 UJ |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 2.2 J | 2.3 J | 2.9 U | 2 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 1 U | 0.5 U | 2.9 U | 2 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 1 U | 1.3 | 2.9 U | 2 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 1 U | 0.55 | 2.9 U | 2 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 1 U | 1.1 J | 2.9 U | 2 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 440 | 1200 | 110 | 360 UJ |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 42 J | 89 J | 20 U | 20 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 19 U | 19 U | 20 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 19 U | 48 | 20 U | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 19 U | 21 | 20 U | 20 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 19 U | 40 J | 20 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 19 U | 19 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 38 U | 39 U | 40 U | 40 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | R2<br>SD0058<br>10/15/1997 4:48:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R4<br>SD0059<br>10/15/1997 1:05:00 PM<br>0-10 cm<br>West Nav. Channel - POS | DR092<br>SD-DR092-0000<br>8/27/1998<br>0-10 cm<br>East Nav. Channel - POS | DR094<br>SD-DR094-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 57 U | 58 U | 60 U | 60 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 19 U | 19 U | 20 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 190 UJ | 190 UJ | 200 U | 200 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | 19 U | 19 U | 20 U | 20 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 86 | 27 | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 95 U | 97 U | 200 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 95 U | 97 U | 200 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | 95 U | 97 U | 100 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 95 UJ | 97 UJ | 100 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 95 UJ | 97 UJ | 100 U | 100 U |
| Phenol | 420 | 1200 | -- | -- | 46 | 53 | **520** | 70 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 5.3 | 1.7 | 5.7 | 2 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 1 U | 0.5 U | 0.69 U | 2 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1 U | 0.5 U | 5.7 U | 3.9 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 95 U | 97 U | 100 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 110 UJ | 120 UJ | 200 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | 95 UJ | 97 UJ | 100 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 95 U | 97 U | 200 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | 57 U | 58 U | 60 U | 60 U |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 19 UJ | 19 UJ | 50 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 190 UJ | 190 UJ | 200 U | 200 U |
| Carbazole | -- | -- | -- | -- | 71 J | 61 J | 20 U | 20 U |
| Dibenzofuran | -- | -- | 540 | 700 | 100 | 65 | 40 | 20 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 19 U | 19 U | 4.8 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 19 U | 19 U | 2.4 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 95 UJ | 97 UJ | 100 UJ | 100 UJ |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | R2<br>SD0058<br>10/15/1997 4:48:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R4<br>SD0059<br>10/15/1997 1:05:00 PM<br>0-10 cm<br>West Nav. Channel - POS | DR092<br>SD-DR092-0000<br>8/27/1998<br>0-10 cm<br>East Nav. Channel - POS | DR094<br>SD-DR094-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 19 U | 19 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 38 U | 39 U | 40 U | 40 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 19 U | 19 U | 40 U | 40 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 19 U | 19 U | 40 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 19 U | 19 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 38 U | 39 U | 40 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 19 U | 19 U | 40 U | 40 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | 2 U | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | 1 U | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | 2 UJ | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | 1 UJ | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | 1 U | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | 1 U | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | 1 U | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | 1 UJ | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | 1 U | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | 2 UJ | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | 1 U | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | 2 U | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | 2 U | -- |
| Endrin | -- | -- | -- | -- | -- | -- | 2 UJ | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | R2<br>SD0058<br>10/15/1997 4:48:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R4<br>SD0059<br>10/15/1997 1:05:00 PM<br>0-10 cm<br>West Nav. Channel - POS | DR092<br>SD-DR092-0000<br>8/27/1998<br>0-10 cm<br>East Nav. Channel - POS | DR094<br>SD-DR094-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | 2 U | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | 2 U | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | 1 UJ | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | 1 U | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | 20 U | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | 2 UJ | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | 2 UJ | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | 1 U | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | 1 U | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 8.6 | 4.5 | 9.1 | **38 J** |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 18 U | 19 U | 20 UJ | 20 UJ |
| Aroclor-1221 | -- | -- | -- | -- | 36 U | 37 U | 40 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 18 U | 19 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 25 | 23 | 20 U | 110 |
| Aroclor-1248 | -- | -- | -- | -- | 18 U | 19 U | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 79 | 84 | 40 | 180 |
| Aroclor-1260 | -- | -- | -- | -- | 60 | 65 | 24 | 100 J |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 164 | 172 | 64 | 390 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | 1000 UJ | 6000 J |
| PCB-028 | -- | -- | -- | -- | -- | -- | 1000 J | 13000 J |
| PCB-044 | -- | -- | -- | -- | -- | -- | 1000 J | 10000 J |
| PCB-055 | -- | -- | -- | -- | -- | -- | 2000 J | 11000 J |
| PCB-066 | -- | -- | -- | -- | -- | -- | 3000 J | 20000 J |
| PCB-077 | -- | -- | -- | -- | -- | -- | 1000 U | 1000 UJ |
| PCB-081 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 UJ |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | R2<br>SD0058<br>10/15/1997 4:48:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R4<br>SD0059<br>10/15/1997 1:05:00 PM<br>0-10 cm<br>West Nav. Channel - POS | DR092<br>SD-DR092-0000<br>8/27/1998<br>0-10 cm<br>East Nav. Channel - POS | DR094<br>SD-DR094-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | -- | -- | 3000 J | 12000 J |
| PCB-105 | -- | -- | -- | -- | -- | -- | 1000 UJ | 5000 J |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 UJ |
| PCB-118 | -- | -- | -- | -- | -- | -- | 2000 J | 10000 |
| PCB-123 | -- | -- | -- | -- | -- | -- | 1000 UJ | 2000 U |
| PCB-126 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 UJ |
| PCB-128 | -- | -- | -- | -- | -- | -- | 1000 UJ | 3000 J |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | -- | -- | 4000 | 16000 |
| PCB-153 | -- | -- | -- | -- | -- | -- | 3000 J | 11000 |
| PCB-156 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 J |
| PCB-157 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 UJ |
| PCB-167 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 UJ |
| PCB-169 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 U |
| PCB-170 | -- | -- | -- | -- | -- | -- | 5000 UJ | 4000 J |
| PCB-180 | -- | -- | -- | -- | -- | -- | 2000 J | 7000 J |
| PCB-187 | -- | -- | -- | -- | -- | -- | 2000 J | 5000 J |
| PCB-189 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 UJ |
| PCB-195 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 UJ |
| PCB-206 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 UJ |
| PCB-209 | -- | -- | -- | -- | -- | -- | 1000 UJ | 1000 UJ |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | 260 | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | 42 | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | 6.1 J | -- |

## Table B-5
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | R2<br>SD0058<br>10/15/1997 4:48:00 PM<br>0-10 cm<br>West Nav. Channel - POS | R4<br>SD0059<br>10/15/1997 1:05:00 PM<br>0-10 cm<br>West Nav. Channel - POS | DR092<br>SD-DR092-0000<br>8/27/1998<br>0-10 cm<br>East Nav. Channel - POS | DR094<br>SD-DR094-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | 1.4 U | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | 15 | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | 8.2 | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | 2.6 U | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | 4.8 J | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | 0.14 U | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | 0.65 U | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | 0.87 U | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | 1.1 U | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | 3 U | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | 0.37 U | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | 1.3 J | -- |
| OCDD | -- | -- | -- | -- | -- | -- | 2700 | -- |
| OCDF | -- | -- | -- | -- | -- | -- | 120 | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | 6.7 J | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR095<br>SD-DR095-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR098<br>SD-DR098-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR099<br>SD-DR099-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR100<br>SD-DR100-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 4.7 | 0.07 | 31 | 0.96 |
| Sand (total calc'd) | -- | -- | -- | -- | 10.7 | 15.2 | 47 | 78 |
| Silt (total calc'd) | -- | -- | -- | -- | 61 | 57 | 15.1 | 13.1 |
| Clay (total calc'd) | -- | -- | -- | -- | 24 | 28 | 6 | 7.3 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 86 | 84 | 21.1 | 20.4 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.17 | 1.84 | 1.66 | 0.61 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | 20000 | 25000 | 10000 | 7900 |
