Remedial Investigation and Feasibility Study Work Plan

October 2012

Crowley Marine Services 8th Avenue S. Site
8th Avenue Terminals, Inc.
7400 8th Avenue South
Seattle, Washington 98108

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List of Acronyms

Ag	silver
ARAR	applicable or relevant and appropriate requirement
As	arsenic
AST	aboveground storage tank
Ba	barium
BEHP	bis(2-ethylhexyl)phthalate
bgs	below ground surface
Cd	cadmium
cm	centimeter
COPCs	contaminants of potential concern
cPAHs	carcinogenic polycyclic aromatic hydrocarbons
Cr	chromium
Crowley	Crowley Marine Services, Inc.
CSM	Conceptual Site Model
Cu	copper
DGPS	differential global positioning system
DOC	dissolved organic carbon
DRO	diesel-range organic hydrocarbons
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management
EM	electromagnetic
EPA	United States Environmental Protection Agency
FS	feasibility study
GPR	ground-penetrating radar
GRO	gasoline-range organic hydrocarbons
HASP	Health and Safety Plan
Hg	mercury
HO	heavy oil range hydrocarbons
MLLW	mean lower low water
MS	matrix spike
MSD	matrix spike duplicate
MTCA	Model Toxics Control Act
Ni	nickel
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System

NWTPH-Dx	Northwest Method total petroleum hydrocarbon as diesel extended
NWTPH-Gx	Northwest Method total petroleum hydrocarbon as gasoline extended
PAH	polycyclic aromatic hydrocarbon
Pb	lead
PCB	polychlorinated biphenyl
PCE	perchloroethene
pH	acidity/alkalinity
PID	photoionization detector
PLP	potentially liable party
PQL	practical quantitation limit
PSEP	Puget Sound Estuary Program
PTI	PTI Environmental Services
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RI	remedial investigation
SAIC	Science Applications International Corporation
SAP	Sampling and Analysis Plan
Sb	antimony
Se	selenium
SEPA	State Environmental Policy Act
SLR	SLR International Corporation
SIM	selective ion monitoring
SOW	scope of work
SVOC	semivolatile organic compound
TDS	total dissolved solid
TEE	terrestrial ecological evaluation
TOC	total organic carbon
TPH	total petroleum hydrocarbon
TSS	total suspended solid
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative Code
Zn	zinc

Section 1: Introduction

On 12 October 2009, 8th Avenue Terminals, Inc. (8th Avenue Terminals) entered into an Agreed Order No. DE 6721 (Agreed Order) with the Washington State Department of Ecology (Ecology) to complete a remedial investigation and feasibility study (RI/FS), and prepare a draft cleanup action plan for the 8th Avenue Terminals site (site).

The site is defined by the extent of contamination caused by the release of hazardous substances at the 8th Avenue Terminals property at 7400 8th Avenue South in Seattle, Washington. The 8th Avenue Terminals property is located along the northeastern bank of the Duwamish Waterway and the western bank of Slip 4, and includes the southwestern part of Slip 4 (see Figure 1).

In early 2008, Ecology issued a site Hazard Ranking of “2” for the 8th Avenue Terminals property, in large part due to the potential for contaminants on the property to migrate to Duwamish Waterway (primarily Slip 4) sediments. In response, Crowley Marine Services, Inc. (Crowley) independently conducted an investigation at the property to assess the potential contaminant migration pathways. A report that presented the results of the investigation was submitted to Ecology on 1 August 2008 [SLR International Corporation (SLR) 2008].

An Ecology Agreed Order was required to provide additional data and analysis to determine the potential risks to the Duwamish Waterway posed by the property, to determine if active cleanup of the 8th Avenue Terminals property is necessary and, if so, to facilitate the selection of a cleanup alternative. More specifically, the RI will determine the nature and extent of contamination and assess the potential risks to human health and the environment. The FS will identify, screen, and evaluate potential remedial measures.

This RI/FS Work Plan (work plan) was prepared to identify and describe the tasks that will be conducted to complete the RI/FS at the site. The RI will primarily consist of collecting the necessary data to better understand contaminant fate and transport and the potential receptors, and to further evaluate the applicable or relevant and appropriate requirements (ARARs) for the site. The RI will also assess the potential contaminant source areas that have limited data. After identifying the appropriate ARARs for the site, the preliminary conceptual site model will be revised, as appropriate, and preliminary soil and groundwater cleanup levels will be developed for the contaminants of potential concern (COPCs) in accordance with Washington Administrative Code (WAC) 173-340-350(9)(a).

1.1 Objectives of the RI/FS

The purpose of a RI/FS is to collect, develop and evaluate sufficient information regarding a site to select a cleanup action under WAC 173-340-350 through 173-340-390. The investigation will focus on the following:

- Delineating the complete nature and extent of all hazardous substances at the site.
- Characterizing site COPCs.
- Evaluating site COPCs related to potential impacts to the Duwamish Waterway.

The overall objectives of the RI/FS are to:

- Obtain data of sufficient quality and quantity to describe the physical and chemical properties (including contaminants) of site soil, groundwater, stormwater, riprap sediment, catch basin solids, and Duwamish Waterway sediments
- Use the results of the investigation to develop cleanup action alternatives and select a preferred remedial alternative under WAC 173-340-360 through 173-340-390.

The objectives of this RI/FS work plan and associated documents are to:

- Provide detailed sampling approaches to address data gaps and complete characterization
- Provide an FS approach to evaluate cleanup levels, ARARs, areas and media requiring remedial action, and cleanup alternatives
- Provide a schedule for the RI/FS activities and remedial actions and/or interim actions in accordance with the Agreed Order.

1.2 RI/FS Work Plan Organization

This RI/FS work plan consists of the following sections:

- Section 2 provides a summary of historical site uses, previous investigations, site COPCS, and data gaps.
- Section 3 summarizes the preliminary Conceptual Site Model (CSM).
- Section 4 describes the RI tasks to be completed as part of RI/FS activities.
- Section 5 presents the FS tasks to be completed as part of RI/FS activities.
- Section 6 describes the project schedule and deliverables.
- Section 7 presents the Sampling and Analysis Plan (SAP).
- A list of references is presented after Section 7.
- Appendices A, B, and C provide copies of site maps showing current and historical site uses, a tabulated historical data summary, and a summary of historical sediment sampling in Slip 4 and the Duwamish Waterway.
- Appendix D provides a Quality Assurance Project Plan (QAPP) for the site.

Section 2: Background

This section provides a general summary of current and historical site uses, previous site investigations, suspected contaminant sources areas, and COPCs. Additional information is available in cited references and site maps and historical data tables prepared by SLR (maps included for reference in Appendix A and data tables included for reference in Appendix B), and the historical sediment sampling maps provided in Appendix C.

2.1 Setting

2.1.1 Location

The 8th Avenue Terminals property is located at 7400 8th Avenue South, in the southern part of Seattle, King County, Washington, along the Duwamish Waterway (see Figure 1). The property is located in an industrial part of Seattle and is bound to the north by South Garden Street, to the south by the Duwamish Waterway, to the west by 8th Avenue South, and to the east by Slip 4. Adjacent properties include an auto body repair shop to the west, Markey Machinery Company in the northwest, Emerald Services (a metals recycling facility) to the north, and City of Seattle property (including Slip 4) to the west. A Boeing facility and the Emerald Services facility are located across Slip 4 to the southeast.

The property is divided into two parcels, Parcel D and Parcel F. Parcel F encompasses roughly the northern one-third of the property, and Parcel D the remainder of the 8th Avenue Terminals Property. 8th Avenue Terminals owns the southwestern portion of Slip 4, near the mouth of the Slip. Parcels D and F are shown on site maps prepared by SLR, copies of which are provided in Appendix A.

2.1.2 Surface Features

Most of the upland portion of the 8th Avenue Terminals property is capped with asphalt or concrete; however, a small portion of Parcel F is covered with gravel and some vegetation. The banks along Slip 4 and the Duwamish Waterway consist of a sheet pile seawall or boulder riprap.

Several buildings and other structures are currently present on the 8th Avenue Terminals property, including office trailers and modular office buildings, an equipment shop, a pier along Slip 4, a canopy, and several vacant or unused structures. A summary of existing site structures is presented in Table A-1 below. Two gates to access the 8th Avenue Terminals property are located along 8th Avenue South. Currently, the southern, central, eastern, and northeastern portions of Parcel D are leased to Organic Fuel Processors, who receive and process wood for use in compost and alternative fuel production. The southern and southeastern portions of Parcel D are subleased to KRS Marine for cargo transfer from barges and equipment maintenance. Parcel F and the northern portion of Parcel D are leased to First Student, Inc., a business that stages and parks school buses on the property.

Currently, there are no aboveground storage tanks (ASTs) or known underground storage tanks (USTs) at the property. Previously, ASTs and USTs have been present at the subject property. Three petroleum USTs and two oil ASTs were located at the property. However, there is no documentation of the removal of a 5,000-gallon fuel oil tank in the northwestern part of Parcel F (see SLR Figure 6 in Appendix A). Locations and removals of the other tanks are discussed below in Section 2.2.

Stormwater drainage systems are present both on Parcel D and Parcel F. The Parcel D system (installed in the 1980s) consists of 32 stormwater catch basins connected to six conveyance lines, each with outfalls into Slip 4 and the Duwamish Waterway. The current Parcel F stormwater drainage system was installed in 2012, replacing a previous system that was installed beginning prior to 1946 (SLR 2012). Additionally, three equipment wash water collection sumps are present on Parcel F (one of these sumps, located in the northeastern portion of Parcel F, may have been filled with concrete during recent work on the stormwater drainage system on Parcel F). These drainage systems and collections sumps are shown on SLR Figure 3 in Appendix A, and the drainage systems are maintained under conditions of Industrial Stormwater General Permits.

Table A-1: Summary of Site Structures

Parcel	Structure	Currently Used?	When Constructed	Notes
D	Office trailers	Yes	mid-1980s	Office space near western property boundary.
D	Equipment Maintenance Shop	Yes	2009	Located near southwestern corner of property boundary.
D	Wood chip storage bins	Yes	2009	Located in central area of Parcel D.
D	Pier	Yes	early 1980s	Located near southern end of Parcel D. Two loading ramps present.
F	Modular office buildings	Yes	2009 and 2010	Located near southwestern corner of Parcel F.
F	Large canopy	Yes	Prior to 1969	Located over modular office structures. Associated with former concrete products manufacturing and storage activities.
F	Eastern former shipping container repair shop	No	1980s	Near northeastern corner of property.
F	Western former shipping container repair shop	No	1960s	Along western property line.
F	Former office building	No	1946-1960	North of eastern former container repair shop, near northeastern corner of property.
F	Empty silos (2)	No	1946-1960	Located near northern property line. Used to store aggregate during concrete manufacturing operations. Additional silos were present and demolished by 1981.

2.1.3 Geology

The 8th Avenue Terminals site is located in the Duwamish River valley. The Duwamish River valley is a former marine embayment that was an extension of the Puget Sound embayment as recently as approximately 5,000 years ago (Luzier 1969). The alluvial deposits in the lower Duwamish River valley include “medium- to fine-grained sand and silt that were deposited in a delta complex when the valley was a submerged marine embayment; these sediments generally do not yield appreciable volumes of water to wells” (Woodward et. al. 1995).

The surficial geology beneath the upland portion of the 8th Avenue Terminals property generally consists of 9 to 16 feet of sand or gravel fill with varying amounts of silt. The fill contains concrete, brick, and other debris along the southern edge of the property, between monitoring wells CMW-4 and CMW-7 (SLR 2008). The fill is underlain by a sand unit to a depth of at least 20 feet below ground surface (bgs).

The sheet pile seawall and associated pier were constructed along the eastern and southern perimeter of Parcel D in the early 1980s. Construction apparently included excavating the area where the concrete bulkhead for the pier would be built. After the sheet pile seawall was installed, clean sand and gravel fill were placed along the base of the seawall (on the water side) and covered with riprap that was supported by a toe trench. The excavated area on the inland side of the sheet pile seawall was backfilled; however, the backfill type was not specified on the design drawings. An unnamed Crowley drawing shows that sand and dredge fill was used to backfill two parts of the excavated area on the inland side of the seawall. SLR Figure 4 in Appendix A shows the locations depicted on the Crowley drawing.

2.1.4 Hydrogeology

The Duwamish Waterway is tidally influenced and connected to Puget Sound. Shallow groundwater beneath the 8th Avenue Terminals property is unconfined in the fill soils and underlying sands. Shallow groundwater elevations fluctuate with the tide, and depth to water measurements may range from less than 5 feet to more than 15 feet bgs. Generally, groundwater flow is toward Slip 4 at the Duwamish Waterway. Local groundwater recharge occurs at the unpaved northern portion of Parcel F and off the subject property.

2.2 Site History

2.2.1 Land Ownership, Use, and Prior Operations

Historical land ownership and property uses have been previously researched in environmental assessments conducted by Hart Crowser in 1989 (Hart Crowser 1989a, 1989b). Historical property uses are also summarized by SLR (SLR 2008). Prior to 1904, land was generally undeveloped adjacent to the Duwamish River (Hart Crowser 1989a). The east and west waterways, and Duwamish Waterway, were dredged and established in the property area by 1916. The property was subsequently developed and used for industrial and commercial activities. Table A-2 below summarizes the land use history and property development for the 8th Avenue Terminal site, as presented in prior environmental assessments and investigations prepared by others. SLR Figures 5 and 6 in Appendix A depict historical property operations, including buildings, which have since been demolished, from 1918 to 1949 and 1950 to 1974, respectively.

Table A-2: Summary of Land Use History

Years	Description
1889-1916	Agricultural - open pasture. Residence on Parcel F.
1916	Duwamish Waterway and Slip 4 in current configuration.
1918 - before 1981	Manufacturing of hydraulic equipment and metal pipes on southern Parcel D.
1918-1950	Sawmill operations on central Parcel D.
1922 - 1970s	Excelsior manufacturing on southeastern part of Parcel F and northeastern part of Parcel D. Concrete product storage and manufacturing on northern part of Parcel F.
early 1940s - 1957	Creosote wood treatment facility on western portion of Parcel D.
1946	First portion of Parcel F stormwater drainage system installed.
1950 – mid 1970s	Chain manufacturing facility also present at southern Parcel D.
1950 - 1981	Concrete manufacturing and storage on northern Parcel F expanded to southwestern part of Parcel F and northwestern part of Parcel D.
1950 – 1970s	Aluminum window manufacturing operation in eastern Parcel F.
1981	All structures on Parcel D demolished. Some Parcel F structures demolished.
1981	Oil AST on Parcel D (pipe manufacturing operations) was removed.
early 1980s	Parcel D stormwater drainage system installed. Approximately 20,000 cubic yards of fill placed in upland portion of Parcel D.
1985	Oil AST on Parcel F (excelsior operations) was removed.
1985	Parcel D, and southern part of Parcel F are paved. Seawall and pier on Slip 4 constructed.
1988	8,000-gallon diesel UST and 2,000-gallon gasoline UST on Parcel F removed. Hydrocarbon impacted soil removed and disposed offsite.
mid-1980s – Sept. 2009	Used for cargo storage and distribution.
Oct. 2009 – present	South-central Parcel D used to receive and process clean wood for compost or alternative fuel.
Oct. 2009 – present	Southern and southeastern Parcel D used to transfer cargo from barges and maintain equipment.
Dec. 2009 – present	School bus parking on Parcel F.
Oct. 2010 - present	Wood receiving operations on northeastern part of Parcel D and eastern part of Parcel F.

2.2.2 Previous Investigations and Remedial Actions

Previous investigation and remediation activities performed at the site are summarized below. A preliminary conceptual site model based on these investigations is presented in Section 3 and summarized on Figure 2. Historical analytical data are included in the data tables provided for reference in Appendix B. (Note: The screening levels shown on the data summary tables are for informational purposes only and are not currently accepted by Ecology).

Data flag maps for select soil and groundwater COPCs, based on the historical site data, are presented in Figures 3 through 11, as follows:

Figure 3: Distribution of Total Arsenic in Soil
Figure 4: Distribution of Total Lead in Soil
Figure 5: Distribution of Total Barium in Soil
Figure 6: Distribution of Total cPAHs in Soil
Figure 7: Distribution of Total PCBs in Soil

Figure 8: Distribution of Total TPH in Soil
Figure 9: Distribution of Benzene in Soil
Figure 10: Distribution of Total Arsenic in Groundwater
Figure 11: Distribution of Total cPAHs in Groundwater.

2.2.2.1 Sediments

A number of investigations and dredging actions have occurred at Slip 4 in conjunction with the Lower Duwamish Waterway Superfund Site to address polychlorinated biphenyl (PCB) contaminated surface sediments. Approximately 85,000 cubic yards was dredged from the western portion of Slip 4 in 1981 in conjunction with pier construction activities [PTI Environmental Services (PTI) 1995]. Copies of US Army Corps of Engineers Permit documents for the 1981 dredging are included in Appendix C for reference. In the 1980s, sediment sampling in Slip 4 showed the highest PCB concentrations near the head of the slip, decreasing toward the waterway. In 1996, nearly 11,000 cubic yards of sediment was dredged from the southwestern part of Slip 4, nearest the 8th Avenue Terminal, to maintain navigable access to the pier.

During another sediment investigation in 2004 in Slip 4, PCB concentrations were less than those observed during the 1990s, and again the highest concentrations were near the northern end of the slip where several public stormwater outfalls discharge [Ecology 2006, Science Applications International Corporation (SAIC) 2010]. The contaminant sources were identified in the North Boeing Field/Georgetown Steam Plant RI/FS, and in 2011 and early 2012, sediments were removed and capped in the Slip 4 Early Action Area of the Lower Duwamish Waterway Superfund Site [Integral Consulting Inc. (Integral) 2007]. Historical sediment sampling maps are provided in Appendix C for reference.

2.2.2.2 Site Soils and Groundwater

Several investigations and cleanup actions have been conducted at the site to address USTs from prior site operations and to identify and assess potential source areas.

- Early 1980s – Two oil tanks were removed from the property. One was located between the former aluminum window manufacturing facility and the former excelsior factory and press, the other was located in a vault west of the former pipe manufacturing building.

- 1988-1989 – An 8,000-gallon diesel UST and a 2,000-gallon gasoline UST were removed from Parcel F. Impacted soil was removed and disposed offsite. The diesel UST was located immediately north of the former aluminum window manufacturing plant building. The gasoline UST was located further north, just west of the former office building. (Hart Crowser 1989a, 1989b).

- 1989-1990 – Additional characterization of site soils and groundwater was conducted, particularly around the former diesel UST, former pole dipping operations near the northwestern corner of Parcel D, and throughout the former pipe manufacturing area in the central portion of Parcel D. (Hart Crowser 1989a, 1989b; Landau 1990).

- 1994 – Characterization of soils in the former concrete products manufacturing and storage area on Parcel F, and near a former oil AST removed near the former aluminum window manufacturing plant.

- 2008 – Additional characterization and investigation of groundwater conditions at the 8th Avenue Terminals Property adjacent to Slip 4. Seven groundwater monitoring wells were installed near the eastern and southern perimeter.

- 2009-2011 – Soil borings were advanced near the western and eastern former container repair shops, the former aluminum window manufacturing plants, and the canopy area on Parcel F.

- A former fuel oil UST was reportedly located near the northwestern corner of Parcel F, and is identified on SLR Figure 14 in Appendix A. Documents are not available regarding tank closure or any associated remedial activities.

Historical data tables summarizing results from prior investigations are included in Appendix B. Data flag maps for select analytes are provided on Figures 3 through 11.

2.3 Potential Source Areas and Contaminants of Potential Concern

Figures 3 through 9 illustrate the distributions of arsenic, lead, barium, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), PCBs, petroleum hydrocarbons, and benzene in soil throughout the 8th Avenue Terminals site. These figures depict prior sampling locations and analytical results from past investigations where contaminants of interest were detected, and show preliminary screening levels and possible cleanup levels for these COPCs. Figures 10 and 11 depict known concentrations of arsenic and polycyclic aromatic hydrocarbons (PAHs) in groundwater in a similar fashion. Final site-specific cleanup levels will be established as part of the RI/FS process.

Table A-3 below summarizes these potential source areas and their COPCs, based on past sampling results as wells as historical site operations. The potential source areas are illustrated on SLR Figure 14 in Appendix A.