| Antimony | -- | -- | -- | -- | 10 UJ | 10 UJ | 10 UJ | 5 J |
| Arsenic | 57 | 93 | -- | -- | 13 | 12 | 8.5 | 4.6 |
| Barium | -- | -- | -- | -- | 120 | 110 | 53 | 42 |
| Beryllium | -- | -- | -- | -- | 0.41 | 0.48 | 0.21 | 0.16 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.39 | 0.35 | 0.24 | 0.22 |
| Calcium | -- | -- | -- | -- | 5700 | 6100 | 7600 | 8800 |
| Chromium | 260 | 270 | -- | -- | 28 | 32 | 15 | 12 |
| Cobalt | -- | -- | -- | -- | 9 | 11 | 5 | 4 |
| Copper | 390 | 390 | -- | -- | 59 | 61 | 31 | 25 |
| Iron | -- | -- | -- | -- | 29000 J | 34000 J | 19000 J | 13000 J |
| Lead | 450 | 530 | -- | -- | 33 | 30 | 21 | 12 |
| Magnesium | -- | -- | -- | -- | 7700 | 9300 | 4600 | 3400 |
| Manganese | -- | -- | -- | -- | 310 | 360 | 170 | 130 |
| Mercury | 0.41 | 0.59 | -- | -- | 0.15 | 0.17 | 0.07 | 0.06 |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR095<br>SD-DR095-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR098<br>SD-DR098-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR099<br>SD-DR099-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR100<br>SD-DR100-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 21 | 26 | 15 | 11 |
| Potassium | -- | -- | -- | -- | 2600 | 3000 | 1300 | 1100 |
| Selenium | -- | -- | -- | -- | 5 | 5 | 2 | 3 |
| Silver | 6.1 | 6.1 | -- | -- | 0.37 | 0.32 | 0.18 | 0.33 |
| Sodium | -- | -- | -- | -- | 10000 | 12000 | 6100 | 4300 |
| Thallium | -- | -- | -- | -- | 0.12 | 0.13 | 0.05 | 0.05 |
| Tin | -- | -- | -- | -- | 4 | 3 | 3 | 2 UJ |
| Vanadium | -- | -- | -- | -- | 59 | 72 | 33 | 29 |
| Zinc | 410 | 960 | -- | -- | 110 | 110 | 77 | 51 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.92 U | 1.1 U | 1.2 U | 3.3 U |
| Acenaphthylene | 66 | 66 | -- | -- | 0.92 U | 1.1 U | 1.2 U | 3.3 U |
| Acenaphthene | 16 | 57 | -- | -- | 0.92 U | 1.1 U | 1.2 U | 3.3 U |
| Anthracene | 220 | 1200 | -- | -- | 2.8 | 2.2 | 4.2 | 20 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 9.2 | 8.7 | 8.4 | 33 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 10 | 8.7 | 6.6 | 28 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 5.5 | 4.3 | 3.6 | 16 |
| Chrysene | 110 | 460 | -- | -- | 14 | 13 | 11 | 59 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 1.8 | 1.1 U | 1.2 U | 4.9 |
| Fluoranthene | 160 | 1200 | -- | -- | 27 | 22 | 17 | 59 |
| Fluorene | 23 | 79 | -- | -- | 0.92 | 1.1 U | 1.8 | 4.9 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 6.9 | 5.4 | 3.6 | 21 |
| Naphthalene | 99 | 170 | -- | -- | 0.92 U | 1.1 U | 1.2 U | 3.3 U |
| Phenanthrene | 100 | 480 | -- | -- | 6 | 6 | 6.6 | 18 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR095<br>SD-DR095-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR098<br>SD-DR098-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR099<br>SD-DR099-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR100<br>SD-DR100-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 20 | 20 | 14 | 51 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 25 | 22 | 16 | 70 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 9.7 | 8.2 | 13 | 43 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 120 | 100 | 80 | 340 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 U | 20 U | 20 U | 20 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | 20 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 20 U | 20 U | 20 U | 20 U |
| Anthracene | -- | -- | 960 | 4400 | 60 | 40 | 70 | 120 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 200 | 160 | 140 | 200 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 220 | 160 | 110 | 170 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 300 | 240 | 160 | 230 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 240 | 170 | 100 | 200 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 120 | 80 | 60 | 100 |
| Chrysene | -- | -- | 1400 | 2800 | 300 | 230 | 180 | 360 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 40 | 20 U | 20 U | 30 |
| Fluoranthene | -- | -- | 1700 | 2500 | 590 | 410 | 280 | 360 |
| Fluorene | -- | -- | 540 | 1000 | 20 | 20 U | 30 | 30 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 150 | 100 | 60 | 130 |
| Naphthalene | -- | -- | 2100 | 2400 | 20 U | 20 U | 20 U | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 130 | 110 | 110 | 110 |
| Pyrene | -- | -- | 2600 | 3300 | 430 | 360 | 230 | 310 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 540 | 410 | 260 | 430 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 210 | 150 | 210 | 260 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 2590 | 1910 | 1320 | 2090 |
| Total PAH (calc'd) | -- | -- | -- | -- | 2800 | 2060 | 1530 | 2350 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR095<br>SD-DR095-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR098<br>SD-DR098-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR099<br>SD-DR099-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR100<br>SD-DR100-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.92 U | 1.1 U | 1.2 U | ***3.3 U*** |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.92 U | 1.1 U | 1.2 U | **3.3 U** |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | **0.92 U** | **1.1 U** | **1.2 U** | ***3.3 U*** |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.92 U** | **1.1 U** | **1.2 U** | ***3.3 U*** |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | 20 U | 20 U | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | 20 U | 20 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 20 U | 20 U | 20 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 20 U | 20 U | 20 U | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 16 UJ | 23 | 20 UJ | 26 UJ |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.4 | 1.6 | 1.2 U | 3.3 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.92 U | 1.1 U | 1.2 U | 3.3 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.92 U | 1.1 U | 1.2 U | 3.3 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.92 U | 1.1 U | 1.2 U | 3.3 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.92 U | 1.1 U | 1.2 U | 3.3 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 340 UJ | 420 | 330 UJ | 160 UJ |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 30 | 30 | 20 U | 20 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 20 U | 20 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 U | 20 U | 20 U | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 U | 20 U | 20 U | 20 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 20 U | 20 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR095<br>SD-DR095-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR098<br>SD-DR098-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR099<br>SD-DR099-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR100<br>SD-DR100-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 60 U | 60 U | 60 U | 60 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 UJ | 200 UJ | 200 UJ | 200 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 100 U | 100 U | 100 U | 100 U |
| Phenol | 420 | 1200 | -- | -- | 160 | 20 U | 20 U | 30 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 0.92 U | 1.1 U | 1.2 U | 3.3 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.92 U | 1.1 U | 1.2 U | 3.3 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.8 U | 2.2 U | 2.4 U | 6.6 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | 60 U | 60 U | 60 U | 60 U |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 50 U | 50 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | 200 U | 200 U | 200 U |
| Carbazole | -- | -- | -- | -- | 20 | 20 U | 20 U | 40 |
| Dibenzofuran | -- | -- | 540 | 700 | 20 U | 20 U | 20 U | 20 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 20 U | 20 U | 20 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 100 UJ | 100 UJ | 100 UJ | 100 UJ |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR095<br>SD-DR095-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR098<br>SD-DR098-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR099<br>SD-DR099-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR100<br>SD-DR100-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 40 U | 40 U | 40 U | 40 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR095<br>SD-DR095-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR098<br>SD-DR098-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR099<br>SD-DR099-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR100<br>SD-DR100-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 4.2 J | 3.8 J | 1.9 | 6.6 U |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 UJ | 20 UJ | 20 UJ | 20 UJ |
| Aroclor-1221 | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 53 | 37 | 32 | 20 U |
| Aroclor-1260 | -- | -- | -- | -- | 38 J | 32 J | 20 UJ | 20 UJ |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 91 J | 69 J | 32 | 40 U |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-028 | -- | -- | -- | -- | 2000 J | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-044 | -- | -- | -- | -- | 2000 J | 1000 J | 1000 UJ | 1000 UJ |
| PCB-055 | -- | -- | -- | -- | 2000 J | 2000 J | 1000 J | 1000 UJ |
| PCB-066 | -- | -- | -- | -- | 5000 J | 4000 J | 2000 J | 2000 J |
| PCB-077 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-081 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR095<br>SD-DR095-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR098<br>SD-DR098-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR099<br>SD-DR099-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR100<br>SD-DR100-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 2000 J | 3000 J | 1000 J | 1000 UJ |
| PCB-105 | -- | -- | -- | -- | 1000 J | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-118 | -- | -- | -- | -- | 3000 | 3000 | 2000 | 1000 |
| PCB-123 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-126 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-128 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 6000 | 5000 | 3000 | 2000 |
| PCB-153 | -- | -- | -- | -- | 4000 | 4000 | 2000 | 2000 |
| PCB-156 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-157 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-167 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-169 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 U | 1000 U |
| PCB-170 | -- | -- | -- | -- | 2000 J | 1000 J | 1000 UJ | 1000 UJ |
| PCB-180 | -- | -- | -- | -- | 3000 J | 2000 J | 1000 J | 1000 UJ |
| PCB-187 | -- | -- | -- | -- | 2000 J | 2000 J | 1000 UJ | 1000 UJ |