Table A-3: Summary of Potential Source Areas

Potential Source Area	Rationale	Contaminants of Potential Concern
Former Concrete Production Area	Past industrial activities, chemical use, and hydrocarbon releases may have impacted soils and shallow groundwater.	PAHs, BEHP, DRO, HO, benzene, xylenes, PCBs, As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, and Zn
Former Gasoline UST in Concrete Production Area	UST was removed in 1988. Releases may have occurred and residual impacts may be present in soil and shallow groundwater.	Benzene, xylenes, and PAHs
Former Aluminum Manufacturing Operation	Operations resulted in releases of hydrocarbons, metals and VOCs to soil.	PAHs, benzene, HO, Ba, Cd, Pb, Hg, and Se
Former Diesel UST at Aluminum Manufacturing Building	UST was removed; however, releases have occurred to soil.	PAHs, Benzene, Ba, Cd, Pb, Hg, and Se
Former Fuel Oil UST (Parcel F)	Unknown whether tank has been removed or contamination is present.	DRO and HO
Former Sawmill, Excelsior Factory, and Press Area	Use of lubricating oils, operation of chimney, boiler house and refuse burner may have resulted in impacts to soil.	PAHs, PCBs, As, Ba, Cd, Cu, Hg, Pb, Zn, HO, DRO, dioxins, and furans

Potential Source Area	Rationale	Contaminants of Potential Concern
Former Wood Treating Operations Area	Wood products were treated with creosote and other chemicals which could have been released to soils or shallow groundwater.	PAHs, BEHP, 2-methylphenol, 2,4-dimethylphenol, phenol, pentachlorophenol, ethylbenzene, xylenes, PCBs, As, Cd, Cr, Cu, Pb and Zn, GRO, DRO, HO, dioxins, and furans
Former Pipe and Chain Manufacturing Area	Storage and use of hydrocarbon products and solvents may have been released. Metal shavings and other wastes generated from manufacturing process may have impacted soils or shallow groundwater.	PAHs, phenol, 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, pentachlorophenol, di-n-butyl phthalate, acetone, chlorobenzene, ethylbenzene, xylenes, GRO, DRO, HO, PCBs, As, Ba, Vd, Cr, Cu, Pb, Hg, Ni & Zn, dioxins, and furans
Dredge Fill Areas	Portions of the site have been re-graded with imported fill materials which may be potentially contaminated.	PAHs, PCBs, phenol, 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, pentachlorophenol, BEHP, butyl benzyl phthalate, di-n-butyl phthalate, acetone, chlorobenzene, ethylbenzene, xylenes, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Zn, GRO, DRO, and HO
Stormwater Catch Basins and Drainage System (Parcels D and F)	Catch basins and drainage conveyances contain and re-distribute accumulated solids originating from other potential source areas.	PAHs, As, Cr, Pb, Zn, xylenes, BEHP, butyl benzyl phthalate, and dimethylphthalate

Notes:

Ag = silver
As = arsenic
AST = aboveground storage tank
Ba = barium
BEHP = bis-2-ethylhexylphthalate
Cd = cadmium
COPCs = contaminants of potential concern
Cr = chromium
Cu = copper
DRO = diesel-range organic hydrocarbon
GRO = gasoline-range organic hydrocarbon
Hg = mercury
HO = heavy oil range hydrocarbon
Ni = nickel
PAH = polycyclic aromatic hydrocarbon
Pb = lead
PCB = polychlorinated biphenyls
PCE = perchloroethene
Sb = antimony
Se = selenium
UST = underground storage tank
VOC = volatile organic compound
Zn = zinc

COPCs have been identified as 1) chemicals reported at concentrations exceeding Model Toxics Control Act (MTCA) cleanup or other screening criteria during prior investigations or remediation activities, and 2) chemicals which may be associated with prior site operations. The currently identified COPCs include:

- Silver (Ag)
- Arsenic (As)
- Acetone
- Barium (Ba)
- bis-2-ethylhexylphthalate (BEHP)
- Benzene
- Butyl benzyl phthalate
- Di-n-butyl benzyl phthalate
- Dimethylphthalate
- Cadmium (Cd)
- Chromium (Cr)
- Chlorobenzene
- Copper (Cu)
- Diesel-range organic hydrocarbons (DRO)
- Dioxins and Furans
- Ethylbenzene
- Gasoline-range organic hydrocarbons (GRO)
- Mercury (Hg)
- Heavy oil range hydrocarbons (HO)
- 2-methylphenol
- 2,4-dimethylphenol,
- Nickel (Ni)
- Pentachlorophenol
- Phenol
- PAHs
- Lead (Pb)
- PCBs
- Perchloroethene (PCE)
- Antimony (Sb)
- Selenium (Se)
- Xylenes
- Zinc (Zn)

2.4 Data Gaps

Historical data and prior investigation findings indicate the nature and extent of impacts to soil and groundwater is not fully characterized. Data gaps exist where the lateral and/or vertical extent of contamination has not been delineated, in areas where samples have not been collected or analyzed in nearly 20 years, and in areas that have not been previously investigated or fully understood. Table 1 summarizes the Crowley site data gaps by potential source areas, and identifies COPCs in groundwater and soil at potential source areas. Data gaps are discussed in greater detail in Section 4.

Section 3: Preliminary Conceptual Site Model

This section of the RI/FS work plan synthesizes the data collected during the previous investigations into a preliminary conceptual site model of preliminary COPC occurrence, movement, and potential exposures.

The following environmental media have, or may have, become contaminated and could be acting as sources of exposure for humans, terrestrial biota, or aquatic biota:

- Surface soil
- Subsurface soil
- Ambient air
- Groundwater
- Surface water
- Stormwater
- Sediment.

Potential exposure pathways associated with these media are discussed below. The potential contaminant sources areas and COPCs are discussed in Section 2. Figure 2 presents a graphical representation of the fate and transport of COPCs and potential receptors for the site.

3.1 Fate and Transport of Contaminants

This section provides a narrative of potential transport mechanisms for COPCs at the site. Additional evaluation of the site transport and exposure model is part of the RI scope of work (SOW) (discussed in Section 4).

After any releases at the upland area of the property, the contaminants would initially have been located in surface soils (surface spills or impacted ash accumulation), subsurface soils (e.g., UST releases, placement of impacted dredge fill, burial of impacted ash or partially burned debris), or shallow groundwater (subsurface releases within the upper saturated zone).

As rain falls on the ground surface and infiltrates the subsurface, contaminants in surface soils and subsurface soils can dissolve in the rainwater and percolate through the subsurface soils (leaching). Some of the contaminant mass remains in the subsurface soils and some of the contaminant mass reaches shallow groundwater. After the early 1980s, pavement over portions of the site has minimized rainwater infiltration across those paved portions of the property, reducing the leaching of contaminants from soil to groundwater. The northern portion of Parcel F is not paved, and infiltration is likely to be greater in that portion of the property. Groundwater levels are tidally influenced, and contaminants may move between subsurface soils and groundwater as the water levels rise and fall.

Stormwater sheet flow from Parcels D and F into Slip 4 is limited to the sloped concrete surfaces beneath each loading ramp at Parcel D. It is uncertain whether or not contaminants in surface soil are transported directly to surface water through sheet flow. Stormwater across Parcel D and Parcel F is directed into catch basins which discharge to Slip 4 and the Duwamish Waterway (refer to SLR Figure 3 in Appendix A).

Based on stormwater conveyance at the property, contaminants on paved surfaces (such as from surface spills) or on unpaved surfaces (such as contaminants in surface soil) may be transported by stormwater to surface water and to sediment in Slip 4 and the Duwamish Waterway. If there are leaks in catch basins or drain lines, contaminants in the drainage system may also be released to subsurface soil and groundwater, or contaminants in groundwater may enter the stormwater drainage system and be discharged to Slip 4 and the Duwamish Waterway.

The COPCs below the groundwater table exist primarily in two phases: a dissolved phase and sorbed to the soil particles in the water-bearing zone. Groundwater beneath the property is hydraulically connected to the Duwamish Waterway (including Slip 4). A sheet pile seawall appears to act as a partial barrier to direct flow between shallow groundwater and surface water in Slip 4, but direct and re-directed flow occurs through the riprap adjacent to the ends of the seawall. Flow of shallow groundwater through the sheet pile seawall through joints or gaps may also occur, but requires additional evaluation.

Any subsurface soils contained within the riprap located along the southwestern bank of the upland property area may be exposed in some areas, and could be eroded during major rainfall events or by contact with surface water during certain tidal events. Contaminants could be transported to surface water and sediment in the Duwamish Waterway through bank soil erosion. In addition, the sheet pile seawall was not present prior to the 1980s and bank areas may have eroded to sediments in the Duwamish Waterway.

Therefore, depending on their location beneath the property, contaminants in groundwater could discharge to surface water and sediments in the Duwamish Waterway and Slip 4. Under such conditions, migration to sediment could theoretically occur either directly through groundwater flow to sediment, or indirectly through sediment-surface water interactions following groundwater discharge to surface water, or through groundwater infiltration into the stormwater conveyance system. Additional data are needed to evaluate the migration of COPCs to surface water and sediment from groundwater.

Aquatic plants can take up contaminants from the sediments and surface water through their roots and leaves. Aquatic biota can also accumulate chemicals in surface water and sediment through ingestion, dermal contact, and respiration. Terrestrial plants and other biota can take up contaminants from surface and subsurface soil. Aquatic and terrestrial biota can therefore, potentially act as additional contaminated media.

Terrestrial and aquatic biota that may have accumulated contaminants could also act as exposure media for humans and wildlife. Based on a terrestrial ecological evaluation (TEE) conducted by SLR for the 8th Avenue Terminals site (SLR 2011), the site may qualify for an exclusion from further evaluation; however, the potential exclusion is dependent upon there being less than 0.25 acre of contiguous undeveloped land on or within 500 feet of any area of the site. The size of a recently constructed habitat area which adjoins the site to the northeast must be verified by the potentially liable parties (PLPs) before any exclusion to the TEE will be considered by Ecology. Unless the TEE exclusion is accepted by Ecology, terrestrial biota are considered to represent a relevant exposure medium for humans and/or wildlife.

Volatile contaminants in surface and subsurface soil may be present in the vapor phase. After volatilization, these contaminants can be transported to the surface to outdoor air and to indoor air. However, the resulting outdoor air concentrations are expected to be minimal due to instantaneous dispersion and mixing that occurs at the soil-air interface. Vapors may enter indoor air if volatile contaminants are present in the subsurface beneath or near a building. At the 8th Avenue Terminals property, the identified volatile preliminary COPCs for soil (GRO, benzene, total xylenes, acetone, and chlorobenzene) were only present at a few localized areas but additional data for volatile contaminants will be collected and evaluated during the RI and the vapor pathway will be fully evaluated as part of the FS.

Non-volatile COPCs present in surface soil may be transported to ambient air in the form of suspended particulates (i.e., dust). However, due to the limited use of the unpaved portion of the property (parking of bus drivers' cars at north-central part of Parcel F and limited industrial use at the eastern end of Parcel F) and the typically wet climate of the property area, dust generation is expected to be minimal.

3.2 Potential Receptors

3.2.1 Human Receptors

Most of Parcel F and the northwestern and north-central parts of Parcel D are used to stage and park school buses, and for First Student's administrative offices. School bus drivers are present on this portion of the property for a few hours a day, before and after driving their bus routes, and are primarily in the offices when on the property.

The central portion of Parcel D is used to receive, grind, and store "clean" wood that can be used to make compost or produce alternative fuel. The southeastern portion of Parcel F and the eastern portion of Parcel D are also used to infrequently receive wood. The southern and southeastern portions of Parcel D are used to load/unload cargo from barges. Some site workers may spend a portion of their time in the office trailers and the equipment maintenance shop. Property visitors, such as truck drivers, may also be present occasionally for short periods of time.

Currently, trespassers are unlikely to enter the property due to the presence of a fence and locking gates that prevent access along the northern and western sides, and the presence of Slip 4 and the Duwamish Waterway along the eastern and southern sides. Fishermen in boats are occasionally present in Slip 4.

Since the property is zoned as industrial and is located in an industrial-zoned area, future property uses can be expected to be industrial in nature. Construction workers and site visitors may also be present on the property in the future. Fishermen accessing Slip 4 from the water will likely continue to be present in the future.

3.2.2 Ecological Receptors

With the exception of the northern part of Parcel F, the majority of the property is capped with asphalt or concrete. The unpaved portion of Parcel F is covered with gravel or limited vegetation (e.g., trees, shrubs). The bus operations and the industrial activities at the subject property, and the industrial operations at surrounding properties, present a constant human disturbance. At present, the subject property offers limited, disturbed terrestrial habitat. Wildlife present at the property likely includes common, non-endangered species such as perching birds and small mammals such as rodents. Ongoing disturbance by human activity makes nesting and breeding at the property unlikely. Terrestrial ecological receptors are included in the preliminary conceptual site model, but may be excluded in the future following verification of the size of the habitat area (refer to Section 3.1), with Ecology approval.

The eastern and southeastern parts of the property are located adjacent to Slip 4, and the southern part of the property is adjacent to the Lower Duwamish Waterway. The Lower Duwamish Waterway is tidally influenced, with water levels in Slip 4 varying more than 13 feet in response to Puget Sound tides. In 2011, Boeing conducted a salinity study of Slip 4, and the salinity measurements during three sampling events indicated that the water in Slip 4 is brackish (AMEC Geomatrix 2011). Potential ecological receptors include aquatic species, which are present in the Lower Duwamish Waterway including benthic communities, shellfish, and resident and migratory fish (Striplin Environmental Associates 2004).

3.3 Potential Exposures

3.3.1 Currently Known Exposures to Human Receptors

The human receptors currently present at the property include industrial workers that are assumed to be on the property 5 days a week for standard 8-hour workdays, and school bus drivers that are assumed to be on the property 5 days a week for a few hours per day. Property visitors are also on the property for short periods of time and on an irregular basis. Fishermen in boats are occasionally present in Slip 4.

The property is mostly covered with asphalt or concrete, and the portion that is not paved is used for parking of the school bus drivers’ cars or for limited industrial activities (the eastern end of Parcel F). Therefore, human receptors currently present on the property may be exposed to soils through dermal contact or incidental ingestion. Exposure through inhalation of windblown dust is also potentially relevant for this property since vehicle activity on the unpaved portion of the property may disturb exposed soils and create dust. Direct soil contact and inhalation of particulates, therefore, represent potentially complete exposure pathways for current human receptors at the property, although exposures are not expected to be significant.

Volatile COPCs were identified in the soil at the property. Accumulation of VOCs for indoor air is not expected to be significant as there are no enclosed slab-on-grade buildings at the property, but is possible if VOCs are identified at high enough concentrations in proximity to site structures. Outdoor air concentrations are expected to be minimal due to instantaneous dispersion and mixing that occurs at the soil-air interface. Indoor and outdoor vapor inhalation, therefore, may be incomplete exposure pathways for all receptors, but will be fully evaluated during the RI/FS.

Contaminants in groundwater and in stormwater can migrate to surface water and sediment in the adjacent Slip 4 and Duwamish Waterway. Contaminants may then be taken up by aquatic and sediment-dwelling receptors such as fish and shellfish, which may be consumed by people fishing or harvesting shellfish in the area. Fishermen in boats have been observed in Slip 4 and the Duwamish Waterway, and fish consumption is, therefore, currently considered to be a potentially complete exposure pathway for offsite receptors. Dermal contact with sediments by net fishermen in Slip 4 and the Lower Duwamish Waterway is also a potentially complete exposure pathway.

Due to the industrial nature of the area and the industrial use of the waterway, swimming is not expected to occur in the vicinity of the property. However, dermal contact with surface water or incidental ingestion by net fishermen in Slip 4 and the Duwamish Waterway is considered a potentially complete pathway for offsite receptors.

Groundwater beneath the property is tidally influenced and is brackish in nature (salinity measurements of 5.9 to 11.4 parts per thousand on 15 July 2008; SLR 2008), making it unsuitable for human consumption. No drinking water wells are present on the property, and drinking water is supplied by the City of Seattle. Based on existing data, only incidental consumption of groundwater is a potentially complete pathway for human receptors at the property. During the RI, additional data may be collected to further evaluate groundwater potability (refer to Section 4.2.4).

3.3.2 Potential Future Exposures to Human Receptors

There are no current plans for future development or building construction at the property. The property is in an industrial-zoned area, and this is not expected to change in the foreseeable future. Future activities at the property are expected to remain industrial in nature. Potential future receptors include industrial site workers, school bus drivers, and property visitors. Construction workers could also be present if development or maintenance work becomes necessary in the future. Fishermen accessing Slip 4 from the water will likely continue to be intermittently present in the future.

Future construction workers could be exposed to contaminants in surface and subsurface soil, and in groundwater and surface water through dermal contact or incidental ingestion during excavation activities. In the case of significant redevelopment and/or removal of pavement, inhalation of windblown dust may also occur. These exposure pathways are, therefore, considered potentially complete for the future construction worker receptor.

As subsurface soils could become exposed if construction activities occur on the property in the future, direct subsurface soil contact pathways (including ingestion and dermal contact) and inhalation of windblown particulates in ambient air generated from subsurface soil are also potentially complete for future site workers, school bus driver, property visitor, and adjacent property occupant receptors. Future exposure pathways for the offsite fisherman receptor are the same as the current exposure pathways, except for dermal contact with sediments, which should be remediated after the Lower Duwamish Waterway sediment cleanup is completed.

3.3.3 Currently Known Exposures to Ecological Receptors

There is currently limited habitat to encourage visits by terrestrial wildlife on the property. A TEE conducted by SLR (SLR 2011) concluded that the site qualified for an exemption, excluding terrestrial wildlife as possible receptors, based on the size (<1/4 acre) of contiguous land located within 500 feet of the site. However, the size of a recently constructed habitat area which adjoins the site to the northeast has not been verified. Because the constructed habitat area may be greater than 1/4 acre, terrestrial ecological receptors and pathways are considered potentially complete and are included in the preliminary conceptual site model. Aquatic receptors in Slip 4 and the Duwamish Waterway could be exposed to contaminants through ingestion of and direct contact with surface water and sediment, through respiration, and through ingestion of plants and prey that may have accumulated contaminants from the environment. These exposure pathways are, therefore, considered potentially complete for aquatic receptors.

3.3.4 Potential Future Exposures to Ecological Receptors

Future exposure pathways for aquatic ecological receptors are the same as the current exposure pathways. Current and future potential human health and ecological receptors, and exposure pathways are illustrated on Figure 2.

Section 4: RI Tasks

This section of the RI/FS work plan provides a discussion of the proposed RI SOW and the rationale for those activities.

The RI work will include the assessment of suspected contaminant migration pathways for their potential to impact sediments in the Duwamish Waterway (including Slip 4). These pathways include:

- Direct discharges
- Soil erosion
- Stormwater discharges
- Sheet flow
- Groundwater discharges and seeps
- Barge operations or any other activities at the 8th Avenue Terminals property
- Spills, dumping, leaks, housekeeping, and management practices.

In addition, the RI work will address the exiting data needs for the site (Section 4.1) with an emphasis of collection of sufficient data to fully characterize site conditions to facilitate evaluation of possible cleanup options for the FS (Section 5).

Procedures for sampling and analysis and quality assurance/quality control (QA/QC) are described in a SAP (Section 7) and QAPP (see Appendix D). A Health and Safety Plan (HASP) that pertains to the RI activities will be prepared by the contractor prior to performing any work onsite.

4.1 Additional Data Needs

Several additional investigation data needs (i.e., data gaps) have been identified based on the results of the previous investigation and remediation activities and the conceptual site model. The additional data needs for the upland portion of the 8th Avenue Terminals property, for the potential contaminant source areas, and for the river sediments on the property are listed in Table 1.

As indicated above, Table 1 provides a summary of the additional data needs identified for the site based on historical site uses, current site uses, and previous analytical data collected at the site. The data gaps listed in Table 1 are primarily related to the following general data concerns for the site (refer to Table 1 for specific details):

- A complete evaluation of the nature and extent of contaminated site media and potential exposure pathways is needed. This shall include site soils (both shallow and deeper soil), a complete groundwater characterization, stormwater characterization, riverbank characterization, and sediment characterization adjacent to the site.

- There are areas of the site where sampling has not been performed. These include areas located between the suspected historical source areas discussed in Section 2, and areas where historical structures were identified but not fully evaluated. Although historical structures and operations may not have been specifically identified in some of these areas, the extensive filling historically performed across the site indicates the potential for site media containing COPCs to have been spread throughout the site. Impacts associated with each of the source areas discussed in Section 2 may be present beyond the boundaries of these source areas as depicted on site maps (see SLR Figure 14 in Appendix A).

- Areas around and beneath some historical site structures and work/storage areas have not been fully investigated. This includes locations with limited previous data and locations where no previous sampling has been performed even though activities related to potential COPCs appear to have been performed.

- Previous analytical data for surface and subsurface soil does not provide adequate characterization of the lateral and/or vertical extent of COPCs at multiple locations throughout the site. Additional data are needed to evaluate the extent of COPCs and to facilitate evaluation of site cleanup options.

- Previous analytical data for groundwater does not provide adequate characterization of the lateral and/or vertical extent of COPCs at multiple locations throughout the site. Additional data are needed to evaluate the extent of COPCs and to facilitate evaluation of site cleanup options. This includes evaluation of groundwater conditions at greater depth (existing data included only shallow groundwater). An expanded network of shallow and deeper monitoring wells will also allow for better evaluation of hydrogeologic conditions at the site.

- Previous site investigations have included only shallow (primarily less than 20 feet bgs) soil borings and wells. Additional data for deeper soil and groundwater is needed at some locations to evaluate the vertical extent of COPC impacts and to provide additional information regarding subsurface conditions at the site, including site stratigraphy and hydrogeology.

- Additional data are needed to evaluate the potential for current and historical COPC impacts along Slip 4 and the Duwamish Waterway. A primary potential exposure pathway for the site includes surface water and sediment adjacent to the upland portions of the site. Additional data are needed to evaluate potential COPC impacts to Slip 4 and the Duwamish Waterway, including sampling of stormwater discharges, stormwater solids (i.e. catch basin sediments), surface sediments adjacent to the sheet piling seawall, and sediments within Slip 4 and the Duwamish Waterway.

4.2 Remedial Investigation Scope of Work

As previously discussed, the primary focus of the RI is to fill the data gaps associated with the site, including areas which lack historical data, and to evaluate possible exposure pathways related to discharges to Slip 4 and the Duwamish Waterway. The RI SOW was developed to address each of the data needs previously described.

This section provides a summary of each of the work tasks included in the RI. Additional details regarding implementation of RI tasks (field sampling methodologies, sample depths, chemical analyses, etc.) are presented in the SAP (Section 7).

4.2.1 Pre-Fieldwork Activities

Prior to conducting any fieldwork, the PLP will complete the following activities.

- Obtain a permit from the City of Seattle to install groundwater monitoring wells on their property to the west of the 8th Avenue Terminals property.

- Request a public utility locate and arrange for a private utility locator to identify and mark the locations of underground utilities within 50 feet of the planned drilling location.

4.2.2 Soil Borings

The locations of planned soil borings, including soil-only borings and borings for monitoring well installations (refer to Section 4.2.3), are shown on Figure 12. The soil boring locations are based on the data gaps discussed in Section 4.1. The objective for each soil boring is listed in Table 2. Table 2 also provides a summary of the depths to be sampled and analyses to be performed, which are discussed in greater detail in the SAP (Section 7). Soil borings may be added based on the results of other RI tasks (refer to Sections 4.2.9 and 4.2.10).

If any of the planned boring locations need to be moved by more than 25 feet for any reason (underground utilities, site features, access restrictions, etc.), the revised location will be submitted to Ecology for review and approval prior to installation of borings.

4.2.3 Monitoring Well Installation and Development

A total of 15 new groundwater monitoring wells will be installed at the locations indicated on Figure 12. Prior to well installation, soil borings will be advanced at each location as described above in Section 4.2.2. Eleven of the wells will be shallow-zone wells screened across the water table between approximately 5 and 20 feet bgs (similar to existing shallow-zone site wells), and four will be installed at greater depth and screened from approximately 40 to 50 feet bgs.

The shallow and deeper wells shall be installed using techniques appropriate for the site conditions. This may include direct push methods and hollow-stem auger drilling techniques. Conductor casings shall be used if there is a potential for cross contamination of COPCs to deeper saturated zones. Approximate well construction details are included in the SAP (Section 7). Following installation, the wells will be developed as described in the SAP (Section 7). Sampling of the new wells will be performed at least 1 week after development.

In addition to the new wells, six of the existing groundwater monitoring wells (DMW2, DMW3, DMW6, HC-4, HC-19, and HC-20) that were installed in 1989 or 1990 will be inspected by a licensed well driller. These wells (see Figure 13) will be redeveloped and repaired, if necessary, prior to sampling. If the wells cannot be repaired or are otherwise unsuitable (e.g., poor development performance), the wells will be abandoned in accordance with the requirements of WAC 173-160. The PLPs will notify Ecology of any wells that require abandonment, and provide recommendations regarding replacement of any abandoned wells for Ecology's review.

Installation of replacement wells at the same location(s) as abandoned wells may be performed after review and approval from Ecology.

The locations of wells shown as abandoned or destroyed on SLR Figure 14 in Appendix A (HC-1, -2; MW-1, -2, -3; FMW-1, -2, -3) will be verified by the PLPs and the wells will be inspected by a licensed well driller. If the condition of any of these wells cannot be verified, they will be abandoned in accordance with the requirements of WAC 173-160.

4.2.4 Conduct Groundwater Monitoring

After installing the monitoring wells, four quarterly groundwater monitoring events will be conducted at approximately 3-month intervals plus one supplemental monitoring event to be performed under high-high tidal conditions. The four quarterly monitoring events will be conducted during low tide conditions in the Lower Duwamish Waterway to minimize any surface water effects on the groundwater samples. The one supplemental monitoring event will be conducted during high-high tide conditions in the waterway to evaluate the surface water effects on the groundwater conditions, and will be conducted between the first two quarterly monitoring events.

The first quarterly groundwater monitoring event will occur at least 7 days after development of the newly installed wells and the wells that were installed in 1989 and 1990. After the first event, the supplemental monitoring event will be conducted before the second quarterly event during a high-high tidal event in the waterway. Wells included in the quarterly and supplemental monitoring events are listed in Table 2 and shown on Figure 13 (all wells will be sampled for each monitoring event). Groundwater samples collected during each monitoring event will be submitted for laboratory analysis for the analyses indicated in Table 2.

Based on the results of the first and second quarterly monitoring events (e.g., non-detection of COPCs), the number of wells and/or analytes included in the third and fourth quarterly monitoring events may be reduced. The PLPs will submit a request for any reduction in wells and or analytes to Ecology at least 30 days prior to the third quarterly monitoring event.

In addition to the groundwater monitoring activities described above, groundwater elevation monitoring will be performed during high and low tidal conditions. Two elevation monitoring events will be performed during the RI for all site monitoring wells, as described in the SAP (Section 7).

4.2.5 Catch Basin Sampling, Inspection, and Cleaning

Solids samples will be collected from two of the catch basins within each of the six stormwater conveyance lines on Parcel D that outfall to the Duwamish Waterway and to Slip 4 during two sampling events. The first sampling event will be conducted prior to cleaning of the catch basins (described below), and the second will be conducted at least 6 months after catch basin cleaning.

For the second sampling event, two catch basins located on Parcel F will also be sampled (Parcel F catch basins are not included in the first sampling event because they were recently installed). Catch basin sampling for Parcel F will include one catch basin from the northern portion of Parcel F, and one from the southern portion. The PLPs will submit a list of the specific Parcel F catch basins to be sampled to Ecology at least 30 days prior to sampling.

Catch basins to be sampled for each event are summarized in Table 4. The locations of the catch basins and the underground stormwater conveyance lines are shown on SLR Figure 3 in Appendix A. Catch basin solids samples will be submitted for laboratory analysis for the analyses indicated in Table 4.

After the first round of catch basin solids sampling, each catch basin located on Parcel D will be cleaned and inspected for the potential presence of holes or cracks, which could be a contaminant migration pathway between the stormwater drainage system and the subsurface soil and groundwater. During the inspection, the lid and filter insert will be removed, and the condition of each catch basin will be evaluated. The catch basins will not be cleaned until after at least one stormwater sampling event (Section 4.2.6) has been performed. Catch basins on Parcel F will not be cleaned because they were recently installed.

The three equipment wash water sumps located on Parcel F will also be cleaned and inspected, including documentation of any pipes connected to the sump structures (sump locations are shown on Figure 3 in Appendix A). As previously discussed in Section 2.1.2, the sump located nearest the northeastern corner of the site may have been filled with concrete. The condition of this sump will be verified by the PLPs.

In addition to inspection of the catch basins, a video inspection of the stormwater conveyance lines on Parcel D will be performed to identify the potential presence of cracks. Copies of the video recordings will be submitted to Ecology. If any cracks are discovered, 8th Avenue Terminals will notify Ecology and will prepare and submit a work plan that discusses the removal and replacement of that section of the conveyance pipe and the associated soil sampling activities. To further evaluate if groundwater is entering the stormwater drainage system on Parcel D, each of the six outfalls will be observed when it is not raining and the water level in the waterway is just below the outfalls (during a falling tide). If water is observed discharging from an outfall under these conditions, the water is likely groundwater.

Catch basins will also be inspected for the presence of groundwater. To determine where the drainage system is below the groundwater table during high tide conditions, a licensed surveyor will survey the elevation of the base of each catch basin and the invert elevation of each drain pipe (at the catch basins) and each outfall. Water levels measured in all of the groundwater monitoring wells during high tide conditions (refer to Section 4.2.4) will be compared with the elevations of the stormwater drainage system components to assess the potential for conveyance of groundwater. Based on the results of the above investigations, the PLP shall summarize the results of the investigations in a report and provide a proposal for sealing any pipes or catch basins that may be below season/temporal high groundwater elevations. The intent of the proposal shall be to seal any pipes that convey groundwater to the Duwamish Waterway.

Note: Ecology must be notified prior to any changes to the current stormwater conveyance system.

4.2.6 Sample Stormwater

To assess the potential impacts to the Duwamish Waterway from stormwater discharge, stormwater samples will be collected from the six site stormwater conveyance lines during at least five precipitation events with at least 0.1 inch of rainfall over a 24-hour period. The locations of the conveyance lines are shown on SLR Figure 3 in Appendix A. Stormwater sampling methods are described in the SAP (Section 7). Stormwater sampling activities will be coordinated with the site tenants and will not interfere with (or replace) the sampling required under their National Pollutant Discharge Elimination System (NPDES) permit(s).

During stormwater sampling, stormwater sheet flow directions at the property will be observed and documented to further evaluate the potential for sheet flow discharges to the Duwamish Waterway (including Slip 4). If any point discharges are identified, Ecology will be notified by the PLPs and the runoff will be sampled during subsequent stormwater sampling events.

4.2.7 Sheet Pile Seawall Seeps and Riprap Bank Sediment

The sheet pile seawall that borders Parcel D and Parcel F, and boulder riprap that borders Parcel D, will be inspected to identify any groundwater seeps and any exposed sediment. Bank areas outside the sheet pile seawall (i.e., the entire property margin along Slip 4 and the Duwamish Waterway) will also be inspected for seeps. A boat will be used to access the seawall, riprap, and bank areas during low tide conditions. Prior to conducting the work, depths to groundwater in the shallow monitoring wells located adjacent to the seawall will be measured to determine the groundwater elevations behind the wall.

If any seeps are encountered, samples of each seep will be collected using the methods described in the SAP (Section 7). Seep samples, if any are collected will be submitted for laboratory analysis for the analyses indicated in Table 3.

At locations where exposed sediment is observed in the riprap bordering Parcel D, a sample will be collected as described in the SAP (Section 7). At a minimum, collection of sediment in riprap will be attempted at each end of the existing pier and in proximity to stormwater outfalls (Outfalls #2 through #5) (minimum of six sampling locations; refer to Figure 13). In addition, collection of sediment in riprap areas will be attempted in proximity to any seeps that are identified in the riprap areas.

Sediment samples from riprap areas, if any are collected, will be submitted for laboratory analysis for the analyses indicated in Table 4.

4.2.8 Duwamish Waterway Sediment Sampling

Surface sediment and sediment core samples will be collected from Slip 4 and the Duwamish Waterway at the approximate locations shown on Figure 13. These samples will be collected to evaluate sediment conditions in proximity to the site. Sediment sampling methodologies are described in the SAP (Section 7). Approximate sediment sampling depths and analytical tests to be performed are summarized in Table 4.

4.2.9 Conduct Geophysical Survey

To determine if the former fuel oil UST is still present in the northwestern part of Parcel F, a geophysical survey of the former tank location will be conducted. An electromagnetic (EM) survey will be conducted at the former tank location along four east-west transects and four north-south transects that are 60 feet long and 5 feet apart from each other. If the EM survey indicates an anomaly such as a tank, a ground-penetrating radar (GPR) survey that is focused at the anomaly area will be conducted to try to identify and map the location of the object.

In addition, a geophysical survey will be conducted to identify the locations of buried pipes, catch basins, and sumps associated with historical stormwater facilities at the site, including any pipes connected to the wash water sumps discussed in Section 4.2.5. The PLPs will identify the approximate locations of previous stormwater structures and submit a work plan for geophysical survey activities to verify these locations to Ecology.

After completing the survey, a report of the findings will be prepared and submitted to Ecology. The report will be submitted to Ecology prior to performing any invasive work in the area to physically inspect or remove the UST or previous stormwater system structures, including sumps. In addition, if the survey data indicate that the tank is likely present, 8th Avenue Terminals will prepare and submit a work plan to Ecology that discusses the removal of the tank and the associated soil sampling activities, including any proposed changes to the sampling locations included in this RI/FS work plan.

If the results of geophysical survey indicate a need for additional sampling locations (in addition to any required for the UST area), 8th Avenue Terminals will submit the proposed changes to Ecology for approval prior to performing the work.

4.2.10 Observe Property Tenant Operations and Interview Personnel

A site visit to the 8th Avenue Terminals property will be conducted to observe the tenants' (Organic Fuel Processors, First Student, and KRS Marine) operations and to interview their personnel. The objectives of the work will be: 1) to evaluate the potential for direct discharges into the Duwamish Waterway (including Slip 4), 2) to evaluate the barge operations and other activities at the property regarding the potential to impact the waterway, 3) to find out if any spills, dumping, or leaks have occurred, 4) to evaluate housekeeping and hazardous substance management practices, and 5) to find out if the tenants are complying with Industrial Stormwater General Permit requirements.

The site visit and inspection will be performed prior to any sampling activities associated with this RI/FS work plan.

The results of the site visit and inspection will be provided to Ecology within 1 week of the site visit. If there are any identified concerns with the tenant operations, 8th Avenue Terminals will prepare a letter to the tenant, with Ecology's approval, that describes the problem and demands that a solution be implemented in a timely manner.

If the results of the site visit and inspection indicate a need for additional sampling locations, 8th Avenue Terminals will submit the proposed changes to Ecology for approval prior to performing the work.

4.2.11 Waste Disposal

The soil generated by the drilling activities, the solids generated by the cleaning of the Parcel D catch basins, and the wastewater generated by the cleaning of the drilling and sampling equipment and the development and purging of the wells will be temporarily stored at the 8th Avenue Terminals property in properly labeled 55-gallon drums. After obtaining the sample analytical results, the soil, solids, and water will be transported offsite for disposal at licensed facilities.

4.2.12 Surveying

A licensed surveyor will survey the horizontal positions and vertical elevations of the soil borings and groundwater monitoring wells from the RI, and the site stormwater drainage system catch basins. The surveyor will also survey the vertical elevation of the invert of each drain pipe (at the catch basins) and the outfalls on Parcel D (and on Parcel F if as-built drawings for the recently installed stormwater structures are not available). The surveyor will also survey the horizontal positions of any groundwater seep samples and bank soil samples, and the horizontal positions of property buildings. The horizontal positions will be surveyed to the nearest 0.1 foot relative to GIS coordinates. The vertical elevations of the ground surface and well casings will be surveyed to the nearest 0.01 foot, relative to the NAVD 88 datum.

4.3 Data Evaluation

The results of the investigation and analysis conducted during the RI will be used to re-evaluate contaminant fate and transport, and to update the preliminary conceptual site model presented in Section 3. The final conceptual site model will include an update to the assessment of exposure pathways and potential receptors based on the results of the data collected during the RI. The preliminary conceptual site model described in Section 3 presents the current understanding of potential pathways and exposure scenarios. These pathways, and any other potential exposure pathways identified during the RI, will be evaluated.

If areas are identified where information is required to fill any other data gaps or to protect human health and the environment, the additional investigation activities will be conducted during additional phase(s) of the RI.

Any additional phases of the RI will be initiated immediately upon identification of data gaps. An addendum to this RI/FS work plan will be submitted to Ecology for review and approval by the PLPs prior to implementation of any additional phases of the RI, and within 30 days of identification of data gaps. Additional investigation activities will be conducted immediately upon approval of work plan addenda by Ecology.

Following completion of field sampling activities, analytical results will be compared to the proposed site cleanup standards identified by the FS (Section 5). The FS will be prepared following completion of all phases of the RI.

Section 5: FS Tasks

This section of the RI/FS work plan provides a discussion of the FS SOW.

5.1 FS Scoping

The purpose of the scoping task is to define the objectives that will guide the development and selection of cleanup action alternatives. The process for defining the overall FS objectives will include: 1) evaluating the data generated from previous investigations and the RI; 2) defining the remedial action objectives; and 3) developing general response actions. In order to develop general response actions that reflect MTCA cleanup standards and other applicable regulations, this task will be performed concurrent with the identification of applicable ARARs for the site (see Section 5.2).

5.2 Identification of Applicable State and Federal Laws

This task is designed to meet WAC 173-340-710 requirements that cleanup actions conducted under MTCA comply with applicable state and federal laws. "Applicable state and federal laws" are defined in WAC 173-340-710(1) as those requirements (referred to as ARARs) that are 1) legally applicable, and 2) considered relevant and appropriate. "Legally applicable" and "relevant and appropriate" requirements are defined by WAC 173-340-710(3) and (4), respectively. These definitions are summarized below.

Legally applicable requirements include those standards or other requirements, criteria, or limitations promulgated under Washington state law or federal law that specifically address a hazardous substance, cleanup action, location, or other circumstance at the site. Though not legally applicable, relevant and appropriate requirements include those requirements designed to address problems or situations sufficiently similar to those encountered at the site that their use is well suited to the site.

During this phase of the FS, the preliminary cleanup levels for the COPCs will be identified for each medium of concern. Potential future site use will be considered in identifying cleanup levels. Cleanup standards will also be developed during this phase and in conjunction with the development of cleanup action alternatives (see Section 5.5).

Pursuant to WAC 173-340-710(5), regulatory variance or waiver provisions included in applicable state and federal law may be exercised if Ecology determines that such a variance or waiver is appropriate and that the substantive conditions of the variance or waiver are met. This consideration of variances is only applicable if the cleanup action is protective of human health and the environment.

All identified ARARs will be described in the FS report. A determination will be made during the FS as to whether variance or waiver provisions in the identified state and federal laws may be appropriate for the site.

5.3 Identification of Remedial Technologies

For each general response action identified during FS scoping, a list of potential remedial technologies will be developed. Pursuant to WAC 173-340-350(8)(c)(i), technologies used in cleanup actions should minimize the amount of untreated hazardous substances remaining at the site. To meet this goal, MTCA regulations specify that the following technologies be considered in order of descending preference:

- Reuse or recycling
- Destruction or detoxification
- Separation or volume reduction
- Immobilization
- Onsite or offsite disposal in an engineered facility
- Isolation or containment, with engineering controls
- Institutional controls and monitoring.

During the FS, potential technologies from these categories will be identified and subsequently screened based on site-specific factors, as well as on the potential effectiveness and implementability of the technology.

5.4 Treatability Studies

Treatability studies can provide site-specific information regarding a remedial technology's cost, anticipated treatment time, and other parameters that can be useful in assessing a technology's potential applicability to the site. During identification of remedial technologies for the site, it may be determined that the ability of a specific treatment technology to treat site-specific contaminants or contaminant concentrations cannot be adequately addressed without a treatability study.

If, during the FS, it is determined that treatability studies are warranted, a treatability study work plan will be prepared and submitted to Ecology for review and approval. The necessity for treatability studies will be identified as soon as possible in the process to prevent delays.

5.5 Development of Cleanup Action Alternatives

The purpose of this phase of the FS will be to combine identified remedial technologies into cleanup action alternatives that are specific to the site's COPCs, potential contaminant transport pathways, and receptors. Alternatives will be based on the general response actions developed during FS scoping and will incorporate the remedial technologies identified in the previous phase. Alternatives will be developed to comply with MTCA and ARARs, and to provide protection to human health and the environment. Other factors specified in WAC 173-340-360, such as permanence of the cleanup action and restoration timeframe, will also be considered in developing cleanup alternatives for the site.

5.6 Detailed Evaluation of Alternatives

A detailed analysis of the cleanup action alternatives will be performed consistent with WAC 173-340-360 criteria, and a description of each alternative included in the analysis will be prepared. Both capital and operating costs will be developed. Each alternative will then be analyzed by using the MTCA cleanup action selection criteria presented in WAC 173-340-360. Cleanup alternatives shall:

- Protect human health and the environment
- Comply with cleanup standards
- Comply with applicable state and federal laws
- Provide for compliance monitoring
- Use permanent solutions to the maximum extent practicable
- Provide for a reasonable restoration time frame
- Consider public concerns.

5.7 Selection of Preferred Alternative

After completion of the detailed analysis, a preferred alternative will be identified based on a comparative evaluation of the alternative's ability to meet MTCA selection criteria, as compared to other alternatives. The following general guidelines will be utilized in the comparative evaluation:

- Overall level of protectiveness: Alternatives will be ranked by level of protectiveness. This will be assessed, in part, by the level to which contaminant concentrations will be reduced and exposure pathways eliminated.
- Preferred technologies: Alternatives with the same general level of protectiveness will be differentiated based on the alternative's use of a preferred technology, per WAC 173-340-350(8)(c)(i).
- Permanence: After ranking the alternatives per the above guidelines, alternatives will be compared with the permanence criteria of WAC 173-340-360(3). The alternative which represents the best "permanent solution to the maximum extent practicable" will be identified. In determining the practicability of a cleanup action alternative, a disproportionate cost analysis [WAC 173-340-360(3)(e)] will be performed to determine if the incremental cost of a particular cleanup alternative is substantial and disproportionate to the incremental degree of protection it would achieve over a lower preference alternative. The permanence evaluation criteria, based on WAC 173-340-360(3)(f), include protectiveness, permanence, cost, effectiveness over the long term, management of short-term risks, technical and administrative implementability, and consideration of public concerns.