| PCB-189 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-195 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-206 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-209 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR095<br>SD-DR095-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR098<br>SD-DR098-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR099<br>SD-DR099-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR100<br>SD-DR100-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR101<br>SD-DR101-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR102<br>SD-DR102-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR127<br>SD-DR127-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR128<br>SD-DR128-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 6 | 7.9 | 2.3 J | 0.06 J |
| Sand (total calc'd) | -- | -- | -- | -- | 11.2 | 33 | 14.9 J | 32 J |
| Silt (total calc'd) | -- | -- | -- | -- | 68 | 46 | 55 | 46 |
| Clay (total calc'd) | -- | -- | -- | -- | 15 | 14.5 | 28 | 22 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 83 | 61 | 83 | 68 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 1.73 | 2.15 | 2.78 | 2.99 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | 19000 | 18000 | 21000 | 20000 |
| Antimony | -- | -- | -- | -- | 10 UJ | 10 UJ | 10 UJ | 10 UJ |
| Arsenic | 57 | 93 | -- | -- | 11 | 14 | 13 | 13 |
| Barium | -- | -- | -- | -- | 73 | 74 | 84 | 81 |
| Beryllium | -- | -- | -- | -- | 0.38 | 0.36 | 0.42 | 0.42 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.47 | 0.42 | 0.41 | 0.44 |
| Calcium | -- | -- | -- | -- | 5400 | 9100 | 6100 | 6300 |
| Chromium | 260 | 270 | -- | -- | 25 | 36 | 31 | 30 |
| Cobalt | -- | -- | -- | -- | 8 | 9 | 10 | 10 |
| Copper | 390 | 390 | -- | -- | 47 | 69 | 85 | 81 |
| Iron | -- | -- | -- | -- | 26000 J | 27000 J | 31000 J | 31000 J |
| Lead | 450 | 530 | -- | -- | 27 | 45 | 47 | 45 |
| Magnesium | -- | -- | -- | -- | 7100 | 7400 | 8900 | 8800 |
| Manganese | -- | -- | -- | -- | 260 | 280 | 340 | 320 |
| Mercury | 0.41 | 0.59 | -- | -- | 0.18 | 0.13 | 0.19 | 0.22 |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR101<br>SD-DR101-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR102<br>SD-DR102-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR127<br>SD-DR127-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR128<br>SD-DR128-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 21 | 26 | 20 | 19 |
| Potassium | -- | -- | -- | -- | 2600 | 2200 | 3000 | 2900 |
| Selenium | -- | -- | -- | -- | 5 | 4 | 1 | 0.8 J |
| Silver | 6.1 | 6.1 | -- | -- | 0.43 | 0.36 | 0.31 | 0.34 |
| Sodium | -- | -- | -- | -- | 11000 | 9800 | 15000 | 16000 |
| Thallium | -- | -- | -- | -- | 0.13 | 0.1 | 0.13 | 0.13 |
| Tin | -- | -- | -- | -- | 3 | 5 | 11 | 9 |
| Vanadium | -- | -- | -- | -- | 59 | 56 | 60 | 58 |
| Zinc | 410 | 960 | -- | -- | 85 | 130 | 140 | 130 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | 10 UJ | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | 11 J | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | 42 J | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | 10 U | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 1.7 J | 0.93 U | 0.72 U | 0.67 U |
| Acenaphthylene | 66 | 66 | -- | -- | 1.2 UJ | 0.93 U | 0.72 U | 0.67 U |
| Acenaphthene | 16 | 57 | -- | -- | 8.1 J | 1.4 | 1.1 | 1.3 |
| Anthracene | 220 | 1200 | -- | -- | 13 J | 3.3 | 4.7 | 3 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 20 J | 16 | 15 | 10 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 19 J | 15 | 12 | 9.7 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 10 J | 8.8 | 7.6 | 6.7 |
| Chrysene | 110 | 460 | -- | -- | 25 J | 22 | 22 | 17 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.3 J | 2.3 | 2.2 | 1.7 |
| Fluoranthene | 160 | 1200 | -- | -- | 40 J | 41 | 36 | 24 |
| Fluorene | 23 | 79 | -- | -- | 5.8 J | 1.4 | 2.2 | 2 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 9.8 J | 11 | 8.6 | 7 |
| Naphthalene | 99 | 170 | -- | -- | 1.2 J | 0.93 U | 0.72 U | 0.67 U |
| Phenanthrene | 100 | 480 | -- | -- | 43 J | 9.8 | 11 | 9.4 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR101<br>SD-DR101-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR102<br>SD-DR102-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR127<br>SD-DR127-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR128<br>SD-DR128-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 45 J | 31 | 26 | 21 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 32 J | 37 | 28 | 24 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 71 J | 16 | 19 | 16 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 200 J | 180 | 160 | 120 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 30 J | 20 U | 20 U | 20 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 UJ | 20 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 140 J | 30 | 30 | 40 |
| Anthracene | -- | -- | 960 | 4400 | 220 J | 70 | 130 | 90 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 340 J | 350 | 410 | 300 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 330 J | 320 | 330 | 290 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 280 J | 460 | 480 | 410 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 270 J | 330 | 300 | 310 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 180 J | 190 | 210 | 200 |
| Chrysene | -- | -- | 1400 | 2800 | 430 J | 470 | 610 | 500 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 40 J | 50 | 60 | 50 |
| Fluoranthene | -- | -- | 1700 | 2500 | 690 J | 890 | 1000 | 710 |
| Fluorene | -- | -- | 540 | 1000 | 100 J | 30 | 60 | 60 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 170 J | 240 | 240 | 210 |
| Naphthalene | -- | -- | 2100 | 2400 | 20 J | 20 U | 20 U | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 750 J | 210 | 310 | 280 |
| Pyrene | -- | -- | 2600 | 3300 | 770 J | 660 | 730 | 630 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 550 J | 790 | 780 | 720 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 1230 J | 340 | 530 | 470 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3500 J | 3960 | 4400 | 3610 |
| Total PAH (calc'd) | -- | -- | -- | -- | 4730 J | 4300 | 4900 | 4080 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR101<br>SD-DR101-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR102<br>SD-DR102-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR127<br>SD-DR127-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR128<br>SD-DR128-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.16 U | 0.93 U | 0.72 U | 0.67 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.16 U | 0.93 U | 0.72 U | 0.67 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.32 U | **0.93 U** | 0.72 U | 0.67 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **1.2 UJ** | **0.93 U** | **0.72 U** | **0.67 U** |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 2.8 U | 20 U | 20 U | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 2.8 U | 20 U | 20 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 2.8 U | 20 U | 20 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 5.5 U | 20 U | 20 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 20 UJ | 20 U | 20 U | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 20 UJ | 20 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 6.9 UJ | 19 | 20 | 22 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 1.2 UJ | 1.4 | 1.4 | 1.7 |
| Diethyl phthalate | 61 | 110 | -- | -- | 1.2 UJ | 0.93 U | 0.72 U | 0.67 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 1.2 UJ | 0.93 U | 0.72 U | 0.67 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 1.2 J | 0.93 U | 0.72 | 0.67 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 1.2 UJ | 0.93 U | 0.72 U | 0.67 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 120 UJ | 400 | 550 | 660 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 20 UJ | 30 | 40 | 50 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 UJ | 20 U | 20 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 UJ | 20 U | 20 U | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 J | 20 U | 20 | 20 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 UJ | 20 U | 20 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 UJ | 20 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 40 UJ | 40 U | 40 U | 40 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | SMS 2LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>DR101<br>SD-DR101-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR102<br>SD-DR102-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR127<br>SD-DR127-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR128<br>SD-DR128-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 60 UJ | 60 U | 60 U | 60 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 UJ | 20 U | 20 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 UJ | 200 UJ | 200 U | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 UJ | 20 U | 20 U | 20 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 20 UJ | 20 U | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 200 UJ | 200 U | 200 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 200 UJ | 200 U | 200 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | 100 UJ | 100 U | 100 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 100 UJ | 100 U | 100 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 100 UJ | 100 U | 100 U | 100 U |
| Phenol | 420 | 1200 | -- | -- | 20 UJ | 20 U | 20 U | 80 |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 1.7 J | 0.93 | 1.1 | 1.3 |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.16 U | 0.93 U | 0.72 U | 0.67 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 2.3 UJ | 1.9 U | 1.4 U | 1.3 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 100 UJ | 100 U | 100 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 200 UJ | 200 U | 200 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | 100 UJ | 100 U | 100 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 200 UJ | 200 U | 200 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | 60 UJ | 60 U | 60 U | 60 U |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 UJ | 50 U | 50 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 200 UJ | 200 U | 200 U | 200 U |
| Carbazole | -- | -- | -- | -- | 50 J | 30 | 40 | 30 |