Section 6: Schedule and Deliverables

6.1 Progress Reports

During the RI and FS, progress reports will be submitted to Ecology on a monthly basis, and at a minimum, will contain the following information regarding the preceding reporting period:

- Description of the actions that were completed to comply with the Agreed Order SOW or this RI/FS work plan.
- Summary of sampling and testing reports and other collected data.
- Description of any deviations from the Agreed Order SOW or this RI/FS work plan.
- Summary of contacts with representatives of the local community, public interest groups, press, and federal, state, or tribal governments.
- Description of any problems or anticipated problems in meeting the schedule or objectives set forth in the Agreed Order SOW or this RI/FS work plan.
- Summary of planned or implemented solutions to address any actual or anticipated problems or delays.
- Changes in key personnel.
- Description of work planned for the next reporting period.

6.2 Remedial Investigation Deliverables

The RI deliverables will consist of addenda to the work plan and SAP, if any are needed for additional data requirements identified during the RI, and draft and final versions of an RI report.

If additional data needs are identified during or after completion of the initial RI SOW, addenda to the work plan and SAP will be prepared to describe the additional data needs and proposed additional sample media, locations, depths, and analytical parameters. Draft versions of any addenda to the work plan and SAP will be submitted to Ecology for review. Final addenda will be prepared that addresses the comments and required changes from Ecology.

A Draft RI Report will be prepared to summarize the procedures used to investigate the site, to present the field data and the validated sample analytical data, and to discuss the interpretations of the data and the conclusions. The report will include the proposed preliminary soil and groundwater cleanup levels and a revised conceptual site model. The Draft RI Report will be submitted to Ecology for review. A Final RI Report will be prepared that addresses the comments and required changes from Ecology. All of the RI data will be entered into Ecology's Environmental Information Management (EIM) database.

In addition, tabulated raw data, copies of original laboratory reports, and sample location maps will be submitted to Ecology within 10 days of receipt of data from the analytical laboratory.

6.3 Feasibility Study Deliverables

The FS deliverables will consist of draft and final versions of an FS report, a State Environmental Policy Act (SEPA) environmental checklist, and draft and final Responsiveness Summaries.

A Draft FS Report will be prepared that details the development and evaluation of several remedial alternatives for the site, and identifies the alternative that best satisfies the evaluation criteria. The Draft FS Report will be submitted to Ecology for review. A Draft Final FS Report will be prepared that addresses the comments and required changes from Ecology, and this report will be submitted to Ecology for distribution and public comment.

After the public comment periods are completed, a Draft Responsiveness Summary will be prepared that addresses the public comments and a second Draft Final FS Report will be prepared that addresses the comments. The Draft Responsiveness Summary and the second Draft Final FS Report will be submitted to Ecology for review. A Final Responsiveness Summary and a Final FS Report will be prepared to address Ecology's comments.

6.4 Schedule

The schedule for the RI/FS activities and deliverables is in compliance with the Agreed Order SOW schedule, and is presented below.

RI/FS Activities and Deliverables	Due Dates
Progress Reports	15th of every month beginning with issuance of the Final RI/FS Work Plan by Ecology
Completion of initial RI fieldwork	12 months following Ecology's approval of Final RI/FS Work Plan
Draft Addenda to Work Plan	45 days following identification of data gaps, or as needed during the RI
Final Addenda to Work Plan	30 calendar days following receipt of Ecology's review comments on the Draft Addenda to SAP
Completion of fieldwork to address data needs identified in Work Plan addenda, if any.	3 months following Ecology's approval of Final Addenda to Work Plan
Draft RI Report	90 days following receipt of all final laboratory data
Final RI Report	45 calendar days following receipt of Ecology's review comments on the draft report
Draft FS Report	90 days following completion of the Final RI Report
Draft Final FS Report	45 calendar days following receipt of Ecology's review comments on the draft report
2nd Draft Final FS Report and Draft Responsiveness Summary	60 calendar days following receipt of Ecology's responses to public comments
Final FS Report and Final Responsiveness Summary	45 calendar days following receipt of Ecology's review comments

Section 7: Sampling and Analysis Plan

The SAP presented below is based on the site data gaps previously discussed and summarized in Table 1. The SAP describes the field procedures, methodologies, and analytical methods for each work task based on the SOW presented in Section 4.

The RI sampling activities at the site will be performed to provide data of sufficient quality and quantity to satisfy the investigation objectives for the entire site, including all potential contaminant source areas, and for the river sediments on the property.

Sample locations are shown on the following figures:

- Figure 12 shows the locations of planned soil boring and new monitoring wells (which also include soil sampling).
- Figure 13 shows the locations of new and existing monitoring wells, including existing wells requiring inspection prior to use. Figure 13 also shows the locations of sediment sampling locations (within riprap bank and within Slip 4 and the Duwamish Waterway).

Sampling locations, depths, and analytical testing requirements are listed on the following tables:

- Table 2 – Soil boring and monitoring well boring samples
- Table 3 – Monitoring well, stormwater, and seep samples
- Table 4 – Riprap sediment and Duwamish Waterway sediment samples.

7.1 Sampling Plan

7.1.1 Soil Borings

A total of 69 soil borings are initially planned for the RI, including 15 to be completed as new monitoring wells. Boring locations are shown on Figure 12.

The soil borings shall be drilled and sampled using techniques selected by the PLP that are suitable for meeting the RI/FS work plan objectives and to comply with applicable regulations. It is anticipated that borings will be drilled by a driller licensed in the State of Washington using hydraulic push-probe methods, and soil samples will be collected on a continuous basis. Drilling activities will be performed under the direction of a licensed geologist provided by the consultant. After the completion of drilling and sampling activities, each boring will be abandoned with hydrated bentonite, except for those in which monitoring well installation is planned (Section 7.1.2).

The PLP's geologist will continuously log the soils encountered during drilling, and will perform field screening for the potential presence of contamination based on visual appearance (staining or sheen), odor, and photoionization detector (PID) readings.

Most of the soil borings will be advanced to a depth of 20 feet bgs. Some soil borings (refer to Table 2) will be advanced to greater depths (up to 50 feet bgs) to provide for evaluation of COPCs, site stratigraphy, and for deep monitoring well installation.

If field observations indicate the potential presence of contaminants at the planned bottom depth at a soil boring location, the boring will be advanced to greater depth as needed to evaluate the vertical extent of potential contaminant impacts.

A minimum of three soil samples from each shallow boring and four from select borings based on previous analytical results and data gaps, will be submitted for laboratory analysis for the analyses indicated in Table 2. Additional soil samples will be collected and archived at the analytical laboratory for possible follow-up analyses. At a minimum, soil samples will be collected for analysis or archival at an approximate depth interval of 2.5 feet for depths above 15 feet bgs, and at a depth interval of 5 feet below 15 feet bgs.

Approximate sample depths for analysis and archival for each soil boring are listed in Table 2. The depths listed in Table 2 are the "default" depths and samples should be collected as close as possible to the indicated depths; however, the depths may be adjusted slightly if warranted by field observations (i.e., preference will be given for sample collection where field observations indicate contaminant impacts are more likely). The listed sample depth shall be included in the sample interval for each depth, but the listed depth may be at any location within the interval (i.e., the listed sample depth may be at the top, middle, or bottom of the interval).

Additional samples will be submitted for initial laboratory analysis if field observations indicate the potential presence of contaminants. Field observations warranting additional sample analyses include, but are not necessarily limited to:

- Staining, odor, non-aqueous phase liquid, sheen, and PID readings. Additional samples will be submitted for the full suite of analyses listed for the borings listed in Table 2.
- The presence of materials such as metals shavings or slag-like materials that may suggest anthropogenic activities. Additional samples will be submitted for the full suite of analyses listed for the borings listed in Table 2.
- The presence of burned or partially burned materials and ash that indicate past filling activities. These samples will be submitted for analysis of dioxins and furans. If burned or ash materials are observed in a sample already being submitted for laboratory analysis, analysis for dioxins and furans will be added.

Laboratory analysis of archived samples will be performed for analytes previously identified as site COPCs (refer to Section 2) that are detected in a vertically adjacent sample at a concentration above the laboratory reporting limit (i.e., for COPCs detected in a sample collected immediately above or below an archived sample). For analytes not previously identified as site COPCs, the PLPs shall notify Ecology within 24 hours of receipt of analytical data and a determination shall be made regarding follow-up analyses of archived samples.

If field observations or analytical results indicate the presence of contaminants at a soil boring location, additional borings may be advanced as necessary to evaluate the extent (lateral and/or vertical) of impacts. Locations of additional borings, and a description of potential contaminants, will be submitted to Ecology for review and approval prior to installation of additional borings.

The soil sampling procedures generally include the following:

- All sampling equipment and reusable materials that will contact the sample will be decontaminated on site in accordance with procedures identified in Section 7.5. The field geologist will use clean neoprene or vinyl gloves for handling each sample.

- The sample container labels will be filled out and attached to the appropriate containers as described in Section 7.4. The appropriate sample jars for each soil sample are listed in the QAPP (see Appendix D).

- A clean stainless-steel spoon will be used to transfer the soil samples to the sample jars. To protect the sample from possible contamination during handling, the acetate liner will be placed on a clean piece of plastic sheeting. All subsequent handling of the sample will take place over the plastic sheeting.

- At least two 4-ounce jars and four volatile organic analysis vials (an U.S. Environmental Protection Agency (EPA) Method 5035 kit] will be filled at each sample interval. Soil will be transferred directly from the sampler to the sample containers. Care will be taken to minimize disturbance of soil placed in the containers. Each container will be filled as full as possible to minimize headspace. Sample container requirements will be verified by the consultant for the selected analytical laboratory prior to the start of field sampling activities.

- After filling the sample jars, the sample interval will be logged on a dedicated field boring log form using the United Soil Classification System.

- Samples submitted for duplicate chemical analysis will be collected by using the procedures described above. Samples will be blind labeled when submitted to the lab. The actual location of the duplicate sample will be recorded on the field boring log.

- After filling, the sample containers will be placed on ice in a cooler and handled as described in Section 7.4.

7.1.2 Monitoring Well Installations

As discussed in Section 4.2.3, monitoring wells will be installed following completion of soil boring activities at 15 locations (refer to Figure 12). The new wells include 11 shallow wells and four deep wells. Monitoring wells may also be installed to replace existing site wells if the wells are found to be inadequate (refer to Section 4.2.3).

All monitoring wells shall be installed using appropriate techniques selected by the PLP that are suitable for meeting the RI/FS work plan objectives and to comply with applicable regulations. It is anticipated that the shallow wells may be installed using the direct-push drill rig following installation of the soil boring. The deeper wells may be installed using a hollow-stem auger drill rig at the same location as the direct-push soil boring. The need for conductor casings to prevent cross contamination of COPC shall be determined by the PLP.

Each of the wells will be constructed of 2-inch-diameter Schedule 40 PVC with a 15-foot-long (shallow wells) or 10-foot-long (deep wells) screen (0.010-inch wide slots). The screen interval for the shallow wells will intercept the groundwater table with at least 1 foot of screen installed above the seasonal/temporal high water level. A blank PVC casing will be attached to the screen and will extend to approximately 6 inches bgs.

A filter pack consisting of 2/12 Lapis Lustre silica sand or equivalent will extend from the bottom of the well to approximately 2 feet above the uppermost screen slot. For the shallow wells, pre-packed well screens may be used with additional sand added around and above the pre-packed screen.

A hydrated bentonite chip seal will be installed above the filter pack to approximately 1 foot bgs. A traffic-rated steel monument will be installed (in concrete) flush with the ground surface to protect the well.

After installation, the driller will thoroughly develop the newly installed wells by using surging and pumping methods. The development will be conducted at 1- to 2-foot intervals beginning at the bottom of the well and extending up to the top of the water table (shallow wells) or top or the screened interval (deep wells). The development process will repeated until the turbidity of the groundwater is less than 5 NTU or until turbidity measurements become stable.

7.1.3 Groundwater Elevation Monitoring

As discussed in Section 4.2.4, groundwater elevation monitoring will be performed at high and low tide during two separate elevation monitoring events during the RI. The first elevation monitoring event will be performed at least 1 week after the installation of new monitoring wells and redevelopment (or replacement) of the exiting site wells requiring assessment (refer to Section 4.2.3).

Water level measurements will include all site monitoring wells (shallow and deep) for each monitoring event. Measurements will be completed within a 1-hour time span for each event and will coincide with published times for high and low tide. Measurements will begin no earlier than ½ hour before each tidal extreme. For each event, water level measurements will be made on the same day during consecutive tidal cycles (i.e. the high tide immediately following a low tide, or vice-versa) with at least a 10-foot change in tidal height. Well caps will be loosened at least 1 hour prior to measurement to allow for equilibration of water levels.

Water levels will be measured using an electric water level probe at each well location. The probe will be cleaned between measurements of different wells as described in Section 7.5. The water level in each well will be measured to the nearest 0.01 foot from a surveyed notch in the well casing by using an electric water level probe.

In addition, the water level will be measured in Slip 4 for each tidal extreme at a stilling well to be installed by the PLPs. The location of the stilling well is to be approved by Ecology prior to installation.

7.1.4 Groundwater Monitoring

As discussed in Section 4.2.4, five groundwater monitoring events are included in the RI SOW including four quarterly monitoring events conducted during low tide conditions, and one supplemental monitoring event conducted during high-high tide conditions. The quarterly monitoring events will be performed at approximately 3-month intervals. The high-high tide monitoring event will be performed between the first two quarterly monitoring events.

Monitoring well sampling locations are shown on Figure 13. Analyses to be performed for each monitoring event are summarized in Table 3. Laboratory analyses for the quarterly monitoring events include the full suite of COPCs (may be modified for the third and four quarterly events as discussed in Section 4.2.4). Laboratory analyses for the supplemental high-high tide monitoring event includes total and dissolved metals.

For the supplemental high-high tide sampling event, groundwater purging may begin approximately 2 hours before high tide and continue until 2 hours after high tide for the wells located within 200 feet of the waterway.

The groundwater sampling procedures include the following:

- The depths to groundwater will be measured in the monitoring wells before sampling. The water level in each well will be measured to the nearest 0.01 foot from a surveyed notch in the well casing by using an electric water level probe. Water depths will be recorded on a dedicated purge and sample field form, and will include date, time, and sampler's initials.

- The monitoring wells will be purged using low-flow procedures. Groundwater samples will be collected using a peristaltic pump fitted with silicon tubing and either Tygon® or polyethylene tubing. Pump tubing will be lowered to a mid-screen depth for purging and sampling. Monitoring wells will be purged at a rate of less than 0.3 liter per minute. The flow rate will be adjusted as necessary to prevent the groundwater level from dropping more than 10 percent.

- Field parameters will be measured in purged groundwater as it is discharging through a flow-through cell. Groundwater will be passed through the cell and discharged into a temporary storage container. Field parameters will be periodically measured (every 3 minutes) and recorded during well purging and upon stabilization. Field parameters will be measured using a multi-parameter meter. The multi-parameter meter will be calibrated before measurements are taken. Field parameter measurements will include the following:
    - Temperature
    - pH
    - Dissolved oxygen
    - Redox potential
    - Specific conductance.

- Groundwater samples will be collected after the field parameters have stabilized to within 10 percent of the previous reading. If the groundwater parameters do not stabilize, a maximum of three casing volumes will be purged prior to sampling. The purge water will be stored and disposed as described in Section 7.6.

- Groundwater samples will be collected using low-flow sampling techniques. Pump tubing will be maintained at a mid-screen depth for sampling. Groundwater samples will be collected after recording final field parameter readings.

- Groundwater samples will be collected from the discharge line of the peristaltic pump. All samples will be transferred in the field from the sampling equipment into the laboratory-prepared containers and stored in a cooler on ice pending transport to the laboratory. Sample container requirements will be verified by the PLP for the selected analytical laboratory prior to the start of field sampling activities.

- Samples will be labeled, handled, and shipped using the procedures described in Section 7.4. Sample custody will be maintained until delivery to the analytical laboratory. All sampling field activity and data will be recorded on a dedicated purge and sample field form.

- The sampler(s) will wear new neoprene gloves at each sampling location. New Tygon® or polyethylene tubing will be used at each sampling location.

- Samples will be labeled, handled, and shipped by using the procedures described in Section 7.4. Sample custody will be maintained until delivery to the analytical laboratory. All sampling field activity and data will be recorded on a dedicated purge and sample field form.

- Quality assurance samples will be collected at the frequency described in Section 7.7. Duplicate samples will be collected by alternately filling similar containers until both containers are filled.

All reusable purging and sampling equipment will be decontaminated by using the procedures described in Section 7.5.

7.1.5 Stormwater Catch Basin Sampling

As discussed in Section 4.2.5, solids samples will be collected from site catch basins during two sampling events. Catch basins to be sampled are summarized in Table 4. The locations of the catch basins and the underground stormwater conveyance lines are shown on SLR Figure 3 in Appendix A.

Each of the catch basins solids samples will be collected by removing the lid of the catch basin and using a decontaminated stainless steel spoon or similar tool to remove solids from the basin at several locations (from each corner and the center of the basin). An extension pole may be attached to the spoon in order to reach the bottom of each catch basin.

The samples will be composited in a decontaminated stainless steel bowl, and the material described in accordance with the Unified Soil Classification System. If standing water is present in a catch basin, then the water will be slowly extracted with a peristaltic pump to minimize any disturbance of the solids. Care will be taken to include fine particles in the sample and solids from the total depth of accumulated materials. Care shall also be taken to package the samples as soon as possible following collection and compositing.

Sampling equipment will be decontaminated between sample locations and a new pair of nitrile gloves will be worn during sampling. After filling, the sample containers will be placed on ice in a cooler and handled as described in Section 7.4. Any water that is pumped from the catch basins will be stored and disposed as described in Section 7.6.

In addition, the dimensions of the catch basin will be measured and locations of inlets and outfalls will be recorded. The solids, any debris, staining, and odors in the catch basin will be described. The thickness of the solids will be measured prior to sampling with a decontaminated metal rod or disposable wooden dowel.

If the volume of solids in a selected catch basin is insufficient, then another selected catch basin from that conveyance line will be sampled. If the sediment volume in a single catch basin is insufficient, sediment from adjacent catch basins (in the same conveyance line) may be composited.

Analyses to be performed for catch basin solids samples are listed in Table 4.

7.1.6 Stormwater Outfall Sampling

As discussed in Section 4.2.6, stormwater samples will be collected from each of the six outfalls from the site. Five stormwater sampling events are included in the RI. The first stormwater sampling event will be performed prior to cleaning of site catch basins (refer to Section 4.2.5).

Stormwater samples will each be collected during precipitation events with at least 0.1 inch of rainfall over a 24-hour period. The sampling events will be preceded by at least 24 hours of no greater than a trace of precipitation.

To minimize any surface water influence on the samples, the samples will be collected during a period when the drainage outfalls are above the water level of the waterway (at low tide). The stormwater samples will be grab samples collected directly from the outfall pipes. Each sample jar may be attached to an extension pole in order to reach the outfall.

The field geologist will use clean neoprene or vinyl gloves for handling each sample. After filling, the sample containers will be placed on ice in a cooler and handled as described in Section 7.4. Analyses to be performed for stormwater samples are listed in Table 3.

7.1.7 Seep and Riprap Sediment Sampling

As discussed in Section 4.2.7, samples of seeps and sediment accumulated in riprap areas will be collected for laboratory analysis, if any are identified. If present, sediment samples will be collected at the locations shown on Figure 13 (each end of the exiting pier and at each stormwater outfall location), and at locations of any seep that are identified.

Samples will be collected from any groundwater seeps encountered in the riprap or sheet pile seawall and other bank areas. Seep samples will be collected by placing decontaminated bottles directly beneath the flow from the seep, pouring the collected water into a decontaminated stainless steel bowl to allow any sediment to settle out, and after at least 20 minutes, use a peristaltic pump to slowly extract the water from the bowl and fill the laboratory-prepared sample jars.

Sediment samples will be collected from each riprap area where accumulation is sufficient using a decontaminated stainless steel spoon. Sample material will be placed directly into appropriate laboratory-provided sample containers.

The field geologist will use clean neoprene or vinyl gloves for handling each seep or sediment sample. After filling, the sample containers will be placed on ice in a cooler and handled as described in Section 7.4.

Analyses to be performed for seep samples are listed in Table 3. Analyses to be performed for riprap sediment samples are listed in Table 4.

7.1.8 Duwamish Waterway Sediment Sampling

As discussed in Section 4.2.8, surface sediment samples and sediment core samples will be collected in Slip 4 and Duwamish Waterway at the locations indicated on Figure 13. Sediment sample collection and processing procedures are described below. Analyses to be performed for sediment samples are listed in Table 4.

7.1.8.1 Surface Sediment Sample Collection and Processing

Surface sediment samples will be collected with a modified van Veen sampler, or similar device, while using a vessel equipped with a differential global positioning system (DGPS) and a depth sounder. The horizontal positioning of all of the sediment sample locations will be determined by using the on-board DGPS. Sample station positions will be recorded in latitude and longitude to the nearest 0.01 second. The accuracy of the horizontal coordinates will be within three meters. All position coordinates will be based on the Washington State Plane Coordinate System, North Zone, 83/91.

The mud line elevation of each sampling station will be determined relative to mean lower low water (MLLW) by measuring the water depth at each sampling location with a calibrated fathometer or lead line and subtracting the tidal elevation. Tidal elevations will be determined by using predicted tide charts available through Tides and Currents™ by Nobeltec, Inc., or by National Oceanic and Atmospheric Administration (NOAA) actual tide data.

Surface sediment samples for laboratory analyses will be collected from the 0 to 10 centimeter (cm) biologically active zone by using a modified van Veen grab sampler, or similar device, in accordance with Puget Sound Estuary Program (PSEP) (PSEP 1997) and Ecology's Sediment Sampling and Analysis Plan Appendix protocols (Ecology 2008). The sampler is used to collect large volume, surficial sediment samples. Upon contact with sediments, the jaws are drawn shut to collect the sample. Samples will be collected in the following manner:

- Vessel will maneuver to the sample location.
- Jaw assembly will be decontaminated and deployed.
- The winch cable to the grab sampler will be drawn taut and vertical.
- Location of the cable hoist will be measured and recorded by the location control personnel.
- The jaw assembly will be closed to collect the sediment sample to a penetration depth of approximately 20 cm.
- The sediment grab sample will be retrieved aboard the vessel and evaluated against the following PSEP acceptability criteria:

- Grab sampler is not overfilled (e.g., sediment surface is not against the top of sampler)
- Sediment surface is relatively flat, indicating minimal disturbance or winnowing
- Overlying water is present, indicating minimal leakage
- Overlying water has low turbidity, indicating minimal sample disturbance.

- Overlying water will be siphoned off and a stainless steel spoon or similar device will be used to collect a 0 to 10 cm sediment layer from inside the sampler, taking care not to collect sediment in contact with the sides of the sampler.

- The collected sediment will be placed in a stainless steel mixing container. When sufficient sample volume has been collected, the sediment will be homogenized by using a stainless steel spoon.

- Homogenized sediment will be placed immediately into appropriate pre-cleaned and pre-labeled containers and placed immediately on ice for transport to the laboratory.

All equipment and instruments in contact with sediments will be made of glass or stainless steel and will be decontaminated prior to each day's use and between sampling or compositing events by using the procedures described in Section 7.5.

Sediment grab samples will be processed on-board the sampling vessel immediately following collection. Each sample will be photographed and a description of each sample will be recorded on a log form, and will include the following:

- Sediment type (e.g., silt, sand, gravel)

- Major and minor constituents

- Density/consistency based on visual observations

- Moisture (e.g., dry, damp, moist, wet)

- Sediment color

- Sediment odor
  - Hydrogen sulfide (H_2S) (none, trace, slight, moderate, strong)
  - Petroleum hydrocarbons (none, trace, slight, moderate, strong)

- Any presence of sheen

- Sediment observations
  - Percent of woody material on surface and within sample
  - Biological activity
  - Presence of algae or debris.

7.1.8.2 Sediment Coring Collection and Processing

The collection of sediment sample cores will be conducted off of a vessel operated under the direction of a qualified operator. The vessel will be equipped with a frame and winch, seawater pumps, DGPS, and a depth sounder. All cores will be processed on land and fully logged.

Sediment cores will be collected at each location by using a vibratory coring device. The corer will use a decontaminated aluminum barrel for collecting the sediment. The corer will be deployed by a winch and sent to the bottom, where the unit will then be energized and lowered to the target coring depth. When that depth is reached, the corer will be turned off and returned to the surface for sample processing. During the coring operation, the penetration of the core barrel will be continuously monitored. The sampling equipment will be decontaminated by using the procedures described in Section 7.5.

Logs and field notes of all core samples will be maintained as samples are collected. The following information will be included in the logs:

- Mud line elevation of each core station relative to MLLW.
- Location of each core station as determined by DGPS.
- Date and time of collection of each sediment core sample.
- Names of field supervisor and person(s) collecting and logging the samples.
- Observations made during sample collection, including weather conditions, complications, ship traffic, and other details associated with the sampling effort.
- The sample station number.
- Length and depth intervals of each core section relative to MLLW and recovery for each sediment sample. The acceptable core samples will achieve a minimum of 70 percent recovery. If less than 70 percent recovery is achieved in the first attempt, a second core will be attempted. If less than 70 percent recovery is achieved in the second attempt, the core with the greater recovery will be retained for processing.
- Qualitative notation of apparent resistance of sediment column to coring.
- Any deviation from the approved sampling plan.

If refusal is encountered at any core location, the core sample will be offset from 10 to 25 feet and the sample station will be re-attempted at a comparable water depth. After three rejections or refusals at a given station, the core will be processed using the available recovered intervals. If refusal at multiple locations results in significant changes to the SAP, these changes will be discussed with the project manager and Ecology.

Core processing will be conducted at a shore-based location. Each core tube will be cut lengthwise with an electric saw. Care will be taken to prohibit contact of the saw blade with the sediment. Each core section will be logged throughout the full penetration depth. A description of each sediment core sample will be recorded on the core log, and will include the following:

- Sample recovery (depth in feet of penetration and estimated sample compaction)
- Physical soil description using the United Soil Classification System (see Figure 2)
- A description of any wood debris, including size of debris and percent by volume in each core section

- Odor (e.g., hydrogen sulfide, petroleum)
- Vegetation
- Debris
- Any other distinguishing characteristics or features.

The cores will be sectioned in representative sample intervals based on core lithology starting at the mud line. At least one sample will be collected for every 2 feet of core. The last sample interval of non-native material will end 15 cm above the native interface. Samples of the native material (Z-layer samples) may also be collected. If possible, the “Z” samples would be collected 15 cm below the native interface and will consist of a 15-cm interval.

The sediment retrieved from each sample interval that will contribute to a given sample will be homogenized by thoroughly mixing with stainless steel utensils until the sediment appears uniform in color and texture. The homogenized sample material will be mixed throughout the process of filling the laboratory-prepared sample jars to ensure that each sample jar is representative of the homogenate mixture. After filling, the sample containers will be placed on ice in a cooler and handled as described in Section 7.4.

7.2 Analytical Methods

All of the soil, catch basin solids, groundwater, and stormwater samples will be submitted to a local analytical laboratory certified by Ecology for the suite of analyses required for all site media. Any samples for dioxins and furans analysis will be forwarded to a qualified analytical laboratory specializing in dioxin and furans analysis. Laboratories for all analyses will be identified, and analytical methods verified, by the PLP prior to start of work and Ecology will be notified. Sample analyses will not be performed without Ecology approval of the selected analytical methods and laboratories.

A practical quantitation limit (PQL) of each of the sample analyses as described in this SAP will be applied to ensure that the lowest practical detection limit is used. However, if interference in an analysis prevents the use of the PQL, then the laboratory will use the lowest possible reporting limit that is technically feasible for the sample matrix.

Target PQLs are included in the QAPP (see Appendix D). The PLPs shall submit a list of actual PQLs and detection limits for their selected analytical laboratories to Ecology for review and approval prior to performing any sampling activities.

7.2.1 Soil, Catch Basin Solids, and Sediment Samples

Laboratory analyses and analytical methods anticipated for soil samples, catch basin solids samples, and sediment samples include the following:

- DRO and HO by Northwest Method total petroleum hydrocarbon as diesel extended (NWTPH-Dx) (with silica gel cleanup)
- GRO by Northwest Method total petroleum hydrocarbon as gasoline extended (NWTPH-Gx)

- Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc by EPA Method 6020
- Mercury by EPA Method 7471
- SVOCs by EPA Method 8270D including PAHs by selective ion monitoring (SIM)
- PCBs by EPA Method 8082A
- VOCs by EPA Method 8260C
- Total organic compounds (TOC) by EPA Method 9060
- Dioxins and furans by EPA Method 8290
- Grain size by ASTM D-422.

To assess the potential presence of hexavalent chromium in soil, the 10 soil samples that contain the greatest total chromium concentrations will be analyzed for hexavalent chromium by EPA Method 7195.

7.2.2 Water (Groundwater and Surface Water) Samples

Laboratory analyses and analytical methods anticipated for stormwater samples include the following:

- Total and dissolved antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc by EPA Method 200.8
- Total and dissolved mercury by EPA Method 1631E
- SVOCs by EPA Method 8270D including PAHs by SIM
- PCBs by EPA Method 8082A
- DRO and HO by Northwest Method NWTPH-Dx (after silica gel cleanup)
- GRO by Northwest Method NWTPH-Gx
- VOCs by EPA Method 8260C
- Total Suspended Solids (TSS) by Standard Method 2540D
- Total Dissolved Solids (TDS) by Standard Method 2540C
- TOC by EPA Method 9060M
- Dissolved organic carbons (DOCs) by EPA Method 415.3
- Chloride by Method SM4500.

All dissolved metals analyses will be conducted after laboratory filtering of the samples.

To assess the potential presence of hexavalent chromium in the groundwater, the five groundwater samples from the first quarterly sampling event that contain the greatest total chromium concentrations will be analyzed for hexavalent chromium by EPA Method 7196A.

7.3 Sample Designation

Soil samples will be identified by the boring from which they are collected, and groundwater samples will be identified by the monitoring well from which they are collected. The soil boring samples will be identified by the soil boring number and the sample depth. For example, the sample collected from boring ESB-10, at a depth of 5 feet, would be designated "ESB-10-5."

The groundwater samples will be identified by the monitoring well name and date, the catch basin solids samples will be identified by the catch basin name and date, and the stormwater samples will be identified by the number of the sampled catch basin and the date. For example, the groundwater sample collected from monitoring well CMW-8 in June 2013 would be designated "CMW-8-0613". Riprap sediment samples will be designated as RRS-# (where "#" indicates the sequential number for the samples collected).

Any surface sediment samples would be identified by "SSED-" for surface sediment sample, and the sample station number. Any sediment core samples will be identified by "SEDC-" for sediment core sample, the sample station number, and the core sample interval by depth interval from the mud line. If a core sample of the native material below the sediment is collected, that sample interval will be designated "Z".

QA samples (field duplicates) will be submitted blind (i.e., not identified as QA samples) to the laboratory. The QA samples will be labeled with a fictitious sample name (e.g., a nonexistent sampling location). Trip blanks will be identified with sequential sample number and a date suffix (e.g., TB-1-0612) on the container. Extra samples collected for laboratory duplicates and matrix spike and matrix spike duplicate (MS/MSD) analyses will be identified with the same designation as the sample.

7.4 Sample Labeling, Shipping, and Chain-of-Custody

Sample Labeling. Sample container labels will be completed immediately before or immediately after sample collection. Container labels will include the following information:

- Project name
- Sample number
- Name of collector
- Date and time of collection
- Analyses requested.

Sample Shipping. Samples will be transported in a sealed, iced cooler. In each cooler, glass bottles will be separated by a shock-absorbing and absorbent material to prevent breakage and leakage. Ice sealed in separate plastic bags, will be placed into each cooler with the samples. All sample coolers will be accompanied by a chain-of-custody form. The completed form will be sealed in a plastic bag and will be transported with the cooler(s). Sample coolers will be transported to the laboratory via courier or by the field sampler.

Chain-of-Custody. Once a sample is collected, it will remain in the custody of the sampler or other SLR personnel until delivered to the laboratory or picked up by the laboratory's courier. Upon transfer of sample containers to subsequent custodians, a chain-of-custody will be signed by each person transferring custody of the sample container. Upon receipt of samples at the laboratory, the condition of the samples will be recorded by the receiver. Chain-of-custody records will be included in the analytical report prepared by the laboratory.

7.5 Decontamination Procedures

A decontamination area will be established for cleaning the drilling equipment and soil sampling equipment. All down-hole drilling equipment will be steam-cleaned or hot water pressure-washed prior to beginning drilling and between drilling each boring. Spoons and other sampling equipment that will contact the soil samples will be decontaminated prior to initial use, between sampling locations, and between different sampling depths at the same location. Soil and sediment sampling equipment will be decontaminated by steam cleaning, hot water pressure washing, or by the following procedure:

- Tap water rinse
- Non-phosphatic detergent (Liquinox) and tap water wash
- Tap water rinse
- Distilled water rinse (three times)
- Store in clean, closed container for next use.

Polyethylene tubing will be dedicated to each well. The water level probe will be rinsed with distilled water between uses in different monitoring wells.

7.6 Residuals Management

The soil generated by the drilling activities, the solids generated by the cleaning of the stormwater catch basins on Parcel D, and the wastewater generated by the cleaning of the drilling and sampling equipment, the development and purging of the wells, and the sampling of the catch basins will be temporarily stored at the 8th Avenue Terminals property in properly labeled 55-gallon drums. After obtaining the sample analytical results, the soil, solids, and water will be transported offsite for disposal at licensed facilities.

7.7 Field Quality Assurance

As described in the QAPP (see Appendix D), field QA will be maintained through compliance with the sampling plan, collection of field QA samples, and documentation of sampling plan alterations.

Duplicate soil, catch basin solids, sediment, and groundwater samples will be collected at a minimum frequency of one duplicate sample per 10 samples. Duplicate samples will be labeled similar to the other samples and submitted blind to the laboratory. The locations for duplicate sample collection will be determined in the field.

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Tables

TABLE 1: DATA GAPS SUMMARY
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Investigation Area	COPCs	Currently Known or Ecology Identified Data Gaps
Former Concrete Production Area - Sections 3.1.1 and 5.1.2	Soil: PAHs, BEHP, DRO, HO, Benzene, Xylenes, PCBs, As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, and Zn Groundwater: PAHs, DRO, HO, PCE, Sb, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn	• Industrial activities performed at this location from approximately the 1920s through the 1980s and the full extent of the activities and associated environmental impacts are not well understood.
		• A 5,000-gallon fuel oil UST on Parcel F may not have been removed, and there is insufficient information on residual hydrocarbon impacts from storage and use of hydrocarbon. Conduct an electromagnetic (EM) survey of the former tank location. Additional characterization of former UST is needed.
		• No soil quality data near western and southern equipment washwater collection sumps, and no groundwater quality data near the southern collection sump.
		• Possible dry wells and potential impacts from pH adjustment chemicals.
		• Gasoline UST removed in 1988, but surrounding soil was not adequately characterized.
		• Releases of petroleum hydrocarbon compounds (including PAHs) at former dry kilns, eastern former container repair shop, western former container repair shop, former gasoline UST, former aluminum window manufacturing, existing canopy, and the former excelsior factory and press.
		• Elevated metal concentrations (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, and Zn) detected in multiple borings over a wide area, possibly due to leaching of metals from increased pH conditions in soil.
		• Elevated PCB concentrations (Aroclor 1248) in Parcel F possibly associated with the former drying kiln building or transformers used in the area.
		• The type of chromium present in soils and groundwater is unknown. In some locations, concentrations exceed preliminary screening levels.
		• Additional characterization is required based on the distribution of COPCs exceeding preliminary screening levels, including PAHs, BEHP, DRO, HO, benzene, xylenes, PCBs, As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, and Zn.
		• The lateral and vertical extent of soil and groundwater COPC concentrations is not adequately defined. Further characterization is needed to define the area and extent of impacts.
Former Aluminum Manufacturing Operation - Sections 3.1.2 and 5.1.3	Soil: PAHs, Benzene, HO, Ba, Cd, Pb, Hg, and Se Groundwater: PAHs, DRO, HO, PCE, Sb, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn	• Industrial activities were performed at this location from approximately the 1940s through the 1970s, and the full extent of the activities and associated environmental impacts are not well understood.
		• Former diesel UST located along the northern end of the former building resulted in releases to soil and groundwater. Residual soils contain petroleum hydrocarbon compounds (including PAHs), metals, and VOCs. Additional characterization is needed.
		• Former activities associated with the aluminum window manufacturing operation resulted in releases of hydrocarbons, VOCs, and metals. Impacts to soil and groundwater have not been fully characterized.
		• An elevated PCE concentration in groundwater at SLR-6 may indicate a prior release at the aluminum window manufacturing building.

TABLE 1: DATA GAPS SUMMARY
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Investigation Area	COPCs	Currently Known or Ecology Identified Data Gaps
Former Aluminum Manufacturing Operation - Sections 3.1.2 and 5.1.3 (continued)		• Additional characterization is required based on the distribution of soil COPCs exceeding preliminary screening levels.
		• Additional characterization is required to delineate the lateral and vertical extent of soil and groundwater COPC concentrations.
Former Sawmill, Excelsior Factory and Press Area - Sections 3.1.3 and 5.1.4	Soil: PAHs, PCBs, As, Ba, Cd, Cu, Hg, Pb, Zn, HO, DRO, dioxins, and furans Groundwater: PAHs, DRO, HO, PCE, Sb, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn	• Industrial activities were performed at this location from approximately 1917 through the 1970s, and the full extent of the activities and associated environmental impacts are not well understood.
		• Potential widespread use and storage of lubricating oils/hydraulic oils and spreading/burial of ash from the chimney, boiler house, and refuse burner.
		• Lack of soil and groundwater data beneath the former sawmill, excelsior factory, and press buildings
		• Former oil AST located along the northwestern part of the warehouse building.
		• Potential impacts to soil from pole-mounted transformers have not been fully characterized.
		• Elevated PAH concentrations in former treated pole storage area, former excelsior factory and press operations, and wood treating operations have not been fully characterized.
		• The extent of elevated concentrations of As in soil at and around the former sawmill have not been fully characterized.
		• Impacts from activities, such as wood and refuse burning, and the accumulation and burial of ash may be a source of dioxins and/or furans, which have not been investigated in the area.
		• Additional characterization is required based on the distribution of soil COPCs exceeding preliminary screening levels.
		• Additional characterization is required to delineate the lateral and vertical extent of soil and groundwater COPC concentrations.
Former Wood Treating Operations - Section 3.1.4 and 5.1.5	Soil: PAHs, BEHP, 2-methylphenol, 2,4-dimethylphenol, ethylbenzene, pentachlorophenol, phenol, xylenes, PCBs, As, Cd, Cr, Cu, Pb, Zn, GRO, DRO, HO, dioxins, and furans Groundwater: PAHs, DRO, HO, PCE, Sb, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn	• Industrial activities were performed at this location from approximately the 1940s through 1957, and the full extent of the activities and associated environmental impacts are not well understood.
		• Former wood treating activities (i.e., tanks, pole dipping operation, drying areas), which likely used hydrocarbon compounds (creosote) to treat wood products.
		• Former boiler operation and spreading/burial of ash.
		• Samples collected over 20 years ago and may not be representative of current site conditions.
		• Elevated PAH concentrations previously identified near former pole dipping tanks and treated pole storage area.
		• Elevated metals (As, Cr, and Pb) concentrations in wood treating operations area.

TABLE 1: DATA GAPS SUMMARY
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Investigation Area	COPCs	Currently Known or Ecology Identified Data Gaps
Former Wood Treating Operations - Section 3.1.4 and 5.1.5 continued		• Buried ash or buried debris may be present. Wood burning and the accumulation and burial of ash may be sources of dioxins and furans, which have not been investigated in the area. • The type of chromium present in soils and groundwater is unknown. In some locations, concentrations exceed preliminary screening levels. • Additional characterization is required based on the distribution of soil COPCs exceeding preliminary screening levels. • Additional characterization is required to delineate the lateral and vertical extent of soil and groundwater COPC concentrations.
Former Pipe and Chain Manufacturing Area - Sections 3.1.5 and 5.1.6	Soil: PAHs, phenol, 2-methylphenol, 4-methylphenol, 2,4-dimethylphenol, pentachlorophenol, di-n-butyl phthalate, acetone, chlorobenzene, ethylbenzene, xylenes, GRO, DRO, HO, PCBs, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Zn, dioxins, and furans Groundwater: PAHs, DRO, HO, PCE, Sb, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn	• Industrial activities were performed at this location from approximately 1918 through the 1970s, and the full extent of these activities and associated environmental impacts are not well understood. • Potential sources of COPCs include, but are not limited to, storage and use of hydrocarbon products and solvents, metal shavings and slag disposal, and spreading/burial of ash waste. • 1,000-gallon oil AST (likely heating oil) removed during late 1970s from eastern side of southern office building. • Elevated PAHs beneath former pipe manufacturing building, beneath chain manufacturing area, and north of pipe manufacturing building. • Elevated PCBs near former pipe and chain manufacturing buildings. • Buried ash or buried debris may be present. Wood burning and the accumulation and burial of ash may be sources of dioxins and furans, which have not been investigated in the area. • The type of chromium present in soils and groundwater is unknown. In some locations, concentrations exceed preliminary screening levels. • Additional characterization is required based on the distribution of COPCs exceeding preliminary screening levels. • Additional characterization is required to delineate the lateral and vertical extent of soil and groundwater COPC concentrations.