| Dibenzofuran | -- | -- | 540 | 700 | 30 J | 20 | 30 | 40 |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 2.8 U | 20 U | 20 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 5.5 U | 20 U | 20 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 100 UJ | 100 UJ | 100 UJ | 100 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR101<br>SD-DR101-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR102<br>SD-DR102-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR127<br>SD-DR127-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR128<br>SD-DR128-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 20 UJ | 20 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 40 UJ | 40 U | 40 U | 40 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 40 UJ | 40 U | 40 U | 40 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 40 UJ | 40 U | 40 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 UJ | 20 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 40 UJ | 40 U | 40 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 40 UJ | 40 U | 40 U | 40 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | 2 U | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | 3 U | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | 2 U | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | 1 U | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | 1 U | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | 1 U | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | 1 U | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | 1 U | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | 1 U | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | 2 U | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | 1 U | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | 2 U | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | 2 U | -- | -- | -- |
| Endrin | -- | -- | -- | -- | 2 U | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR101<br>SD-DR101-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR102<br>SD-DR102-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR127<br>SD-DR127-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR128<br>SD-DR128-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | 2 U | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | 2 U | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | 1 U | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | 1 U | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | 160 U | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | 2 U | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | 3 U | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | 1 U | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | 2 | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 2.3 UJ | 5 J | 6.4 | 5.6 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 UJ | 20 UJ | 20 UJ | 20 UJ |
| Aroclor-1221 | -- | -- | -- | -- | 40 UJ | 40 U | 40 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 UJ | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 UJ | 20 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 UJ | 20 U | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 20 UJ | 64 | 92 | 87 |
| Aroclor-1260 | -- | -- | -- | -- | 20 UJ | 44 J | 87 | 80 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 40 UJ | 108 J | 179 | 167 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | 1000 UJ | 3000 J | 1000 J | 1000 J |
| PCB-028 | -- | -- | -- | -- | 1000 UJ | 4000 J | 3000 J | 3000 J |
| PCB-044 | -- | -- | -- | -- | 1000 UJ | 2000 J | 3000 J | 2000 J |
| PCB-055 | -- | -- | -- | -- | 1000 J | 4000 J | 4000 J | 4000 J |
| PCB-066 | -- | -- | -- | -- | 2000 J | 6000 J | 10000 U | 10000 U |
| PCB-077 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 U | 1000 U |
| PCB-081 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR101<br>SD-DR101-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR102<br>SD-DR102-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR127<br>SD-DR127-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR128<br>SD-DR128-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 1000 UJ | 3000 J | 5000 J | 5000 J |
| PCB-105 | -- | -- | -- | -- | 1000 UJ | 2000 J | 3000 J | 3000 UJ |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-118 | -- | -- | -- | -- | 2000 J | 4000 | 6000 | 6000 |
| PCB-123 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-126 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 U | 1000 U |
| PCB-128 | -- | -- | -- | -- | 1000 UJ | 1000 J | 2000 J | 2000 J |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 3000 J | 8000 | 14000 J | 8000 UJ |
| PCB-153 | -- | -- | -- | -- | 2000 J | 6000 | 9000 J | 9000 J |
| PCB-156 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 J | 1000 J |
| PCB-157 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-167 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-169 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 U | 1000 U |
| PCB-170 | -- | -- | -- | -- | 1000 UJ | 2000 J | 5000 J | 5000 J |
| PCB-180 | -- | -- | -- | -- | 2000 J | 3000 J | 9000 J | 7000 J |
| PCB-187 | -- | -- | -- | -- | 1000 J | 2000 J | 5000 J | 4000 UJ |
| PCB-189 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-195 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 J | 1000 UJ |
| PCB-206 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 U | 1000 U |
| PCB-209 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 U | 1000 U |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | 66 | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | 9.6 | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | 1.2 U | -- | -- | -- |

## Table B-5

## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR101<br>SD-DR101-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR102<br>SD-DR102-0000<br>8/20/1998<br>0-10 cm<br>East Nav. Channel - POS | DR127<br>SD-DR127-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR128<br>SD-DR128-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | 1.1 U | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | 1.8 U | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | 3.4 U | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | 0.56 U | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | 2.2 U | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | 0.45 U | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | 0.62 U | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | 0.56 U | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | 0.5 U | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | 1.1 U | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | 0.39 U | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | 1.1 U | -- | -- | -- |
| OCDD | -- | -- | -- | -- | 620 | -- | -- | -- |
| OCDF | -- | -- | -- | -- | 28 | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | 2.2 | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR129<br>SD-DR129-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS | DR130<br>SD-DR130-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR146<br>SD-DR146-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS | DR152<br>SD-DR152-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.01 U | 0.38 | 0.01 U | 0.01 U |
| Sand (total calc'd) | -- | -- | -- | -- | 15.2 J | 17 J | 13.3 | 9.2 J |
| Silt (total calc'd) | -- | -- | -- | -- | 65 | 55 | 67 | 69 |
| Clay (total calc'd) | -- | -- | -- | -- | 19.5 | 27 | 19.4 | 22 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 85 | 82 | 86 | 91 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.67 | 2.87 | 2.63 | 2.37 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | 27000 | 20000 | 22000 | 26000 |
| Antimony | -- | -- | -- | -- | 10 U | 10 UJ | 10 UJ | 10 U |
| Arsenic | 57 | 93 | -- | -- | 14 | 10 | 12 | 13 |
| Barium | -- | -- | -- | -- | 91 | 80 | 84 | 88 |
| Beryllium | -- | -- | -- | -- | 0.46 | 0.33 | 0.48 | 0.45 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.5 | 0.3 | 0.5 | 0.5 |
| Calcium | -- | -- | -- | -- | 7300 | 5600 | 6400 | 7900 |
| Chromium | 260 | 270 | -- | -- | 37 | 28 | 29 | 34 |
| Cobalt | -- | -- | -- | -- | 11 | 10 | 10 | 11 |
| Copper | 390 | 390 | -- | -- | 75 | 67 | 67 | 73 |
| Iron | -- | -- | -- | -- | 35000 | 29000 J | 30000 J | 34000 |
| Lead | 450 | 530 | -- | -- | 47 | 34 | 33 | 38 |
| Magnesium | -- | -- | -- | -- | 9200 | 8200 | 9000 | 9200 |
| Manganese | -- | -- | -- | -- | 350 | 310 | 330 | 350 |
| Mercury | 0.41 | 0.59 | -- | -- | 0.19 | 0.18 | 0.17 | 0.25 |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR129<br>SD-DR129-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS | DR130<br>SD-DR130-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR146<br>SD-DR146-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS | DR152<br>SD-DR152-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 25 | 16 | 23 | 26 |
| Potassium | -- | -- | -- | -- | 3200 | 2700 | 2900 | 3100 |
| Selenium | -- | -- | -- | -- | 15 | 0.8 J | 6 J | 16 |
| Silver | 6.1 | 6.1 | -- | -- | 0.38 | 0.28 | 0.35 | 0.37 |
| Sodium | -- | -- | -- | -- | 14000 | 14000 | 13000 | 13000 |
| Thallium | -- | -- | -- | -- | 0.16 | 0.09 | 0.1 J | 0.14 |
| Tin | -- | -- | -- | -- | 8 UJ | 5 | 5 | 10 |
| Vanadium | -- | -- | -- | -- | 77 | 56 | 63 | 75 |
| Zinc | 410 | 960 | -- | -- | 140 | 130 | 120 | 120 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | 10 J |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | 24 J |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | 68 J |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | 5 J |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 1.1 | 0.7 | 0.76 U | 0.84 U |
| Acenaphthylene | 66 | 66 | -- | -- | 0.75 U | 0.7 U | 0.76 U | 0.84 U |
| Acenaphthene | 16 | 57 | -- | -- | 1.9 | 2.4 | 0.76 U | 0.84 U |
| Anthracene | 220 | 1200 | -- | -- | 4.5 | 3.1 | 3 | 3 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 11 | 9.1 | 9.5 | 9.3 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 11 | 7.7 | 9.5 | 9.3 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 5.6 | 5.2 | 5.7 | 5.9 |
| Chrysene | 110 | 460 | -- | -- | 18 | 15 | 14 | 15 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 0.75 U | 1.4 | 1.5 | 1.3 |
| Fluoranthene | 160 | 1200 | -- | -- | 28 | 34 | 25 | 22 |
| Fluorene | 23 | 79 | -- | -- | 2.6 | 2.4 | 1.1 | 1.3 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 6 | 5.6 | 7.2 | 5.9 |
| Naphthalene | 99 | 170 | -- | -- | 1.1 | 0.7 U | 0.76 U | 0.14 U |
| Phenanthrene | 100 | 480 | -- | -- | 12 | 17 | 6.5 | 7.6 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR129<br>SD-DR129-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS | DR130<br>SD-DR130-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR146<br>SD-DR146-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS | DR152<br>SD-DR152-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 28 | 28 | 17 | 23 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 25 | 20 | 22 | 23 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 22 | 25 | 11 | 12 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 130 | 130 | 110 | 110 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 30 | 20 | 20 U | 20 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | 20 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 50 | 70 | 20 U | 20 U |