TABLE 1: DATA GAPS SUMMARY
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Investigation Area	COPCs	Currently Known or Ecology Identified Data Gaps
Dredge Fill Area and Other Filling - Sections 3.1.6 and 5.1.7	Soil: PAHs, PCBs, phenol, 2-methyl-phenol, 4-methyl-phenol, 2,4-di-methylphenol, pentachlorophenol, BEHP, butyl benzyl phthalate, di-n-butyl phthalate, acetone, chlorobenzene, ethylbenzene, xylenes, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Zn, GRO, DRO, and HO Groundwater: PAHs, DRO, HO, PCE, Sb, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn	• Industrial activities performed at site since 1917, and the full extent of possible fill placement activities is not well understood. Based available historical information for properties along the Duwamish, extensive filling activities are possible.
		• Cross-sections prepared for the site indicate that fill placement may extend to depths of nearly 20 feet below ground surface (bgs) at some locations.
		• Understanding the distribution of fill placement and the extent to which fill may serve as a source of COPC is needed.
		• No prior characterization of soils in the northern, southern, and eastern dredge fill areas and the northern sand and dredge fill area.
		• Characterization of groundwater quality in the northern dredge fill area has not been conducted.
		• The type of chromium present in soils and groundwater is unknown. In some locations, concentrations exceed preliminary screening levels.
		• Additional characterization is required based on the distribution of COPCs exceeding preliminary screening levels.
		• Additional characterization is required to delineate the lateral and vertical extent of soil and groundwater COPC concentrations
Groundwater - Sections 3.1.7 and 5.1.1	Groundwater: PAHs, DRO, HO, PCE, Sb, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn	• A complete characterization of groundwater conditions across the site is needed to define all possible migration pathways for COPC in groundwater. In particular, potential migration of COPC in groundwater to surface water and sediments in the Duwamish River is required.
		• Two areas of PAHs in groundwater near the former wood treatment areas to the seawall, and along the seawall near the southern sand and dredge fill area require additional characterization.
		• Elevated DRO and HO concentrations reported in 1994, but not in more recent samples. Additional sampling necessary to confirm attenuation and understand current site conditions.
		• Determine type of chromium present in groundwater.
		• Samples collected over 20 years ago, particularly for semivolatile hydrocarbon, phenol, and PAH concentrations, may not reflect current conditions.
		• Evaluation of background concentrations of As is necessary.
		• An evaluation of matrix interfence effects of brackish water on metals (As and Se) in groundwater is needed.
		• Analysis of metals concentrations in groundwater collected using low-flow sampling procedures is necessary.
		• Determine which soil COPCs have impacted groundwater.

TABLE 1: DATA GAPS SUMMARY
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Investigation Area	COPCs	Currently Known or Ecology Identified Data Gaps
Groundwater - Sections 3.1.7 and 5.1.1 continued		• An evaluation of potential impacts from groundwater discharge into Lower Duwamish Waterway should be conducted.
		• The potability of groundwater at the site should be evaluated.
		• An inspection of the shoreline and seawall for groundwater seeps should be conducted. Analysis of seep water samples is required to identify potential impacts.
		• An understanding of seasonal groundwater quality trends is necessary.
		• Evaluate tidal influence on groundwater flow, groundwater discharge, and groundwater quality.
		• Additional characterization is required based on the distribution of groundwater COPCs exceeding preliminary screening levels.
		• Additional characterization is required to delineate the lateral and vertical extent of groundwater COPC concentrations.
Stormwater Catch Basin Solids - Sections 3.2 and 5.1.1	Solids: PAHs, As, Cr, Pb, Zn, xylenes, BEHP, butyl benzyl phthalate, and dimethylphthalate Water: PAHs, DRO, HO, PCE, Sb, As, Ba, Cd, Cr, Cu, Pb, Hg, Ni, Se, and Zn	• Several Parcel D catch basins have been previously sampled and concentrations of one or more COPCs above the preliminary screening levels were reported.
		• Stormwater and catch basin sediments on Parcel D should be evaluated for potential impacts to waterway.
		• A video inspection of the Parcel D drainage system should be conducted to identify potential migration pathways.
		• Parcel F catch basin system was scheduled for drainage upgrade and replacement during summer 2012. Any findings should be reviewed and data gaps identified.
		• Sample and analyze stormwater sheet flow for potential impacts to the waterway.
Sediment Quality – Sections 3.3 and 5.1.8	PCBs and PAHs	• Limited sediment data for sediments at depth are available for Slip 4. Additional sediment quality data is necessary to determine if PCB and PAH impacted sediments in the Slip 4 and the Duwamish Waterway are due to sources at the 8th Avenue Terminal property.
Site-wide Soils – Section 5.1.1		• The type of chromium present in soils is unknown and should be identified.
		• Determine if buried ash or partially burned debris is present and if dioxins, furans, and/or metals are present in this debris.
		• Samples collected over 20 years ago, particularly for semivolatile hydrocarbon, phenol, and PAH concentrations, may not reflect current conditions.
		• The shoreline/seawall should be inspected for erosion, and eroding soils should be sampled and analyzed for potential impacts to the waterway.

TABLE 1: DATA GAPS SUMMARY
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Investigation Area	COPCs	Currently Known or Ecology Identified Data Gaps
Compliance and Due Diligence - Section 5.1.1		• Current tenants should be interviewed regarding onsite, barge, and other activities and operations impacting direct discharges to the waterway.
		• Assess spills, dumping, leaks, housekeeping, and implementation of best management practices.
		• Review compliance with Industrial Stormwater General Permit requirements.

Notes:

Ag = silver
As = arsenic
AST = aboveground storage tank
Ba = barium
BEHP = bis-2-ethylhexylphthalate
Cd = cadmium
COPC = contaminant of potential concern
Cr = chromium
Cu = copper
DRO = diesel-range organic hydrocarbons
GRO = gasoline-range organic hydrocarbons
Hg = mercury
HO = heavy oil range hydrocarbons
Ni = nickel
PAH = polycyclic aromatic hydrocarbon
Pb = lead
PCB = polychlorinated biphenyl
PCE = perchloroethene
Sb = antimony
Se = selenium
UST = underground storage tank
VOC = volatile organic compound
Zn = zinc

Section numbers refer to the sections of the remedial investigation/feasibility study (RI/FS) work plan where data gaps are discussed.

TABLE 2: SOIL SAMPLING AREAS, ANALYSES, AND SAMPLE DEPTHS
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Location ID	Minimum Approximate Boring Depth (feet bgs) [a]	Potential Source Areas of Interest / Data Gap Area [b]										COPCs / Analytical Tests [c]								Approximate Soil Sampling Depths (feet bgs) [d, e, f] (X=Analyze Sample for Listed Analytes; A=Archive Sample for Possible Follow-up Analysis)									Location ID	Data Gaps Addressed / Rationale
		Shoreline Areas	Former Wood Treatment Areas	Dredge and Sand Fill Areas	Former Sawmill and Excelsior Areas	Former Aluminum Window Manufacturing Area	Former Pipe and Chain Manufacturing Areas	Former Concrete Products Manufacturing and Storage Areas	Former UST/AST Areas	Areas with Limited Previous Data (Sitewide)	Limited Geologic Data at Depth	Metals (priority pollutant + Ba)	SVOCs (full list including PAHs)	PCBs	TPH (Diesel, Oil)	TPH (Gasoline)	VOCs	Dioxins/Furans	Cr^{6+}	1	2.5	5	7.5	10	12.5	15	20	25+ collect every 5 feet		
Soil Borings																														
EB-01	20					X		X	X			X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-01**	Evaluation of area with TPH impacts at former window manufacturing and concrete manufacturing areas; TPH in SLR-5; field observations (odor/sheen) in SLR-5 and SB-11.
EB-02	20							X	X			X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-02**	Evaluation of northwestern portion of former concrete manufacturing and storage area; possible PCB impacts in SS-5 area; near former fuel oil UST area (UST status unknown).
EB-03	20							X	X			X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-03**	Evaluation of northwestern portion of former concrete manufacturing and storage area; possible PCB impacts in SS-5 area; near former fuel oil UST area (UST status unknown).
EB-04	20							X	X			X	X	X	X	X	X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-04**	Evaluation of former gasoline UST area and general area of TPH impacts; limited data from gasoline UST closure; cPAHs, Ba in SB-10.
EB-05	20							X	X			X	X	X	X	X	X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-05**	Evaluation of former gasoline UST area and general area of TPH impacts; limited data from gasoline UST closure; cPAHs, Ba in SB-10.
EB-06	20							X	X			X	X	X	X	X	X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-06**	Evaluation of former gasoline UST area and general area of TPH impacts; evaluation of eastern property boundary; cPAHs, Ba in SB-9.
EB-07	20					X			X			X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	X	A		**EB-07**	Evaluation of area west of former aluminum window manufacturing plant; evaluation of former diesel UST area; cPAHs, Ba in SB-9; cPAHs, TPH in TP100810.
EB-08	50					X			X		X	X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	X	A	A	**EB-08**	Evaluation of area west of former aluminum window manufacturing plant; evaluation of former diesel UST area; cPAHs, TPH in TP100810; evaluation of lithologic conditions at greater depth.
EB-09	20					X		X	X			X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-09**	Evaluation of area with TPH impacts at former window manufacturing and concrete manufacturing areas; oil staining noted in SB-8; Ba in SB-8; cPAHs, Ba in SB-9.
EB-10	20									X		X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-10**	Evaluation of area with limited previous data; Ba in CMW-1.
EB-11	20		X							X		X	X	X	X		X	X	x[h]	X	A	X	A	X	A	A	A		**EB-11**	Evaluation of former raw wood storage area associated with wood treatment area; located in area of limited previous data; proximity to former refuse burner.
EB-12	20	X								X		X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-12**	Evaluation of shoreline areas and exposure pathways to Duwamish Waterway; area with previous limited previous data; Ba in CMW-1, -2a.
EB-13	20				X	X			X			X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-13**	Additional evaluation of former oil AST associated with excelsior manufacturing warehouse.
EB-14	20				X							X	X	X	X		X	X	x[h]	X	A	X	A	X	A	A	A		**EB-14**	Additional evaluation of former Excelsior factory and press area; near former chimney structure; area of limited previous data.
EB-15	20				X							X	X	X	X		X	X	x[h]	X	A	X	A	X	A	A	A		**EB-15**	Former pole-mounted transformer location; additional evaluation of former Excelsior factory and press area; near former chimney structure.
EB-16	50							X			X	X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A	A	**EB-16**	Evaluation of soil in proximity to equipment wash water collection sumps associated with former concrete products manufacturing; Ba in SB-5, -6; evaluation of lithologic conditions at greater depth.
EB-17	20							X				X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-17**	Evaluation of soil in proximity to equipment wash water collection sumps associated with former concrete products manufacturing; Ba in SB-3, -4, -6.
EB-18	20							X				X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-18**	Evaluation of area where TPH staining and odor was noted in boring logs; Ba in SB-1, -3, -4, -6.
EB-19	20							X		X		X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-19**	Evaluation of area with limited previous data.
EB-20	50		X								X	X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	X	A	A	**EB-20**	Additional evaluation of former wood treatment area; proximity to former garage and boiler; As in HC-1, -1A, -10; PCBs in HC-1/S-1; evaluation of lithologic conditions at greater depth.
EB-21	20		X							X		X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-21**	Additional evaluation of former wood treatment area; evaluation of western property boundary; As in multiple borings to east; cPAHs in DB-2, -11; PCBs in HC-1/S-1.
EB-22	20		X							X		X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-22**	Evaluation of former treated wood storage area; area with limited previous data.
EB-23	20		X							X		X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-23**	Evaluation of former treated wood storage area; area with limited previous data; Ba in SB-2.
EB-24	20		X		X					X		X	X	X	X		X	x[g]	x[h]	X	A	X	A	X	A	A	A		**EB-24**	Evaluation of former treated wood and raw wood storage areas; area with limited previous data.
EB-25	20		X							X		X	X	X	X		X	X	x[h]	X	A	X	A	X	A	A	A		**EB-25**	Evaluation of former raw wood storage area associated with wood treatment area; area of limited previous data; As and cPAHs in DB-10; Ba in SB-7.
EB-26	50				X						X	X	X	X	X		X	X	x[h]	X	A	X	A	X	A	A	A	A	**EB-26**	Evaluation of raw wood storage area; proximity to former chimney structure; odor/staining noted in boring SB-7; As and cPAHs in DB-10; Ba in SB-7; evaluation of lithologic conditions at greater depth.
EB-27	20			X	X					X		X	X	X	X		X	X	x[h]	X	A	X	A	X	A	A	A		**EB-27**	Proximity to known fill area; area of limited previous data; proximity to former refuse burner location.

TABLE 2: SOIL SAMPLING AREAS, ANALYSES, AND SAMPLE DEPTHS
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Location ID	Minimum Approximate Boring Depth (feet bgs) [(a)]	Potential Source Areas of Interest / Data Gap Area [(b)]: Shoreline Areas	Former Wood Treatment Areas	Dredge and Sand Fill Areas	Former Sawmill and Excelsior Areas	Former Aluminum Window Manufacturing Area	Former Pipe and Chain Manufacturing Areas	Former Concrete Products Manufacturing and Storage Areas	Former UST/AST Areas	Areas with Limited Previous Data (Sitewide)	Limited Geologic Data at Depth	COPCs / Analytical Tests [(c)]: Metals (priority pollutant + Ba)	SVOCs (full list including PAHs)	PCBs	TPH (Diesel, Oil)	TPH (Gasoline)	VOCs	Dioxins/Furans	Cr^{6+}	Approximate Soil Sampling Depths (feet bgs) [(d, e, f)] (X=Analyze Sample for Listed Analytes; A=Archive Sample for Possible Follow-up Analysis): 1	2.5	5	7.5	10	12.5	15	20	25+ collect every 5 feet	Location ID	Data Gaps Addressed / Rationale
Soil Borings, continued																														
EB-28	20			X	X					X		X	X	X	X		X	X	X[(h)]	X	A	X	A	X	A	A	A		**EB-28**	Additional evaluation of former sawmill and known dredge fill area; located within an area of limited previous data.
EB-29	20			X	X					X		X	X	X	X		X	X	X[(h)]	X	A	X	A	X	A	A	A		**EB-29**	Evaluation of former boiler house associated with former sawmill; evaluation of extent of dredge fill; located in an area of limited previous data; As, Ba, cPAHs in CMW-3.
EB-30	20											X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	X	A		**EB-30**	Evaluation of shoreline areas and exposure pathways to Duwamish Waterway; chemical odor noted in boring CMW-3; As, Ba, cPAHs in CMW-3.
EB-31	20	X								X		X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-31**	Evaluation of shoreline areas and exposure pathways to Duwamish Waterway.
EB-32	20		X				X					X	X	X	X	X	X	X[(g)]	X[(h)]	X	A	X	A	X	A	X	A		**EB-32**	Proximity to former oil tank vault and garage; downgradient from former creosote tanks; As, cPAHs in HC-103.
EB-33	20		X							X		X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	X	A		**EB-33**	Evaluation of former wood treatment area; proximity to former creosote tank location; evaluation of western property boundary; As in HC-13, -14, -17; cPAHs in DB-2, -11, -12; PCBs in DB-11, -12; TPH in DB-11.
EB-34	20		X									X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	X	A		**EB-34**	Evaluation of former treated wood storage area; proximity to former boiler location; As in DB-2, HC-13, -14; Pb in DB-11; cPAHs in DB-2, -11; PCBs and TPH in DB-11.
EB-35	20		X							X		X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-35**	Evaluation of former treated wood storage area; As in HC-10; Pb, PCBs, TPH in DB-11; cPAHs in DB-8, -9, -11.
EB-36	20		X						X			X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	X	A		**EB-36**	Evaluation of former treated wood storage area; proximity to former creosote tank location; As in DB-2, HC-16 , -17; Pb in DB-11; cPAHs in DB-2, -11, -12; PCBs in DB-11, -12; TPH in DB-11.
EB-37	20		X		X							X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-37**	Evaluation of former treated wood storage area and former sawmill area; cPAHs in HC-102.
EB-38	20		X		X							X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-38**	Additional evaluation of former sawmill and treated pole storage area; area of limited previous data.
EB-39	20			X			X					X	X	X	X		X	X	X[(h)]	X	A	X	A	X	A	A	A		**EB-39**	Evaluation of dredge fill area; additional data for former pipe manufacturing area; proximity to former incinerator; As and cPAHs in HC-107, DB-5, -7; THP in DB-5, -13.
EB-40	20						X		X			X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-40**	Evaluation of former oil tank vault area associated with former pipe manufacturing; cPAHs in HC-103, 110.
EB-41	20						X					X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	X	A		**EB-41**	Evaluation of area around western end of former pipe manufacturing building; As, cPAHs in HC-103, -104, -106, DB-6; Pb, PCBs, TPH in DB-6.
EB-42	20			X			X					X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-42**	Additional evaluation of former pipe manufacturing area; As, cPAHs in HC-104, -107, DB-6; Pb and PCBs in DB-6; TPH in DB-6, -13.
EB-43	50						X				X	X	X	X	X		X	X	X[(h)]	X	A	X	A	X	A	X	A	A	**EB-43**	Additional evaluation of former pipe manufacturing area; proximity to former incinerator; As, cPAHs in Db-5, HC-107; TPH in DB-5, -13; evaluation of lithologic conditions at greater depth.
EB-44	20			X						X		X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-44**	Area with limited previous data; proximity to suspected fill areas; As, cPAHs, TPH in DB-5.
EB-45	20			X						X		X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-45**	Evaluation of known dredge fill area; located in area of limited previous data; As, Ba, cPAHs in CMW-3, -4.
EB-46	20			X			X					X	X	X	X		X	X	X[(h)]	X	A	X	A	X	A	A	A		**EB-46**	Evaluation of dredge fill area; additional data for former pipe manufacturing area; proximity to former incinerator; As in HC-107, DB-7, CMW-5; Pb, Ba in DB-7; cPAHs in HC-107, DB-7.
EB-47	20						X					X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-47**	Evaluation of area around western end of former pipe manufacturing building; As, cPAHs in DB-6, HC-106; Pb, PCBs, TPH in DB-6.
EB-48	20						X					X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-48**	Evaluation of area around western end of former pipe manufacturing building; As in HC-106; Pb in DB-4; cPAHs in DB-4, HC-106, -110.
EB-49	50						X				X	X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	X	A	A	**EB-49**	Evaluation of former pipe coating and manufacturing area and pipe drying skid area; proximity to former oil tank vault; Pb in DB-4; cPAHs in DB-4, HC-105, -110; evaluation of lithologic conditions at greater depth.
EB-50	20						X					X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-50**	Evaluation of former sandblasting area and former pipe dipping shop area; As, Ba, in CMW-5.
EB-51	20						X					X	X	X	X		X	X[(g)]	X[(h)]	X	A	X	A	X	A	A	A		**EB-51**	Evaluation of former pipe dipping shop area and former blacksmith shop area; As, Ba, cPAHs in CMW-6.
EB-52	20	X					X					X	X	X	X	X	X	X[(g)]	X[(h)]	X	A	X	A	X	A	X	A		**EB-52**	Evaluation of former pipe coating and manufacturing area; evaluation of shoreline area; evaluation of area with chemical odor in previous boring (CMW-7); As, Ba, cPAHs, PCBs, TPH in CMW-7.
EB-53	20	X					X					X	X	X	X		X	X	X[(h)]	X	A	X	A	X	A	X	A		**EB-53**	Evaluation of shoreline area; proximity to former incinerator; As in DB-7 and CMW-5; Pb, cPAHs in DB-7; Ba in CMW-5.
EB-54	20	X		X			X					X	X	X	X		X	X	X[(h)]	X	A	X	A	X	A	X	A		**EB-54**	Evaluation of former pipe manufacturing and dipping area, west of manufacturing building and incinerator building; area of limited previous data; proximity to dredge fill areas; proximity to former incinerator; As, Ba, cPAHs in DB-7, CMW-4; Pb in DB-7.