| Anthracene | -- | -- | 960 | 4400 | 120 | 90 | 80 | 70 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 290 | 260 | 250 | 220 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 290 | 220 | 250 | 220 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 350 | 320 | 350 | 290 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 330 | 240 | 240 | 260 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 150 | 150 | 150 | 140 |
| Chrysene | -- | -- | 1400 | 2800 | 470 | 440 | 360 | 350 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 20 U | 40 | 40 | 30 |
| Fluoranthene | -- | -- | 1700 | 2500 | 740 | 990 | 660 | 530 |
| Fluorene | -- | -- | 540 | 1000 | 70 | 70 | 30 | 30 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 160 | 160 | 190 | 140 |
| Naphthalene | -- | -- | 2100 | 2400 | 30 | 20 U | 20 U | 3.2 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 310 | 500 | 170 | 180 |
| Pyrene | -- | -- | 2600 | 3300 | 740 | 800 | 460 | 540 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 680 | 560 | 590 | 550 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 580 | 730 | 280 | 280 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3520 | 3620 | 2950 | 2720 |
| Total PAH (calc'd) | -- | -- | -- | -- | 4100 | 4350 | 3230 | 3000 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR129<br>SD-DR129-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS | DR130<br>SD-DR130-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR146<br>SD-DR146-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS | DR152<br>SD-DR152-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.75 U | 0.7 U | 0.76 U | 0.14 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.75 U | 0.7 U | 0.76 U | 0.14 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | 0.75 U | 0.7 U | 0.76 U | 0.27 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.75 U** | **0.7 U** | **0.76 U** | **0.84 U** |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | 20 U | 20 U | 3.2 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | 3.2 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | 20 U | 20 U | 3.2 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 20 U | 20 U | 20 U | 6.4 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 20 U | 20 U | 20 U | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 21 | 18 | 20 | 19 |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 2.2 | 1.7 | 1.5 | 1.7 |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.75 U | 0.7 U | 0.76 U | 0.84 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.75 | 0.7 | 0.76 U | 0.84 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.75 | 0.7 U | 0.76 U | 0.84 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.75 | 0.7 U | 0.76 U | 0.84 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 550 | 510 | 530 | 450 |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 60 | 50 | 40 | 40 |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 20 U | 20 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 | 20 | 20 U | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 | 20 U | 20 U | 20 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 | 20 U | 20 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | SMS 2LAET[a] | DR129 SD-DR129-0000 8/27/1998 0-10 cm West Nav. Channel - POS | DR130 SD-DR130-0000 8/12/1998 0-10 cm West Nav. Channel - POS | DR146 SD-DR146-0000 8/19/1998 0-10 cm Nav. Channel - POS | DR152 SD-DR152-0000 8/27/1998 0-10 cm West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Location ID / Sample ID / Sample Date / Sample Depth | | | | | | | | |
| 2,4-Dichlorophenol | -- | -- | -- | -- | 60 U | 60 U | 60 U | 60 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 U | 200 U | 200 UJ | 200 U |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 100 U | 100 U | 100 U | 100 U |
| Phenol | 420 | 1200 | -- | -- | 20 | 20 U | 20 | 20 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 1.9 | 1.7 | 0.76 | 0.84 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.75 U | 0.7 U | 0.76 U | 0.27 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.5 U | 1.4 U | 1.5 U | 1.7 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | 60 U | 60 U | 60 U | 60 U |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 50 U | 50 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | 200 U | 200 U | 200 U |
| Carbazole | -- | -- | -- | -- | 40 | 40 | 30 | 30 |
| Dibenzofuran | -- | -- | 540 | 700 | 50 | 50 | 20 | 20 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 20 U | 20 U | 20 U | 6.4 U |
| Hexachloroethane | -- | -- | -- | -- | 20 U | 20 U | 20 U | 3.2 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 100 UJ | 100 U | 100 U | 100 UJ |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR129<br>SD-DR129-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS | DR130<br>SD-DR130-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR146<br>SD-DR146-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS | DR152<br>SD-DR152-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 40 U | 40 U | 40 U | 40 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | 2 U |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | 1 U |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | 2 UJ |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | 1 UJ |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | 1 U |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | 1 U |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | 1 U |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | 1 UJ |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | 1 U |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | 2 UJ |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | 1 U |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | 2 U |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | 2 U |
| Endrin | -- | -- | -- | -- | -- | -- | -- | 2 UJ |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR129<br>SD-DR129-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS | DR130<br>SD-DR130-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR146<br>SD-DR146-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS | DR152<br>SD-DR152-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | 2 U |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | 2 U |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | 1 UJ |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | 1 U |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | 45 U |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | 2 UJ |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | 2 UJ |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | 1 U |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | 1 U |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 8.1 | 5.5 | 4.8 J | 5.2 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 UJ | 20 UJ | 20 UJ | 20 UJ |
| Aroclor-1221 | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 26 | 20 U | 20 U | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 95 | 82 | 67 | 67 |
| Aroclor-1260 | -- | -- | -- | -- | 96 | 75 | 58 J | 57 |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 217 | 157 | 125 J | 124 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | 1000 J | 1000 J | 1000 UJ | 1000 J |
| PCB-028 | -- | -- | -- | -- | 2000 J | 3000 J | 2000 J | 2000 J |
| PCB-044 | -- | -- | -- | -- | 3000 J | 2000 J | 2000 J | 2000 J |
| PCB-055 | -- | -- | -- | -- | 4000 J | 4000 J | 3000 J | 3000 J |
| PCB-066 | -- | -- | -- | -- | 9000 J | 10000 | 6000 | 6000 J |
| PCB-077 | -- | -- | -- | -- | 1000 U | 1000 U | 1000 UJ | 1000 U |
| PCB-081 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR129<br>SD-DR129-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS | DR130<br>SD-DR130-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR146<br>SD-DR146-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS | DR152<br>SD-DR152-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 7000 J | 6000 J | 5000 J | 5000 J |
| PCB-105 | -- | -- | -- | -- | 2000 J | 3000 J | 1000 J | 2000 J |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-118 | -- | -- | -- | -- | 6000 J | 6000 | 4000 | 5000 J |
| PCB-123 | -- | -- | -- | -- | 1000 UJ | 2000 UJ | 1000 UJ | 1000 UJ |
| PCB-126 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ | 1000 UJ |
| PCB-128 | -- | -- | -- | -- | 2000 J | 2000 J | 1000 UJ | 1000 J |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 13000 | 13000 J | 7000 J | 10000 |
| PCB-153 | -- | -- | -- | -- | 9000 J | 9000 J | 6000 J | 7000 J |
| PCB-156 | -- | -- | -- | -- | 1000 J | 1000 J | 1000 UJ | 1000 UJ |
| PCB-157 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-167 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-169 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 U | 1000 UJ |
| PCB-170 | -- | -- | -- | -- | 7000 J | 4000 J | 2000 J | 5000 UJ |
| PCB-180 | -- | -- | -- | -- | 8000 J | 7000 J | 4000 | 4000 J |
| PCB-187 | -- | -- | -- | -- | 4000 J | 4000 J | 3000 | 3000 J |
| PCB-189 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 U | 1000 UJ |
| PCB-195 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-206 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 U | 1000 UJ |
| PCB-209 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 U | 1000 UJ |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR129<br>SD-DR129-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS | DR130<br>SD-DR130-0000<br>8/12/1998<br>0-10 cm<br>West Nav. Channel - POS | DR146<br>SD-DR146-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS | DR152<br>SD-DR152-0000<br>8/27/1998<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR153<br>SD-DR153-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - POS | DR154<br>SD-DR154-0000<br>8/13/1998<br>0-10 cm<br>West Nav. Channel - POS | DR162<br>SD-DR162-0000<br>8/27/1998<br>0-10 cm<br>Nav. Channel - POS | DR164<br>SD-DR164-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | 0.01 U | 0.06 | 0.22 | 0.01 U |
| Sand (total calc'd) | -- | -- | -- | -- | 11.5 J | 18.9 | 30 | 15.5 J |
| Silt (total calc'd) | -- | -- | -- | -- | 67 | 61 | 53 | 66 |
| Clay (total calc'd) | -- | -- | -- | -- | 21 | 20.1 | 17 | 18.4 |
| Fines (percent silt+clay) | -- | -- | -- | -- | 88 | 81 | 70 | 84 |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.19 | 2.33 | 1.9 | 2.58 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | 26000 | 19000 | 21000 | 22000 |
| Antimony | -- | -- | -- | -- | 10 UJ | 10 UJ | 10 U | 5 J |
| Arsenic | 57 | 93 | -- | -- | 14 | 11 | 12 | 11 |
| Barium | -- | -- | -- | -- | 93 | 74 | 82 | 78 |
| Beryllium | -- | -- | -- | -- | 0.49 | 0.46 | 0.42 | 0.49 |
| Cadmium | 5.1 | 6.7 | -- | -- | 0.62 | 0.37 | 0.4 | 0.4 |
| Calcium | -- | -- | -- | -- | 8000 | 5200 | 6900 | 5800 |
| Chromium | 260 | 270 | -- | -- | 39 | 29 | 27 | 28 |
| Cobalt | -- | -- | -- | -- | 11 | 9 | 10 | 11 |
| Copper | 390 | 390 | -- | -- | 84 | 57 | 55 | 56 |
| Iron | -- | -- | -- | -- | 36000 J | 30000 J | 29000 | 29000 J |
| Lead | 450 | 530 | -- | -- | 50 | 39 | 33 | 24 |
| Magnesium | -- | -- | -- | -- | 9900 | 7300 | 7700 | 9100 |
| Manganese | -- | -- | -- | -- | 370 | 330 | 330 | 360 |
| Mercury | 0.41 | 0.59 | -- | -- | 0.22 | 0.17 | 0.13 | 0.14 |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR153<br>SD-DR153-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - POS | DR154<br>SD-DR154-0000<br>8/13/1998<br>0-10 cm<br>West Nav. Channel - POS | DR162<br>SD-DR162-0000<br>8/27/1998<br>0-10 cm<br>Nav. Channel - POS | DR164<br>SD-DR164-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | 25 | 21 | 23 | 25 |
| Potassium | -- | -- | -- | -- | 3400 | 2500 | 2500 | 2800 |
| Selenium | -- | -- | -- | -- | 20 J | 5 | 15 | 6 J |
| Silver | 6.1 | 6.1 | -- | -- | 0.42 | 0.31 | 0.26 | 0.38 |
| Sodium | -- | -- | -- | -- | 15000 | 11000 | 11000 | 14000 |
| Thallium | -- | -- | -- | -- | 0.12 | 0.09 | 0.14 | 0.09 J |
| Tin | -- | -- | -- | -- | 9 | 6 | 5 UJ | 3 |
| Vanadium | -- | -- | -- | -- | 82 | 54 | 65 | 61 |
| Zinc | 410 | 960 | -- | -- | 150 | 130 | 100 | 98 |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | 17 J | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | 25 | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | 69 | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | 5 U | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | 0.91 U | 0.86 U | 1.1 U | 0.78 U |
| Acenaphthylene | 66 | 66 | -- | -- | 0.91 U | 0.86 U | 1.1 U | 0.78 U |
| Acenaphthene | 16 | 57 | -- | -- | 1.8 | 0.86 U | 1.1 U | 0.78 U |
| Anthracene | 220 | 1200 | -- | -- | 5.5 | 1.7 | 2.6 | 1.6 |
| Benzo(a)anthracene | 110 | 270 | -- | -- | 15 | 7.3 | 7.9 | 4.7 |
| Benzo(a)pyrene | 99 | 210 | -- | -- | 13 | 6.4 | 7.9 | 4.7 |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | 9.6 | 4.7 | 4.7 | 3.5 |
| Chrysene | 110 | 460 | -- | -- | 23 | 9.9 | 12 | 6.6 |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | 2.7 | 1.3 | 1.1 | 0.78 U |
| Fluoranthene | 160 | 1200 | -- | -- | 39 | 18 | 18 | 13 |
| Fluorene | 23 | 79 | -- | -- | 2.7 | 0.86 U | 1.6 | 0.78 |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | 10 | 4.7 | 4.7 | 4.3 |
| Naphthalene | 99 | 170 | -- | -- | 0.91 U | 0.86 U | 1.1 U | 0.78 U |
| Phenanthrene | 100 | 480 | -- | -- | 12 | 5.2 | 7.9 | 3.9 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR153<br>SD-DR153-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - POS | DR154<br>SD-DR154-0000<br>8/13/1998<br>0-10 cm<br>West Nav. Channel - POS | DR162<br>SD-DR162-0000<br>8/27/1998<br>0-10 cm<br>Nav. Channel - POS | DR164<br>SD-DR164-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | 26 | 15 | 20 | 8.9 |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | 32 | 16 | 18 | 11 |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | 22 | 6.9 | 12 | 6.2 |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | 170 | 85 | 95 | 57 |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | 20 U | 20 U | 20 U | 20 U |
| Acenaphthylene | -- | -- | 1300 | 1300 | 20 U | 20 U | 20 U | 20 U |
| Acenaphthene | -- | -- | 500 | 730 | 40 | 20 U | 20 U | 20 U |
| Anthracene | -- | -- | 960 | 4400 | 120 | 40 | 50 | 40 |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | 320 | 170 | 150 | 120 |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | 290 | 150 | 150 | 120 |
| Benzo(b)fluoranthene | -- | -- | -- | -- | 390 | 210 | 170 | 160 |
| Benzo(k)fluoranthene | -- | -- | -- | -- | 310 | 170 | 180 | 120 |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | 210 | 110 | 90 | 90 |
| Chrysene | -- | -- | 1400 | 2800 | 500 | 230 | 220 | 170 |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | 60 | 30 | 20 | 20 U |
| Fluoranthene | -- | -- | 1700 | 2500 | 850 | 430 | 350 | 340 |
| Fluorene | -- | -- | 540 | 1000 | 60 | 20 U | 30 | 20 |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | 220 | 110 | 90 | 110 |
| Naphthalene | -- | -- | 2100 | 2400 | 20 U | 20 U | 20 U | 20 U |
| Phenanthrene | -- | -- | 1500 | 5400 | 270 | 120 | 150 | 100 |
| Pyrene | -- | -- | 2600 | 3300 | 580 | 360 | 380 | 230 |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | 700 | 380 | 350 | 280 |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | 490 | 160 | 230 | 160 |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | 3730 | 1970 | 1800 | 1460 |
| Total PAH (calc'd) | -- | -- | -- | -- | 4220 | 2130 | 2030 | 1620 |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR153<br>SD-DR153-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - POS | DR154<br>SD-DR154-0000<br>8/13/1998<br>0-10 cm<br>West Nav. Channel - POS | DR162<br>SD-DR162-0000<br>8/27/1998<br>0-10 cm<br>Nav. Channel - POS | DR164<br>SD-DR164-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | 0.91 U | 0.86 U | 1.1 U | 0.78 U |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | 0.91 U | 0.86 U | 1.1 U | 0.78 U |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | **0.91 U** | **0.86 U** | **1.1 U** | 0.78 U |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | **0.91 U** | **0.86 U** | **1.1 U** | **0.78 U** |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | 20 U | 20 U | 20 U | 20 U |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | 20 U | 20 U | 20 U | 20 U |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | 20 U | 20 U | 20 U | 20 U |
| Hexachlorobenzene | -- | -- | 22 | 70 | 20 U | 20 U | 20 U | 20 U |
| Nitrobenzene | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | 23 | 17 UJ | 13 | 11 U |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | 2.3 | 0.86 U | 1.6 | 0.78 U |
| Diethyl phthalate | 61 | 110 | -- | -- | 0.91 U | 0.86 U | 1.1 U | 0.78 U |
| Dimethyl phthalate | 53 | 53 | -- | -- | 0.91 U | 0.86 U | 1.1 U | 0.78 U |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | 0.91 U | 0.86 U | 1.1 U | 0.78 U |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | 0.91 U | 0.86 U | 1.1 U | 0.78 U |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | 510 | 390 UJ | 250 | 280 U |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | 50 | 20 U | 30 | 20 U |
| Diethyl phthalate | -- | -- | 200 | 1200 | 20 U | 20 U | 20 U | 20 U |
| Dimethyl phthalate | -- | -- | 71 | 160 | 20 U | 20 U | 20 U | 20 U |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | 20 U | 20 U | 20 U | 20 U |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | 20 U | 20 U | 20 U | 20 U |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR153<br>SD-DR153-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - POS | DR154<br>SD-DR154-0000<br>8/13/1998<br>0-10 cm<br>West Nav. Channel - POS | DR162<br>SD-DR162-0000<br>8/27/1998<br>0-10 cm<br>Nav. Channel - POS | DR164<br>SD-DR164-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | 60 U | 60 U | 60 U | 60 U |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 2,4-Dinitrophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 UJ |
| 2-Methylphenol | 63 | 63 | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 4-Methylphenol | 670 | 670 | -- | -- | 20 U | 20 U | 20 U | 20 U |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 2-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| 4-Nitrophenol | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| Pentachlorophenol | 360 | 690 | -- | -- | 100 U | 100 U | 100 U | 100 U |
| Phenol | 420 | 1200 | -- | -- | 20 U | 40 | 20 U | 20 U |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | 1.8 | 0.86 U | 1.1 U | 0.78 U |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | 0.91 U | 0.86 U | 1.1 U | 0.78 U |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | 1.8 U | 1.7 U | 2.1 U | 1.6 U |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| 3-Nitroaniline | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 4-Nitroaniline | -- | -- | -- | -- | 100 U | 100 U | 100 U | 100 U |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | 200 U | 200 U | 200 U | 200 U |
| 4-Chloroaniline | -- | -- | -- | -- | 60 U | 60 U | 60 U | 60 U |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | 50 U | 50 U | 50 U | 50 U |
| Benzoic acid | 650 | 650 | -- | -- | 200 U | 200 U | 200 U | 200 U |
| Carbazole | -- | -- | -- | -- | 50 | 20 U | 20 U | 20 U |
| Dibenzofuran | -- | -- | 540 | 700 | 40 | 20 U | 20 U | 20 U |
| Hexachlorobutadiene | -- | -- | 11 | 120 | 20 U | 20 U | 20 U | 20 U |
| Hexachloroethane | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | 100 UJ | 100 UJ | 100 UJ | 100 U |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR153<br>SD-DR153-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - POS | DR154<br>SD-DR154-0000<br>8/13/1998<br>0-10 cm<br>West Nav. Channel - POS | DR162<br>SD-DR162-0000<br>8/27/1998<br>0-10 cm<br>Nav. Channel - POS | DR164<br>SD-DR164-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | 40 U | 40 U | 40 U | 40 U |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | 2 U | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | 1 U | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | 1 UJ | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | 1 U | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | 1 U | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | 1 U | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | 1 U | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | 1 U | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | 2 UJ | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | 1 U | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | 3 U | -- | -- |
| Endrin | -- | -- | -- | -- | -- | 2 U | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR153<br>SD-DR153-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - POS | DR154<br>SD-DR154-0000<br>8/13/1998<br>0-10 cm<br>West Nav. Channel - POS | DR162<br>SD-DR162-0000<br>8/27/1998<br>0-10 cm<br>Nav. Channel - POS | DR164<br>SD-DR164-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | 1 U | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | 10 U | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | 2 UJ | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | 2 U | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | 1 U | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | 1 U | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 5.2 | 4.3 J | 7.7 | 2.5 J |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | 20 U | 20 UJ | 20 UJ | 20 UJ |