TABLE 2: SOIL SAMPLING AREAS, ANALYSES, AND SAMPLE DEPTHS
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Location ID	Minimum Approximate Boring Depth (feet bgs) (a)	Potential Source Areas of Interest / Data Gap Area (b)										COPCs / Analytical Tests (c)								Approximate Soil Sampling Depths (feet bgs) (d, e, f) X=Analyze Sample for Listed Analytes A=Archive Sample for Possible Follow-up Analysis									Location ID	Data Gaps Addressed / Rationale
		Shoreline Areas	Former Wood Treatment Areas	Dredge and Sand Fill Areas	Former Sawmill and Excelsior Areas	Former Aluminum Window Manufacturing Area	Former Pipe and Chain Manufacturing Areas	Former Concrete Products Manufacturing and Storage Areas	Former UST/AST Areas	Areas with Limited Previous Data (Sitewide)	Limited Geologic Data at Depth	Metals (priority pollutant + Ba)	SVOCs (full list including PAHs)	PCBs	TPH (Diesel, Oil)	TPH (Gasoline)	VOCs	Dioxins/Furans	Cr^{6+}	1	2.5	5	7.5	10	12.5	15	20	25+ collect every 5 feet		
Monitoring Well Borings																														
EMW-1S	20							X		X		X	X	X	X		X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	A	A		**EMW-1S**	Evaluation of area with limited previous data (northern property boundary); background well location.
EMW-2S	20	X				X		X	X			X	X	X	X	X	X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	A	A		**EMW-2S**	Evaluation of former concrete and aluminum window manufacturing areas; proximity to former UST areas; evaluation of eastern property boundary; Ba, cPAHs in SB-9.
EMW-3S	20	X				X						X	X	X	X		X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	X	A		**EMW-3S**	Evaluation of shoreline areas and exposure pathways to Duwamish Waterway; Ba in CMW-1.
EMW-4D	50	X		X							X	X	X	X	X		X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	A	A	A	**EMW-4D**	Evaluation of known dredge fill area; evaluation of shoreline areas and exposure pathways to Duwamish Waterway; Ba in CMW-1; evaluation of lithologic and groundwater conditions at greater depth.
EMW-5S	20				X							X	X	X	X		X	X	$x^{(h)}$	X	A	X	A	X	A	A	A		**EMW-5S**	Evaluation or area around former Excelsior factory and press structures; proximity to former chimney.
EMW-6S	20		X					X		X		X	X	X	X		X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	A	A		**EMW-6S**	Evaluation of former concrete storage area; proximity to former wood treatment area; area with limited previous data; Ba in SB-1, -5.
EMW-7S	20				X			X		X		X	X	X	X		X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	A	A		**EMW-7S**	Evaluation of area west of former concrete products storage area; located in area with limited previous data (western property boundary); background well location.
EMW-8S	20		X		X					X		X	X	X	X		X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	A	A		**EMW-8S**	Evaluation of former wood treatment and sawmill areas; area with limited previous data.
EMW-9S	20			X	X					X		X	X	X	X		X	X	$x^{(h)}$	X	A	X	A	X	A	A	A		**EMW-9S**	Evaluation of known dredge fill area and former sawmill area; located near (west of) former treated pole storage area; proximity to former refuse burner; area of limited previous data.
EMW-10D	50		X						X		X	X	X	X	X		X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	X	A	A	**EMW-10D**	Evaluation of former wood treatment areas; proximity to former creosote tanks; As, cPAHs in DB-3; evaluation of lithologic and groundwater conditions at greater depth.
EMW-11S	20		X				X			X		X	X	X	X		X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	A	A		**EMW-11S**	Evaluation of area with limited previous data (western property boundary); background well location.
EMW-12S	20	X					X			X		X	X	X	X	X	X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	X	A		**EMW-12S**	Evaluation of former chain coating/manufacturing building and former equipment maintenance shop; area of limited previous data along western property boundary; proximity to shoreline; cPAHs in HC-105.
EMW-13S	20	X					X				X	X	X	X	X	X	X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	A	A		**EMW-13S**	Evaluation of former chain coating/manufacturing building and former equipment maintenance shop; evaluation of shoreline areas and exposure pathways to Duwamish Waterway; As, Ba, cPAHs, PCBs, TPH in CMW-7; As, Ba, cPAHs in CMW-6.
EMW-14D	50	X		X			X				X	X	X	X	X		X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	A	A	A	**EMW-14D**	Additional evaluation of pipe and chain manufacturing area; evaluation of shoreline areas and exposure pathways to Duwamish Waterway; As, Ba, cPAHs in CMW-6; evaluation of lithologic and groundwater conditions at greater depth.
EMW-15D	50	X										X	X	X	X		X	$x^{(g)}$	$x^{(h)}$	X	A	X	A	X	A	A	A	A	**EMW-15D**	Additional evaluation of pipe and chain manufacturing area; proximity to dredge fill areas; evaluation of shoreline areas and exposure pathways to Duwamish Waterway; As, Ba, cPAHs in CMW-4.

Notes:

(a) Indicated boring depths are minimum depths. Boring will be advanced to greater depths, and additional samples collected, if field observations indicate potential COPC impacts at the initial bottom depth.

(b) Refer to the text and Table 1 for additional information regarding data gaps and previously identified potential source areas.

(c) Refer to the SAP (Section 7) and QAPP (Appendix D) for information regarding specific analytical methods, detection limits, and PQLs.

(d) Sample depths are based on the top of the sampling interval (maximum 1-foot interval). Sample interval may be modified based on field observations (i.e., listed depth may be the middle or bottom of the interval), but must include the indicated depth.

(e) Table shows the minimum number of samples to be collected at each boring. Additional samples will be collected and submitted for laboratory analysis if field observations indicate potential COPC impacts.

(f) Archived samples are to be submitted for laboratory analysis for any analytes detected in vertically adjacent samples at concentrations above laboratory detection limts. Refer to the text for additional information.

(g) If ash or burned or partially burned materials are observed in soil borings, these intervals will be sampled and submitted for analysis of dioxins and furans (in addition to the samples already designated for dioxin/furan analysis).

(h) The 10 soil samples with the highest total chromium concentrations will be submitted for analysis of hexavalent chromium (Cr^{6+}).

As= Arsenic
Ba= Barium
Pb= Lead
cPAHs= Carcinogenic Polycyclic Aromatic Hydrocarbons
PCBs= Polychlorinated Biphenyls
TPH= Total Petroleum Hydrocarbons

TABLE 3: GROUNDWATER AND SURFACE WATER SAMPLING SUMMARY
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Well Number	Zone	Shoreline Wells	New Wells	Wells to be Inspected[a]	COPCs / Analytical Tests[b]											
					Total and Dissolved Metals (priority pollutant + Ba)	SVOCs (full list) including PAHs	PCBs	TPH (Diesel, Oil)	TPH (Gasoline)	VOCs	Cr^{6+}	Total Suspended Solids	Total Dissolved Solids	Chloride	Total Organic Carbon	Dissolved Organic Carbon
Groundwater																
Quarterly Monitoring Events (4 Events)[c]																
CMW-1	shallow	X			X	X	X	X	X	X	x[d]	X	X	X		
CMW-2	shallow	X			X	X	X	X	X	X	x[d]	X	X	X		
CMW-3	shallow	X			X	X	X	X	X	X	x[d]	X	X	X		
CMW-4	shallow	X			X	X	X	X	X	X	x[d]	X	X	X		
CMW-5	shallow	X			X	X	X	X	X	X	x[d]	X	X	X		
CMW-6	shallow	X			X	X	X	X	X	X	x[d]	X	X	X		
CMW-7	shallow	X			X	X	X	X	X	X	x[d]	X	X	X		
CMW-1	shallow				X	X	X	X	X	X	x[d]	X	X	X		
SLR-1	shallow				X	X	X	X	X	X	x[d]	X	X	X		
SLR-2	shallow				X	X	X	X	X	X	x[d]	X	X	X		
SLR-3	shallow				X	X	X	X	X	X	x[d]	X	X	X		
SLR-6	shallow				X	X	X	X	X	X	x[d]	X	X	X		
SLR-7	shallow				X	X	X	X	X	X	x[d]	X	X	X		
DMW-2	shallow			X	X	X	X	X	X	X	x[d]	X	X	X		
DMW-3	shallow			X	X	X	X	X	X	X	x[d]	X	X	X		
DMW-6	shallow			X	X	X	X	X	X	X	x[d]	X	X	X		
HC-04	shallow			X	X	X	X	X	X	X	x[d]	X	X	X		
HC-19	shallow			X	X	X	X	X	X	X	x[d]	X	X	X		
HC-20	shallow			X	X	X	X	X	X	X	x[d]	X	X	X		
EMW-1S	shallow		X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-2S	shallow		X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-3S	shallow	X	X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-4D	deep	X	X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-5S	shallow		X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-6S	shallow		X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-7S	shallow		X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-8S	shallow		X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-9S	shallow		X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-10D	deep		X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-11S	shallow		X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-12S	shallow	X	X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-13S	shallow	X	X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-14D	deep	X	X		X	X	X	X	X	X	x[d]	X	X	X		
EMW-15D	deep	X	X		X	X	X	X	X	X	x[d]	X	X	X		

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7400 8th Avenue South, Seattle, Washington

Well Number	Zone	Shoreline Wells	New Wells	Wells to be Inspected[a]	COPCs / Analytical Tests[b]											
					Total and Dissolved Metals (priority pollutant + Ba)	SVOCs (full list) including PAHs	PCBs	TPH (Diesel, Oil)	TPH (Gasoline)	VOCs	Cr^{6+}	Total Suspended Solids	Total Dissolved Solids	Chloride	Total Organic Carbon	Dissolved Organic Carbon
Groundwater, continued																
High-High Tide Supplemental Monitoring Event (1 Event)[e]																
CMW-1	shallow	X			X							X	X	X		
CMW-2	shallow	X			X							X	X	X		
CMW-3	shallow	X			X							X	X	X		
CMW-4	shallow	X			X							X	X	X		
CMW-5	shallow	X			X							X	X	X		
CMW-6	shallow	X			X							X	X	X		
CMW-7	shallow	X			X							X	X	X		
CMW-1	shallow				X							X	X	X		
SLR-1	shallow				X							X	X	X		
SLR-2	shallow				X							X	X	X		
SLR-3	shallow				X							X	X	X		
SLR-6	shallow				X							X	X	X		
SLR-7	shallow				X							X	X	X		
DMW-2	shallow			X	X							X	X	X		
DMW-3	shallow			X	X							X	X	X		
DMW-6	shallow			X	X							X	X	X		
HC-04	shallow			X	X							X	X	X		
HC-19	shallow			X	X							X	X	X		
HC-20	shallow			X	X							X	X	X		
EMW-1S	shallow		X		X							X	X	X		
EMW-2S	shallow		X		X							X	X	X		
EMW-3S	shallow	X	X		X							X	X	X		
EMW-4D	deep	X	X		X							X	X	X		
EMW-5S	shallow		X		X							X	X	X		
EMW-6S	shallow		X		X							X	X	X		
EMW-7S	shallow		X		X							X	X	X		
EMW-8S	shallow		X		X							X	X	X		
EMW-9S	shallow		X		X							X	X	X		
EMW-10D	deep		X		X							X	X	X		
EMW-11S	shallow		X		X							X	X	X		
EMW-12S	shallow	X	X		X							X	X	X		
EMW-13S	shallow	X	X		X							X	X	X		
EMW-14D	deep	X	X		X							X	X	X		
EMW-15D	deep	X	X		X							X	X	X		

TABLE 3: GROUNDWATER AND SURFACE WATER SAMPLING SUMMARY
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Well Number	Zone	Shoreline Wells	New Wells	Wells to be Inspected[a]	COPCs / Analytical Tests[b]											
					Total and Dissolved Metals (priority pollutant + Ba)	SVOCs (full list) including PAHs	PCBs	TPH (Diesel, Oil)	TPH (Gasoline)	VOCs	Cr^{6+}	Total Suspended Solids	Total Dissolved Solids	Chloride	Total Organic Carbon	Dissolved Organic Carbon
Surface Water																
Storm Water Outfall Samples (5 events)[f]																
OF#1	Drainage Line #1 Outfall				X[g]	X	X	X	X	X		X		X	X	X
OF#2	Drainage Line #2 Outfall				X[g]	X	X	X	X	X		X		X	X	X
OF#3	Drainage Line #3 Outfall				X[g]	X	X	X	X	X		X		X	X	X
OF#4	Drainage Line #4 Outfall				X[g]	X	X	X	X	X		X		X	X	X
OF#5	Drainage Line #5 Outfall				X[g]	X	X	X	X	X		X		X	X	X
OF#6	Drainage Line #6 Outfall				X[g]	X	X	X	X	X		X		X	X	X
Seep Samples																
Seeps[h]	Seeps through Seawall and Bank Areas				X[g]	X	X	X	X	X		X		X	X	X

Notes:

(a) Existing monitoring wells to be inspected and redeveloped or replaced prior to the first sampling event.

(b) Refer to the SAP (Section 7) and QAPP (Appendix D) for information regarding analytical methods, detection limits, and PQLs.

(c) After the second quarterly monitoring event, some wells and/or analytes may be removed from the sampling program for the third and fourth quarters if COPCs are not detected, with approval from Ecology.

(d) Analysis for hexavalent chromium (Cr^{6+}) to be performed for the five samples with the highest total chromium concentrations for the first monitoring event.

(e) High-high tide supplemental monitoring event to be performed between the first and second quarterly monitoring events.

(f) Outfall locations are shown on SLR Figure 3 in Appendix A. First event to be performed prior to cleaning of catch basins and line inspection.

(g) Analysis for total metals only.

(h) Samples to be collected from any seeps identified along the sheet piling seawall and bank areas.

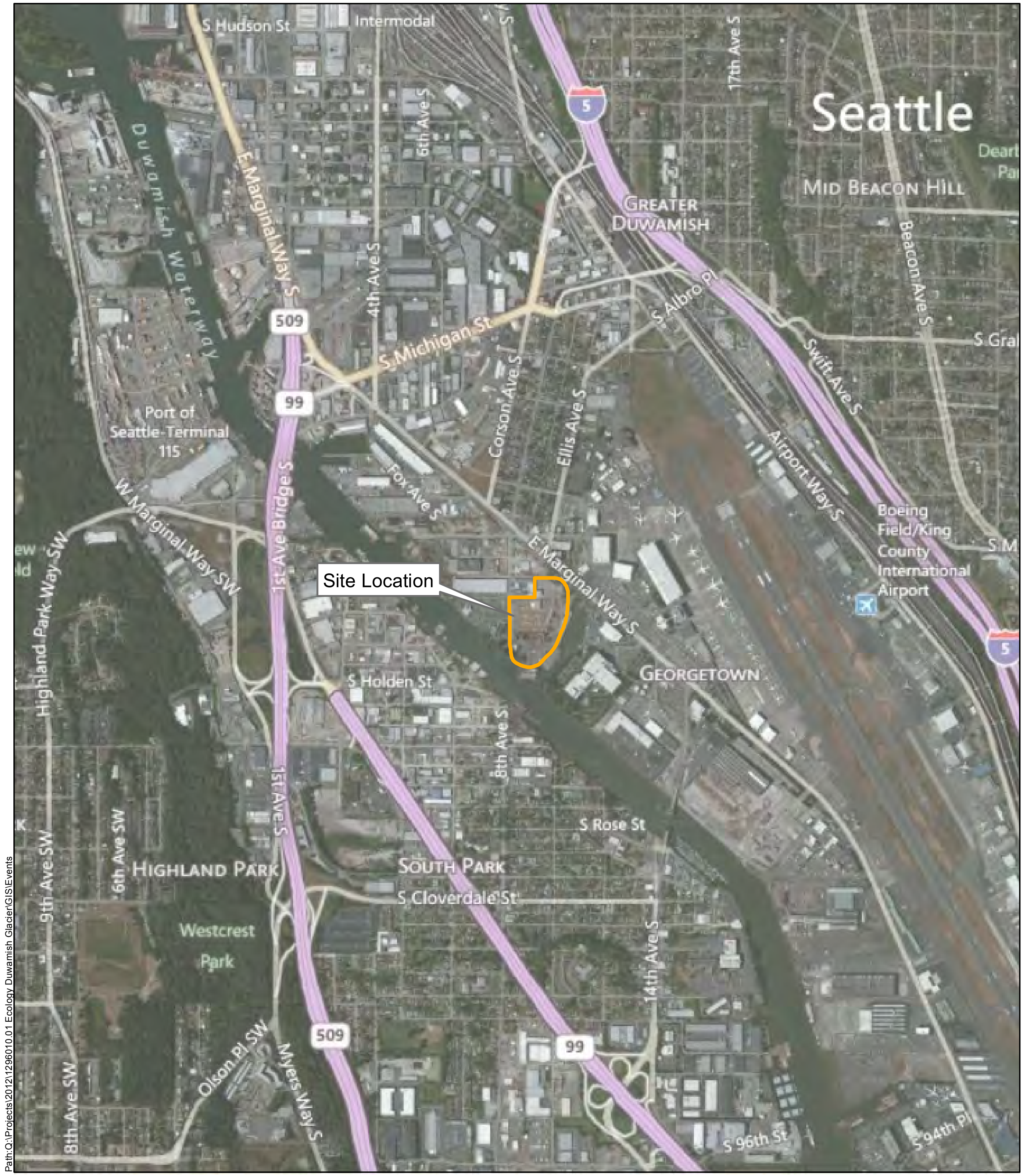
TABLE 4: CATCH BASIN SOLIDS AND SEDIMENT SAMPLING SUMMARY
REMEDIAL INVESTIGATION WORK PLAN
Crowley 8th Avenue Terminals Site
7400 8th Avenue South, Seattle, Washington

Location ID	Catch Basin ID[a]	Location Description	COPCs / Analytical Tests [b]								
			Metals (priority pollutant + Ba)	SVOCs (full list) including PAHs	PCBs	TPH (Diesel, Oil)	TPH (Gasoline)	VOCs	Dioxins/Furans	Grain Size	Total Organic Carbon
Catch Basin Solids											
Catch Basin Solids Sampling (2 Events)[c]											
D Line #1	DP1CB1	Southern property margin	X	X	X	X	X	X	x[d]	X	X
D Line #1	DP1CB4	Organic Fuel Processors / KRS	X	X	X	X	X	X	x[d]	X	X
D Line #2	DP2CB2	Organic Fuel Processors	X	X	X	X	X	X	x[d]	X	X
D Line #2	DP2CB5	First Student facility	X	X	X	X	X	X	x[d]	X	X
D Line #3	DP3CB1	Organic Fuel Processors / KRS	X	X	X	X	X	X	x[d]	X	X
D Line #3	DP3CB3	Organic Fuel Processors	X	X	X	X	X	X	x[d]	X	X
D Line #4	DP4CB2	Organic Fuel Processors	X	X	X	X	X	X	x[d]	X	X
D Line #4	DP4CB4	First Student facility	X	X	X	X	X	X	x[d]	X	X
D Line #5	DP5CB1	KRS Marine	X	X	X	X	X	X	x[d]	X	X
D Line #5	DP5CB4	KRS Marine	X	X	X	X	X	X	x[d]	X	X
D Line #6	DP6CB1	Organic Fuel Processors	X	X	X	X	X	X	x[d]	X	X
D Line #6	DP6CD4	First Student facility	X	X	X	X	X	X	x[d]	X	X
Parcel F[e]	CB on northern portion of Parcel F; to be determined		X	X	X	X	X	X	x[f]	X	X
Parcel F[e]	CB on southern portion of Parcel F; to be determined		X	X	X	X	X	X	x[f]	X	X
Sediment Samples											
Riprap Area Sediment Samples[g]											
Riprap Sediment Samples		Riprap bank	X	X	X	X			X[h]	X	X
Duwamish Waterway Sediment Sampling[i]											
Surface Sediment Samples		Duwamish Waterway	X	X	X	X			x[h]	X	X
Sediment Core Samples		Duwamish Waterway	X	X	X	X			x[h]	X	X

Notes:

(a) Catch basin locations are shown on SLR Figure 3 in Appendix A.
(b) Refer to the SAP (Section 7) and QAPP (Appendix D) for information regarding analytical methods, detection limits, and PQLs.
(c) First catch basin sampling event to be performed prior to cleaning Parcel D catch basins. Second catch basin sampling event to be performed a minimum of six months after Parcel D catch basin cleaning.
(d) Two samples from Parcel D catch basins to be submitted for analysis of dioxins/furans for each sampling event. Catch basins for dioxins/furans analysis to be identified by PLPs and approved by Ecology prior to each sampling event.
(e) Catch basins on Parcel F to be sampled only for the second catch basin sampling event.
(f) One sample from Parcel F catch basins to be submitted for analysis of dioxins/furans for the second sampling event. Parcel F catch basin for dioxins/furans analysis to be identified by PLPs and approved by Ecology prior to the second sampling event.
(g) Samples to be collected at the locations shown on Figure 13 (ends of pier and at stormwater outfall locations) and at the locations of any seeps identified along the sheet piling seawall.
(h) Analysis for dioxins/furans to be performed if dioxins/furans are detected in catch basin solids or riprap sediment samples.
(i) Approximate Duwamish Waterway sediment sampling locations are shown on Figure 13.