| Aroclor-1221 | -- | -- | -- | -- | 40 U | 40 U | 40 U | 40 U |
| Aroclor-1232 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1242 | -- | -- | -- | -- | 20 U | 20 U | 24 | 20 U |
| Aroclor-1248 | -- | -- | -- | -- | 20 U | 20 U | 20 U | 20 U |
| Aroclor-1254 | -- | -- | -- | -- | 64 | 57 | 69 | 34 |
| Aroclor-1260 | -- | -- | -- | -- | 49 | 44 J | 53 | 30 J |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 113 | 101 J | 146 | 64 J |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 J | 1000 UJ |
| PCB-028 | -- | -- | -- | -- | 2000 UJ | 1000 J | 2000 J | 1000 J |
| PCB-044 | -- | -- | -- | -- | 2000 UJ | 1000 J | 2000 J | 1000 UJ |
| PCB-055 | -- | -- | -- | -- | 3000 UJ | 3000 J | 4000 J | 2000 J |
| PCB-066 | -- | -- | -- | -- | 7000 UJ | 6000 J | 6000 J | 3000 |
| PCB-077 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 U | 1000 UJ |
| PCB-081 | -- | -- | -- | -- | 1000 U | 1000 UJ | 1000 UJ | 1000 UJ |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR153<br>SD-DR153-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - POS | DR154<br>SD-DR154-0000<br>8/13/1998<br>0-10 cm<br>West Nav. Channel - POS | DR162<br>SD-DR162-0000<br>8/27/1998<br>0-10 cm<br>Nav. Channel - POS | DR164<br>SD-DR164-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 3000 J | 5000 J | 6000 J | 2000 J |
| PCB-105 | -- | -- | -- | -- | 2000 J | 2000 J | 2000 J | 1000 UJ |
| PCB-110 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-114 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-118 | -- | -- | -- | -- | 3000 J | 4000 J | 4000 J | 2000 |
| PCB-123 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-126 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-128 | -- | -- | -- | -- | 1000 UJ | 1000 J | 1000 J | 1000 UJ |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 7000 J | 8000 J | 9000 | 4000 J |
| PCB-153 | -- | -- | -- | -- | 5000 J | 6000 J | 6000 J | 4000 J |
| PCB-156 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-157 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-167 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-169 | -- | -- | -- | -- | 1000 U | 1000 UJ | 1000 UJ | 1000 U |
| PCB-170 | -- | -- | -- | -- | 2000 J | 3000 J | 3000 J | 1000 J |
| PCB-180 | -- | -- | -- | -- | 3000 J | 4000 J | 4000 J | 2000 |
| PCB-187 | -- | -- | -- | -- | 2000 J | 3000 J | 3000 J | 2000 |
| PCB-189 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 U |
| PCB-195 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 UJ |
| PCB-206 | -- | -- | -- | -- | 1000 UJ | 1000 UJ | 1000 UJ | 1000 U |
| PCB-209 | -- | -- | -- | -- | 1000 UJ | 1000 U | 1000 UJ | 1000 U |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | 400 | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | 66 | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | 6.9 J | -- | -- |

## Table B-5
## Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | DR153<br>SD-DR153-0000<br>8/31/1998<br>0-10 cm<br>West Nav. Channel - POS | DR154<br>SD-DR154-0000<br>8/13/1998<br>0-10 cm<br>West Nav. Channel - POS | DR162<br>SD-DR162-0000<br>8/27/1998<br>0-10 cm<br>Nav. Channel - POS | DR164<br>SD-DR164-0000<br>8/19/1998<br>0-10 cm<br>Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | 3.8 U | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | 10 | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | 17 | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | 3.2 U | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | 10 | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | 0.57 U | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | 1.8 U | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | 1.4 U | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | 2 U | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | 3 U | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | 0.91 U | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | 2.3 | -- | -- |
| OCDD | -- | -- | -- | -- | -- | 4000 | -- | -- |
| OCDF | -- | -- | -- | -- | -- | 230 | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | 9.3 J | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WST350<br>WST17-01<br>10/22/1997<br>0-10 cm<br>West Nav. Channel - POS | WST351<br>WST17-02<br>10/6/1997<br>0-10 cm<br>West Nav. Channel - POS | WST356<br>WST18-04<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS | WST357<br>WST18-05<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Sediment Grain Size (Percent)** | | | | | | | | |
| Rocks (total calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sand (total calc'd) | -- | -- | -- | -- | 6.8 | 10 | 2.4 | 4.3 |
| Silt (total calc'd) | -- | -- | -- | -- | 65 | 63 | 71 | 69 |
| Clay (total calc'd) | -- | -- | -- | -- | 28 | 26 | 27 | 26 |
| Fines (percent silt+clay) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Conventional Parameters** | | | | | | | | |
| Total Organic Carbon (TOC) | -- | -- | -- | -- | 2.25 | 2.12 | 2.32 | 2.29 |
| Total solids | -- | -- | -- | -- | -- | -- | -- | -- |
| Total solids (preserved) | -- | -- | -- | -- | -- | -- | -- | -- |
| Ammonia (total as nitrogen) | -- | -- | -- | -- | -- | -- | -- | -- |
| Sulfides (total) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (mg/kg dry weight)** | | | | | | | | |
| Aluminum | -- | -- | -- | -- | -- | -- | -- | -- |
| Antimony | -- | -- | -- | -- | -- | -- | -- | -- |
| Arsenic | 57 | 93 | -- | -- | -- | -- | -- | -- |
| Barium | -- | -- | -- | -- | -- | -- | -- | -- |
| Beryllium | -- | -- | -- | -- | -- | -- | -- | -- |
| Cadmium | 5.1 | 6.7 | -- | -- | -- | -- | -- | -- |
| Calcium | -- | -- | -- | -- | -- | -- | -- | -- |
| Chromium | 260 | 270 | -- | -- | -- | -- | -- | -- |
| Cobalt | -- | -- | -- | -- | -- | -- | -- | -- |
| Copper | 390 | 390 | -- | -- | -- | -- | -- | -- |
| Iron | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead | 450 | 530 | -- | -- | -- | -- | -- | -- |
| Magnesium | -- | -- | -- | -- | -- | -- | -- | -- |
| Manganese | -- | -- | -- | -- | -- | -- | -- | -- |
| Mercury | 0.41 | 0.59 | -- | -- | -- | -- | -- | -- |
| Molybdenum | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WST350<br>WST17-01<br>10/22/1997<br>0-10 cm<br>West Nav. Channel - POS | WST351<br>WST17-02<br>10/6/1997<br>0-10 cm<br>West Nav. Channel - POS | WST356<br>WST18-04<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS | WST357<br>WST18-05<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Nickel | -- | -- | -- | -- | -- | -- | -- | -- |
| Potassium | -- | -- | -- | -- | -- | -- | -- | -- |
| Selenium | -- | -- | -- | -- | -- | -- | -- | -- |
| Silver | 6.1 | 6.1 | -- | -- | -- | -- | -- | -- |
| Sodium | -- | -- | -- | -- | -- | -- | -- | -- |
| Thallium | -- | -- | -- | -- | -- | -- | -- | -- |
| Tin | -- | -- | -- | -- | -- | -- | -- | -- |
| Vanadium | -- | -- | -- | -- | -- | -- | -- | -- |
| Zinc | 410 | 960 | -- | -- | -- | -- | -- | -- |
| **Organometallic Compounds (µg/kg dry weight)** | | | | | | | | |
| Monobutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tributyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrabutyltin as ion | -- | -- | -- | -- | -- | -- | -- | -- |
| **PAHs (mg/kg organic carbon)** | | | | | | | | |
| 2-Methylnaphthalene | 38 | 64 | -- | -- | -- | -- | -- | -- |
| Acenaphthylene | 66 | 66 | -- | -- | -- | -- | -- | -- |
| Acenaphthene | 16 | 57 | -- | -- | -- | -- | -- | -- |
| Anthracene | 220 | 1200 | -- | -- | -- | -- | -- | -- |
| Benzo(a)anthracene | 110 | 270 | -- | -- | -- | -- | -- | -- |
| Benzo(a)pyrene | 99 | 210 | -- | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | 31 | 78 | -- | -- | -- | -- | -- | -- |
| Chrysene | 110 | 460 | -- | -- | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | 12 | 33 | -- | -- | -- | -- | -- | -- |
| Fluoranthene | 160 | 1200 | -- | -- | -- | -- | -- | -- |
| Fluorene | 23 | 79 | -- | -- | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | 34 | 88 | -- | -- | -- | -- | -- | -- |
| Naphthalene | 99 | 170 | -- | -- | -- | -- | -- | -- |
| Phenanthrene | 100 | 480 | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WST350<br>WST17-01<br>10/22/1997<br>0-10 cm<br>West Nav. Channel - POS | WST351<br>WST17-02<br>10/6/1997<br>0-10 cm<br>West Nav. Channel - POS | WST356<br>WST18-04<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS | WST357<br>WST18-05<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Pyrene | 1000 | 1400 | -- | -- | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | 230 | 450 | -- | -- | -- | -- | -- | -- |
| Total LPAH (calc'd) | 370 | 780 | -- | -- | -- | -- | -- | -- |
| Total HPAH (calc'd) | 960 | 5300 | -- | -- | -- | -- | -- | -- |
| **PAHs (µg/kg dry weight)** | | | | | | | | |
| 1-Methylnaphthalene | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylnaphthalene | -- | -- | 670 | 1400 | -- | -- | -- | -- |
| Acenaphthylene | -- | -- | 1300 | 1300 | -- | -- | -- | -- |
| Acenaphthene | -- | -- | 500 | 730 | -- | -- | -- | -- |
| Anthracene | -- | -- | 960 | 4400 | -- | -- | -- | -- |
| Benzo(a)anthracene | -- | -- | 1300 | 1600 | -- | -- | -- | -- |
| Benzo(a)pyrene | -- | -- | 1600 | 3000 | -- | -- | -- | -- |
| Benzo(b)fluoranthene | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(k)fluoranthene | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | -- | -- | 670 | 720 | -- | -- | -- | -- |
| Chrysene | -- | -- | 1400 | 2800 | -- | -- | -- | -- |
| Dibenzo(a,h)anthracene | -- | -- | 230 | 540 | -- | -- | -- | -- |
| Fluoranthene | -- | -- | 1700 | 2500 | -- | -- | -- | -- |
| Fluorene | -- | -- | 540 | 1000 | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | -- | -- | 600 | 690 | -- | -- | -- | -- |
| Naphthalene | -- | -- | 2100 | 2400 | -- | -- | -- | -- |
| Phenanthrene | -- | -- | 1500 | 5400 | -- | -- | -- | -- |
| Pyrene | -- | -- | 2600 | 3300 | -- | -- | -- | -- |
| Benzofluoranthenes (total-calc'd) | -- | -- | 3200 | 3600 | -- | -- | -- | -- |
| Total LPAH (calc'd) | -- | -- | 5200 | 13000 | -- | -- | -- | -- |
| Total HPAH (calc'd) | -- | -- | 12000 | 17000 | -- | -- | -- | -- |
| Total PAH (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

**Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property**

| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | SMS 2LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>WST350<br>WST17-01<br>10/22/1997<br>0-10 cm<br>West Nav. Channel - POS | WST351<br>WST17-02<br>10/6/1997<br>0-10 cm<br>West Nav. Channel - POS | WST356<br>WST18-04<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS | WST357<br>WST18-05<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| **Benzenes (mg/kg organic carbon)** | | | | | | | | |
| 1,2-Dichlorobenzene | 2.3 | 2.3 | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | 3.1 | 9 | -- | -- | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | 0.81 | 1.8 | -- | -- | -- | -- | -- | -- |
| Hexachlorobenzene | 0.38 | 2.3 | -- | -- | -- | -- | -- | -- |
| **Benzenes (µg/kg dry weight)** | | | | | | | | |
| 1,2-Dichlorobenzene | -- | -- | 35 | 50 | -- | -- | -- | -- |
| 1,3-Dichlorobenzene | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | -- | -- | 110 | 120 | -- | -- | -- | -- |
| 1,2,4-Trichlorobenzene | -- | -- | 31 | 51 | -- | -- | -- | -- |
| Hexachlorobenzene | -- | -- | 22 | 70 | -- | -- | -- | -- |
| Nitrobenzene | -- | -- | -- | -- | -- | -- | -- | -- |
| **Phthalates (mg/kg organic carbon)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 47 | 78 | -- | -- | -- | -- | -- | -- |
| Butyl benzyl phthalate | 4.9 | 64 | -- | -- | -- | -- | -- | -- |
| Diethyl phthalate | 61 | 110 | -- | -- | -- | -- | -- | -- |
| Dimethyl phthalate | 53 | 53 | -- | -- | -- | -- | -- | -- |
| Di-n-butyl phthalate | 220 | 1700 | -- | -- | -- | -- | -- | -- |
| Di-n-octyl phthalate | 58 | 4500 | -- | -- | -- | -- | -- | -- |
| **Phthalates (µg/kg dry weight)** | | | | | | | | |
| Bis(2-ethylhexyl)phthalate | -- | -- | 1300 | 1900 | -- | -- | -- | -- |
| Butyl benzyl phthalate | -- | -- | 63 | 900 | -- | -- | -- | -- |
| Diethyl phthalate | -- | -- | 200 | 1200 | -- | -- | -- | -- |
| Dimethyl phthalate | -- | -- | 71 | 160 | -- | -- | -- | -- |
| Di-n-butyl phthalate | -- | -- | 1400 | 5100 | -- | -- | -- | -- |
| Di-n-octyl phthalate | -- | -- | 6200 | -- | -- | -- | -- | -- |
| **Phenols (µg/kg dry weight)** | | | | | | | | |
| 2-Chlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloro-3-methylphenol | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WST350<br>WST17-01<br>10/22/1997<br>0-10 cm<br>West Nav. Channel - POS | WST351<br>WST17-02<br>10/6/1997<br>0-10 cm<br>West Nav. Channel - POS | WST356<br>WST18-04<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS | WST357<br>WST18-05<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4-Dimethylphenol | 29 | 29 | -- | -- | -- | -- | -- | -- |
| 2,4-Dinitrophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Methylphenol | 63 | 63 | -- | -- | -- | -- | -- | -- |
| 4-Methylphenol | 670 | 670 | -- | -- | -- | -- | -- | -- |
| 2,4,5-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4,6-Trichlorophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Nitrophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitrophenol | -- | -- | -- | -- | -- | -- | -- | -- |
| Pentachlorophenol | 360 | 690 | -- | -- | -- | -- | -- | -- |
| Phenol | 420 | 1200 | -- | -- | -- | -- | -- | -- |
| **Misc Extractables (mg/kg organic carbon)** | | | | | | | | |
| Dibenzofuran | 15 | 58 | -- | -- | -- | -- | -- | -- |
| Hexachlorobutadiene | 3.9 | 6.2 | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | 11 | 11 | -- | -- | -- | -- | -- | -- |
| **Misc Extractables (µg/kg dry weight)** | | | | | | | | |
| 2-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| 3-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Nitroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chloroaniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Aniline | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzyl alcohol | 57 | 73 | -- | -- | -- | -- | -- | -- |
| Benzoic acid | 650 | 650 | -- | -- | -- | -- | -- | -- |
| Carbazole | -- | -- | -- | -- | -- | -- | -- | -- |
| Dibenzofuran | -- | -- | 540 | 700 | -- | -- | -- | -- |
| Hexachlorobutadiene | -- | -- | 11 | 120 | -- | -- | -- | -- |
| Hexachloroethane | -- | -- | -- | -- | -- | -- | -- | -- |
| Hexachlorocyclopentadiene | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WST350<br>WST17-01<br>10/22/1997<br>0-10 cm<br>West Nav. Channel - POS | WST351<br>WST17-02<br>10/6/1997<br>0-10 cm<br>West Nav. Channel - POS | WST356<br>WST18-04<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS | WST357<br>WST18-05<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Isophorone | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitroso-di-n-propylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodimethylamine | -- | -- | -- | -- | -- | -- | -- | -- |
| N-Nitrosodiphenylamine | -- | -- | 28 | 40 | -- | -- | -- | -- |
| **Ethers (µg/kg dry weight)** | | | | | | | | |
| 4-Bromophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- | -- |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroethyl)ether | -- | -- | -- | -- | -- | -- | -- | -- |
| bis(2-chloroisopropyl)ether | -- | -- | -- | -- | -- | -- | -- | -- |
| **Pesticides (µg/kg dry weight)** | | | | | | | | |
| 2,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDE | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT | -- | -- | -- | -- | -- | -- | -- | -- |
| Aldrin | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| delta-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-BHC | -- | -- | -- | -- | -- | -- | -- | -- |
| gamma-Chlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Oxychlordane | -- | -- | -- | -- | -- | -- | -- | -- |
| Dieldrin | -- | -- | -- | -- | -- | -- | -- | -- |
| alpha-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- |
| beta-Endosulfan | -- | -- | -- | -- | -- | -- | -- | -- |
| Endosulfan sulfate | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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| Analyte Group | SMS SQS | SMS CSL | SMS LAET[a] | Location ID<br>Sample ID<br>Sample Date<br>Sample Depth<br>SMS 2LAET[a] | WST350<br>WST17-01<br>10/22/1997<br>0-10 cm<br>West Nav. Channel - POS | WST351<br>WST17-02<br>10/6/1997<br>0-10 cm<br>West Nav. Channel - POS | WST356<br>WST18-04<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS | WST357<br>WST18-05<br>10/10/1997<br>0-10 cm<br>West Nav. Channel - POS |
|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | -- | -- | -- | -- | -- | -- | -- | -- |
| Endrin ketone | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor | -- | -- | -- | -- | -- | -- | -- | -- |
| Heptachlor epoxide | -- | -- | -- | -- | -- | -- | -- | -- |
| Toxaphene | -- | -- | -- | -- | -- | -- | -- | -- |
| Total aldrin/dieldrin (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| DDTs (total-calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| Total Chlordane (calc'd) | -- | -- | -- | -- | -- | -- | -- | -- |
| **Herbicides (µg/kg dry weight)** | | | | | | | | |
| Methoxychlor | -- | -- | -- | -- | -- | -- | -- | -- |
| **PCB Aroclors (mg/kg organic carbon)** | | | | | | | | |
| PCBs (total calc'd) | 12 | 65 | -- | -- | 6.2 | **12** | 5.2 | 6.1 |
| **PCB Aroclors (µg/kg dry weight)** | | | | | | | | |
| Aroclor-1016 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1221 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1232 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1242 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1248 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1254 | -- | -- | -- | -- | -- | -- | -- | -- |
| Aroclor-1260 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCBs (total calc'd) | -- | -- | 130 | 1000 | 140 | 260 | 120 | 140 |
| **PCBs Congeners (ng/kg dry weight)** | | | | | | | | |
| PCB-018 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-028 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-044 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-055 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-066 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-077 | -- | -- | -- | -- | 330 U | 450 U | 370 U | 310 U |
| PCB-081 | -- | -- | -- | -- | -- | -- | -- | -- |

**Table B-5**

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|---|---|---|---|---|---|---|---|---|
| PCB-090 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-101 | -- | -- | -- | -- | 33000 J | 66000 J | 33000 J | 36000 J |
| PCB-105 | -- | -- | -- | -- | 4300 | 8400 | 3500 | 7200 |
| PCB-110 | -- | -- | -- | -- | 8700 | 20000 | 7000 | 9300 |
| PCB-114 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-118 | -- | -- | -- | -- | 8500 | 15000 | 5800 | 10000 |
| PCB-123 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-126 | -- | -- | -- | -- | 290 U | 410 U | 340 U | 280 U |
| PCB-128 | -- | -- | -- | -- | 4400 U | 8500 J | 2200 J | 5400 J |
| PCB-129 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-138 | -- | -- | -- | -- | 7800 | 15000 | 5400 | 7500 |
| PCB-153 | -- | -- | -- | -- | 23000 J | 49000 J | 23000 J | 24000 J |
| PCB-156 | -- | -- | -- | -- | 260 U | 1400 | 780 | 950 |
| PCB-157 | -- | -- | -- | -- | 230 U | 320 U | 270 U | 220 U |
| PCB-167 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-169 | -- | -- | -- | -- | 730 U | 1000 U | 840 U | 700 U |
| PCB-170 | -- | -- | -- | -- | 4800 | 8800 | 3400 | 4200 |
| PCB-180 | -- | -- | -- | -- | 6800 | 13000 | 4700 | 7600 |
| PCB-187 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-189 | -- | -- | -- | -- | 330 U | 460 U | 380 U | 320 U |
| PCB-195 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-206 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB-209 | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| PCB TEQ - Mammal - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |
| **Dioxin/Furans (ng/kg dry weight)** | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,6,7,8-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8,9-HpCDF | -- | -- | -- | -- | -- | -- | -- | -- |

## Table B-5

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|---|---|---|---|---|---|---|---|---|
| 1,2,3,4,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,4,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8,9-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2,3,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,6,7,8-HxCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,4,7,8-PeCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| 2,3,7,8-TCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDD | -- | -- | -- | -- | -- | -- | -- | -- |
| OCDF | -- | -- | -- | -- | -- | -- | -- | -- |
| Dioxin/furan TEQ - Bird - Half DL | -- | -- | -- | -- | -- | -- | -- | -- |

**Notes:**

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

**Bold** Detected concentration greater than or equal to SMS SQS and less than SMS CSL cri

***Bold*** Detected concentration greater than or equal to SMS CSL criteria.