Figures



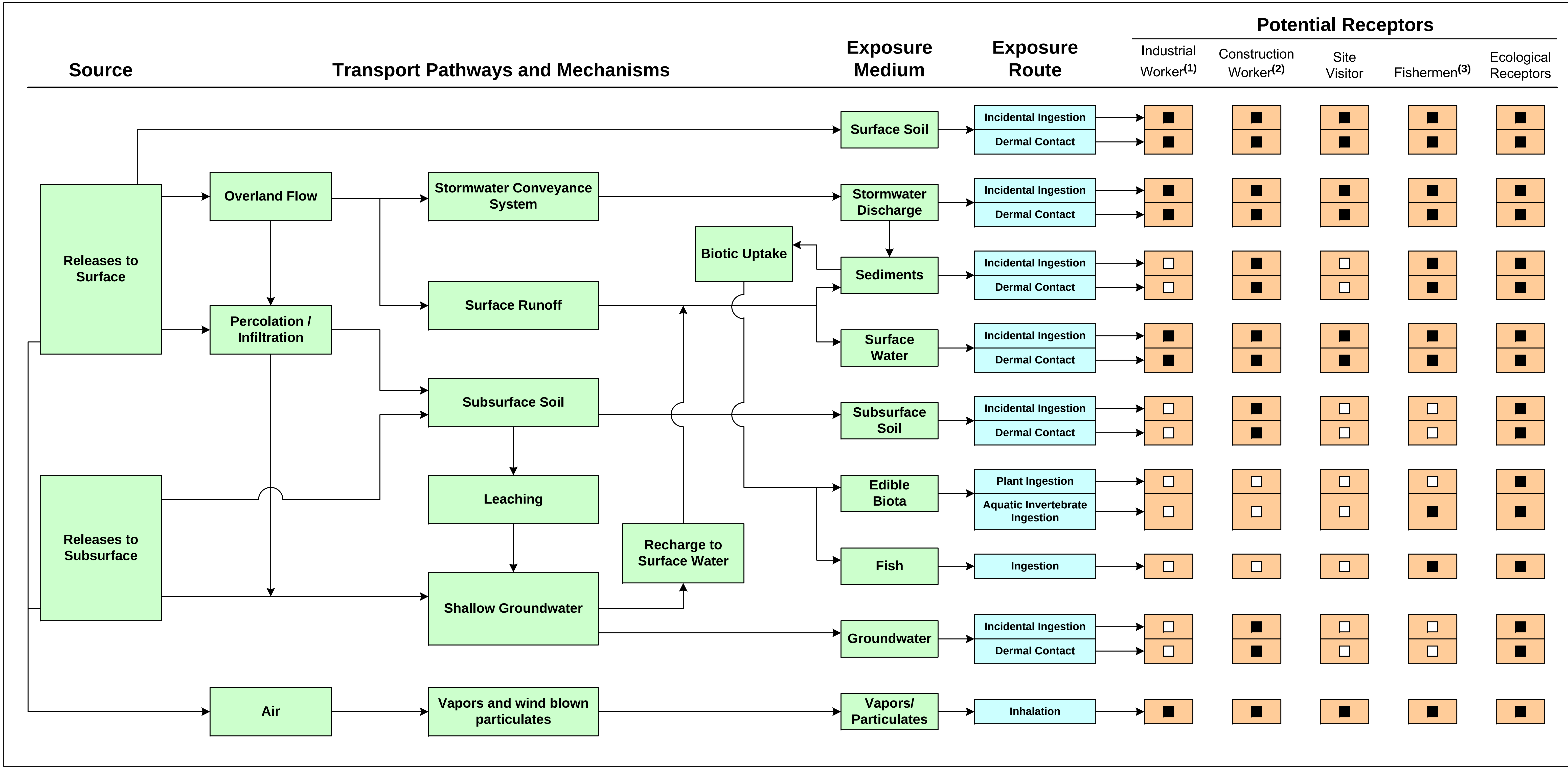
RI/FS Workplan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Site Location Map

October 2012

Figure 1



Legend:

■ Complete exposure pathway.

□ Potentially complete exposure pathway.

Notes:

1. On-site industrial workers and school bus drivers performing non-invasive activities.
2. On-site construction and/or industrial workers performing invasive activities.
3. Recreational and/or subsistence users.

Figure depicts a preliminary assessment of potential exposure pathways. All potential pathways are to be fully evaluated as part of the RI/FS.

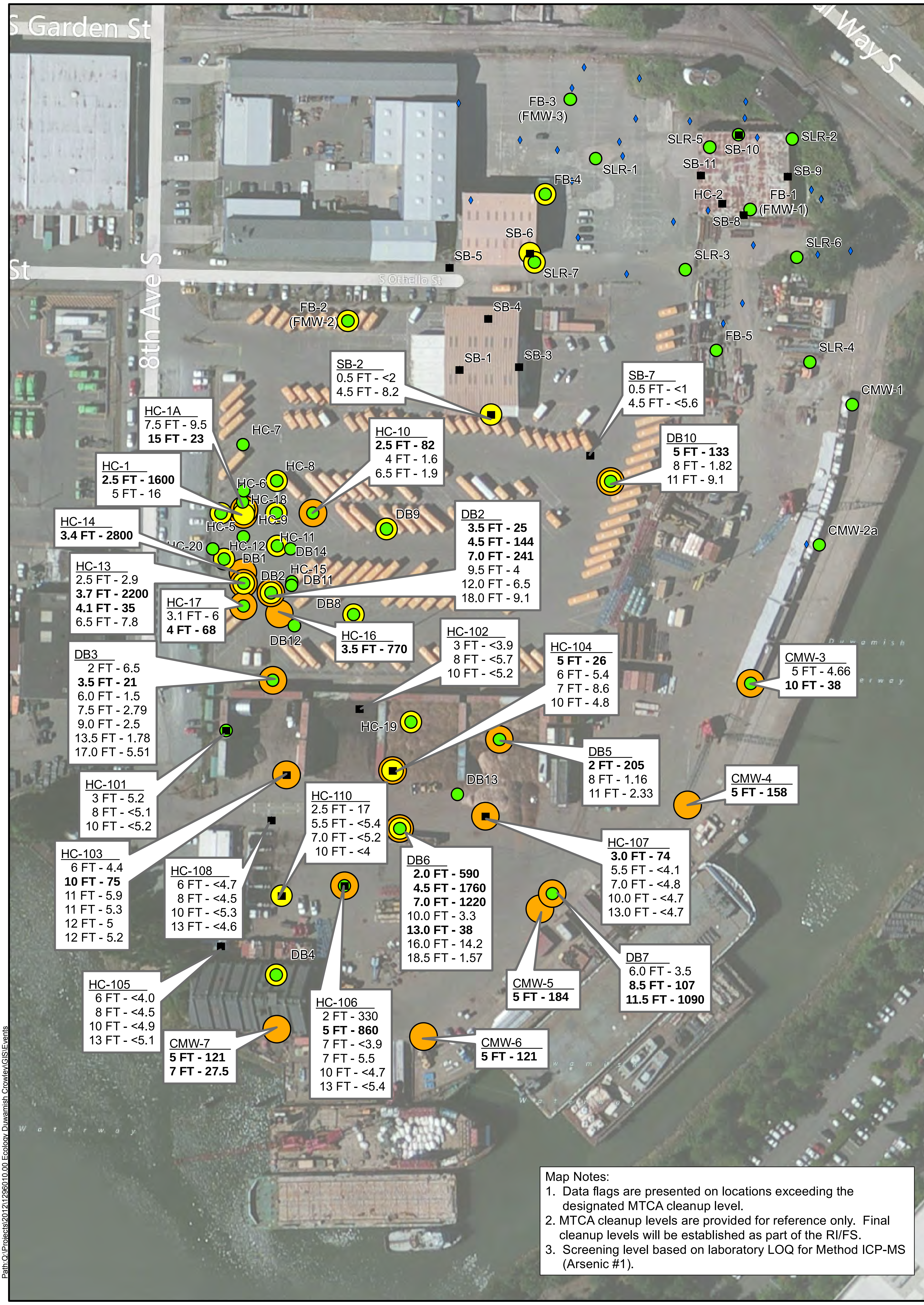
RI/FS Work Plan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Preliminary Conceptual Site Exposure Model

October 2012

Figure 2



Legend

- Non-Detect below Screening Level of 7 mg/kg
- Non-Detect above Screening Level of 7 mg/kg*
- Detection Below Screening Level of 7 mg/kg
- Detection Between Screening Level of 7 mg/kg and MTCA Method A Level of 20 mg/kg
- Detection Exceeds MTCA Method A Level of 20 mg/kg
- Station Locations

N

0 100 200

Scale: Feet

* Marker not used on this map as no data meets this criterion.

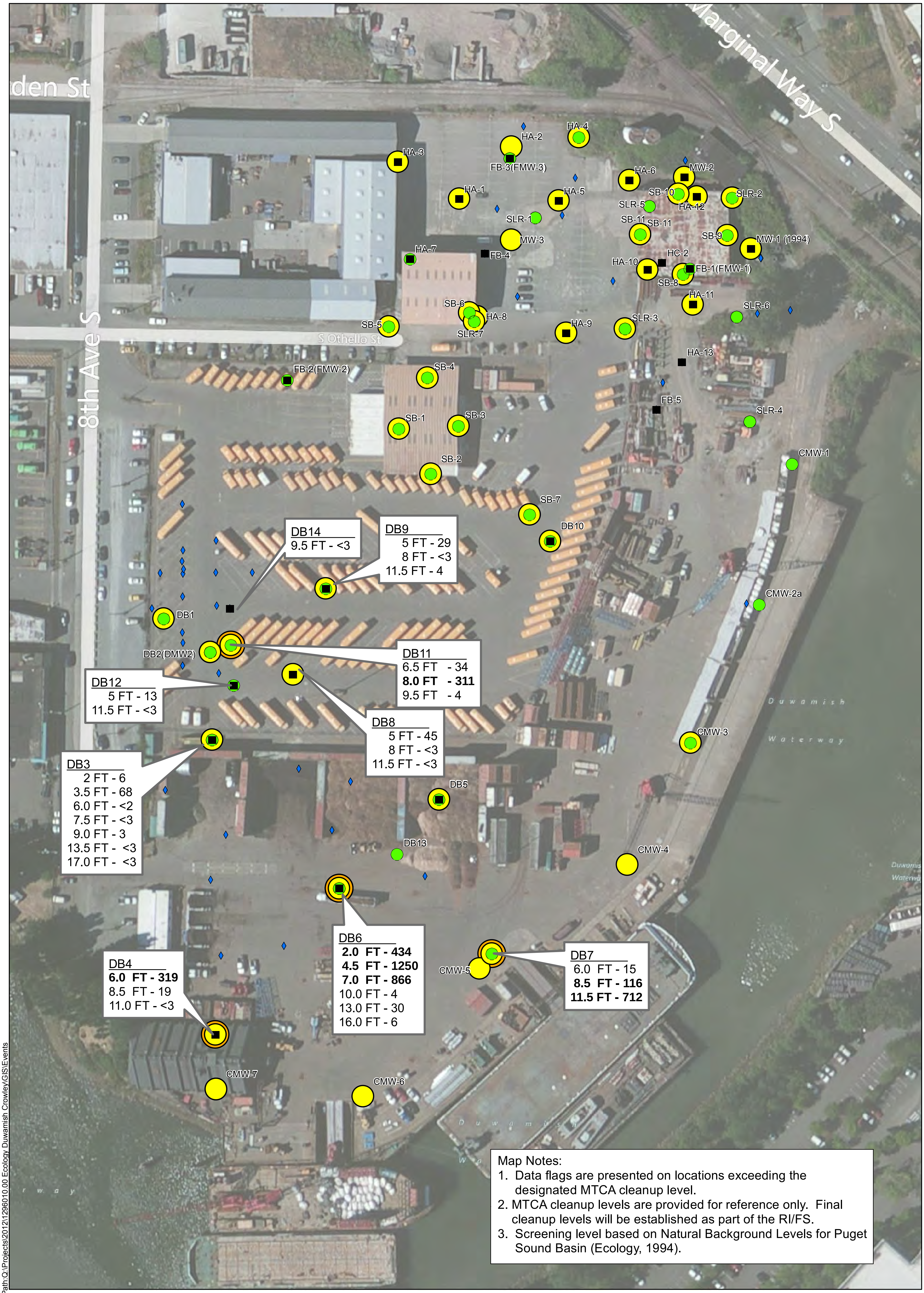
RI/FS Workplan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Distribution of Total Arsenic in Soil (mg/kg)

October 2012

Figure 3



Path:Q:\Projects\2012\1296010.00 Ecology Duwamish Crowley\GIS\Events

Legend

- Non-Detect Below Screening Level
- Non-Detect above Screening Level of 17 mg/kg*
- Detection Below Screening Level of 17 mg/kg
- Detection Between Screening Level of 17 mg/kg and MTCA Method A Level of 250 mg/kg
- Detection Exceeds MTCA Method A Level of 250 mg/kg
- Station Locations

* Marker not used on this map as no data meets this criterion.

N

0 100 200

Scale: Feet

RI/FS Workplan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Distribution of Total Lead in Soil (mg/kg)

October 2012

Figure 4

Legend

- Non-Detect below Screening Level of 5.04 mg/kg*
- Non-Detect above Screening Level of 5.04 mg/kg*
- Detection Below Screening Level of 5.04 mg/kg*
- Detection Between Screening Level of 5.04 mg/kg and MTCA Level of 23.1 mg/kg*
- Detection Exceeds the MTCA Method B Level of 23.1 mg/kg
- Station Locations

N

0 100 200

Scale: Feet

RI/FS Workplan

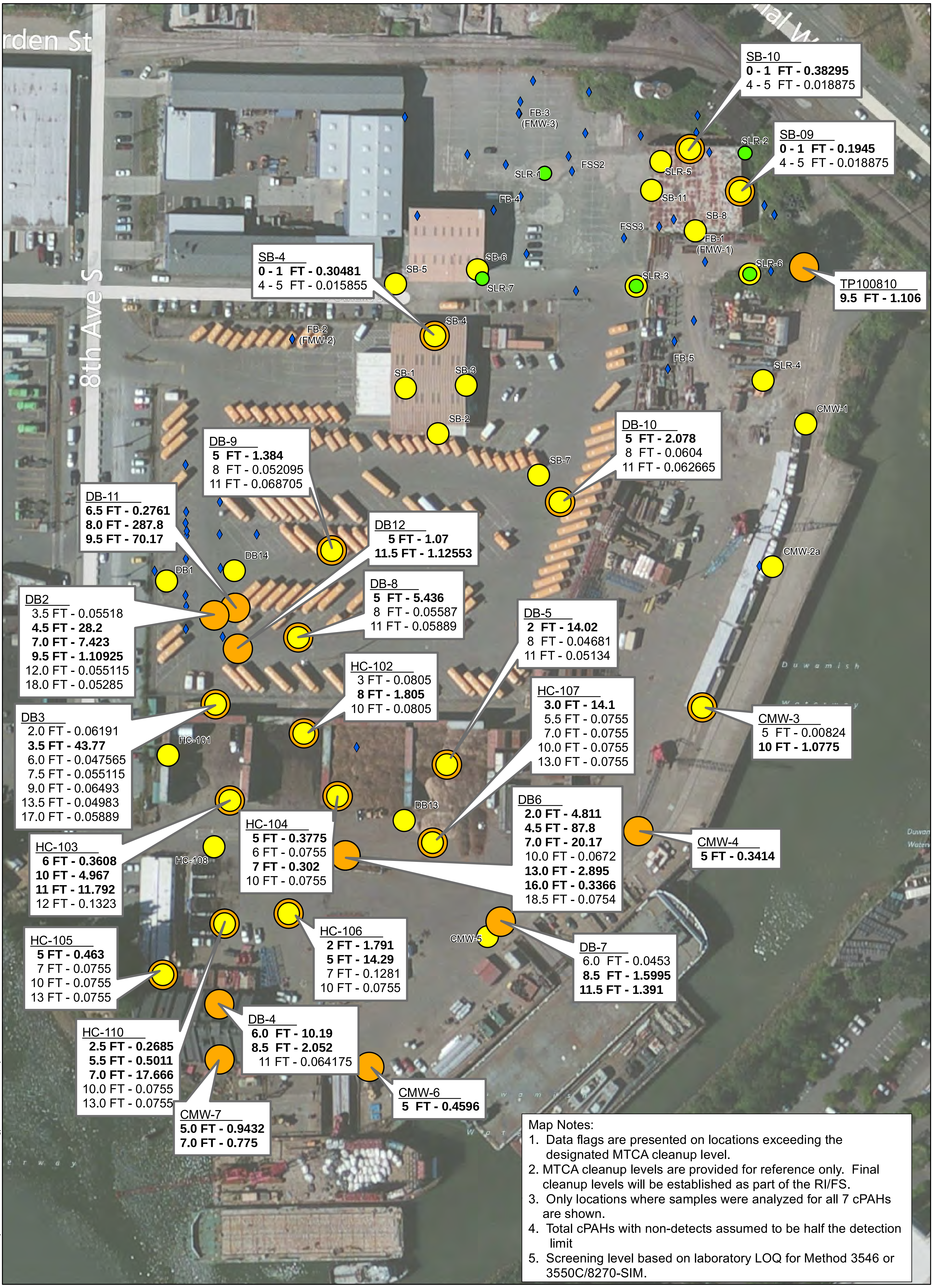
8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Distribution of Total Barium in Soil (mg/kg)

October 2012

Figure 5

* Marker not used on this map as no data meets this criterion.



Path:Q:\Projects\2012\1296010.00 Ecology Duwamish Crowley\GIS\Events

Legend

- Non-Detect below Screening Level of 0.005 mg/kg*
- Non-Detect above Screening Level of 0.005 mg/kg*
- Detection Below Screening Level of 0.005 mg/kg
- Detection Between Screening Level of 0.005 and MTCA Method B Level of 0.14 mg/kg
- Detection Exceeds MTCA Method B Level of 0.14 mg/kg
- Station Locations

N

0 100 200

Scale: Feet

* Marker not used on this map as no data meets this criterion.

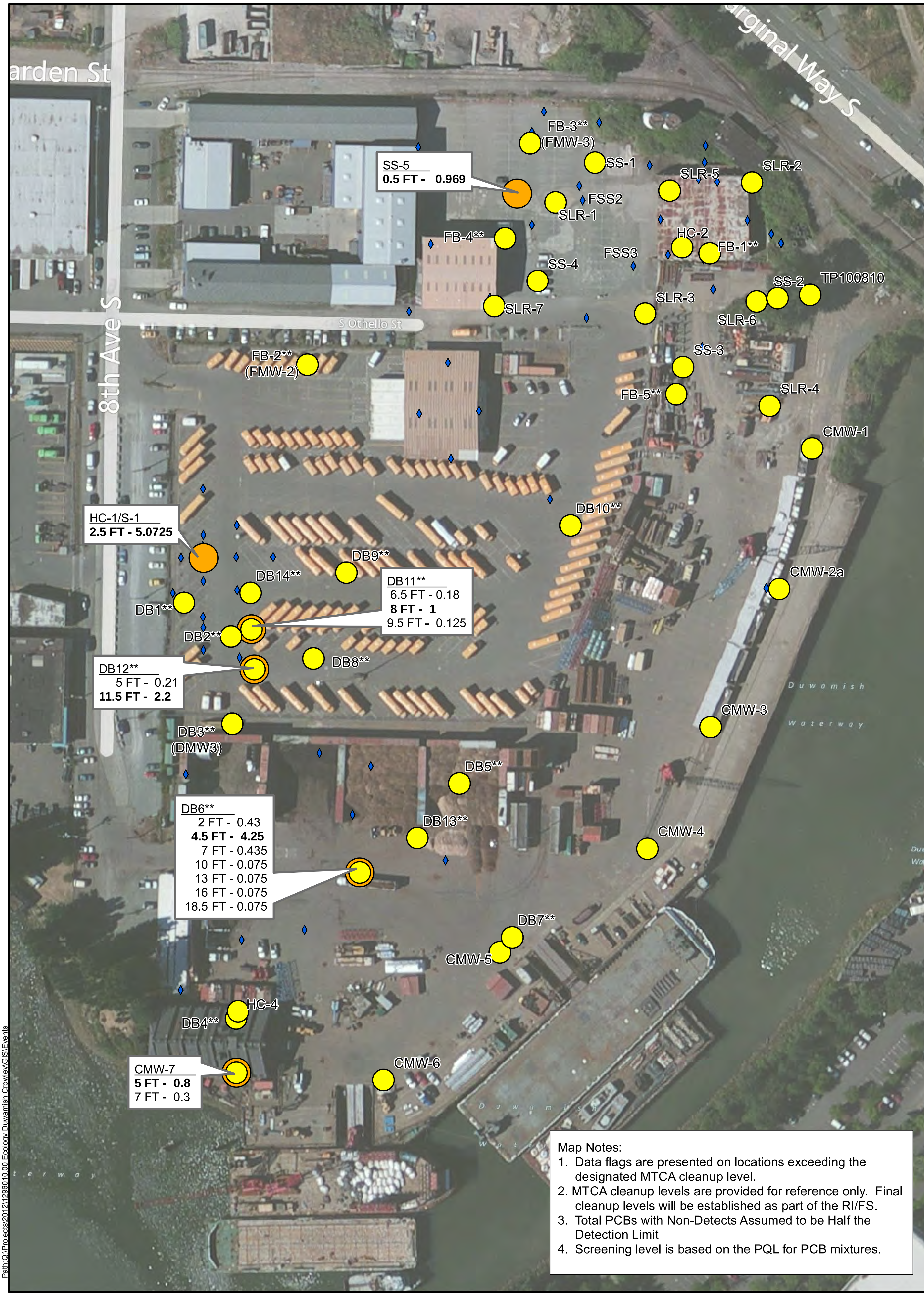
RI/FS Workplan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Distribution of Total cPAH in Soil (mg/kg)

October 2012

Figure 6



Path:Q:\Projects\2012\1296010.00 Ecology Duwamish Crowley\GIS\Events

Legend

- Non-Detect below Screening Level of 0.033 mg/kg*
- Non-Detect above Screening Level of 0.033 mg/kg*
- Detection Below Screening Level of 0.033 mg/kg*
- Detection Between Screening Level of 0.033 mg/kg and MTCA B Level of 0.5 mg/kg
- Detection Exceeds MTCA B Level of 0.5 mg/kg
- Station Locations

N

0 100 200

Scale: Feet

* Marker not used on this map as no data meets this criterion.
**Analytical results for all 7 Aroclors were not available at this location

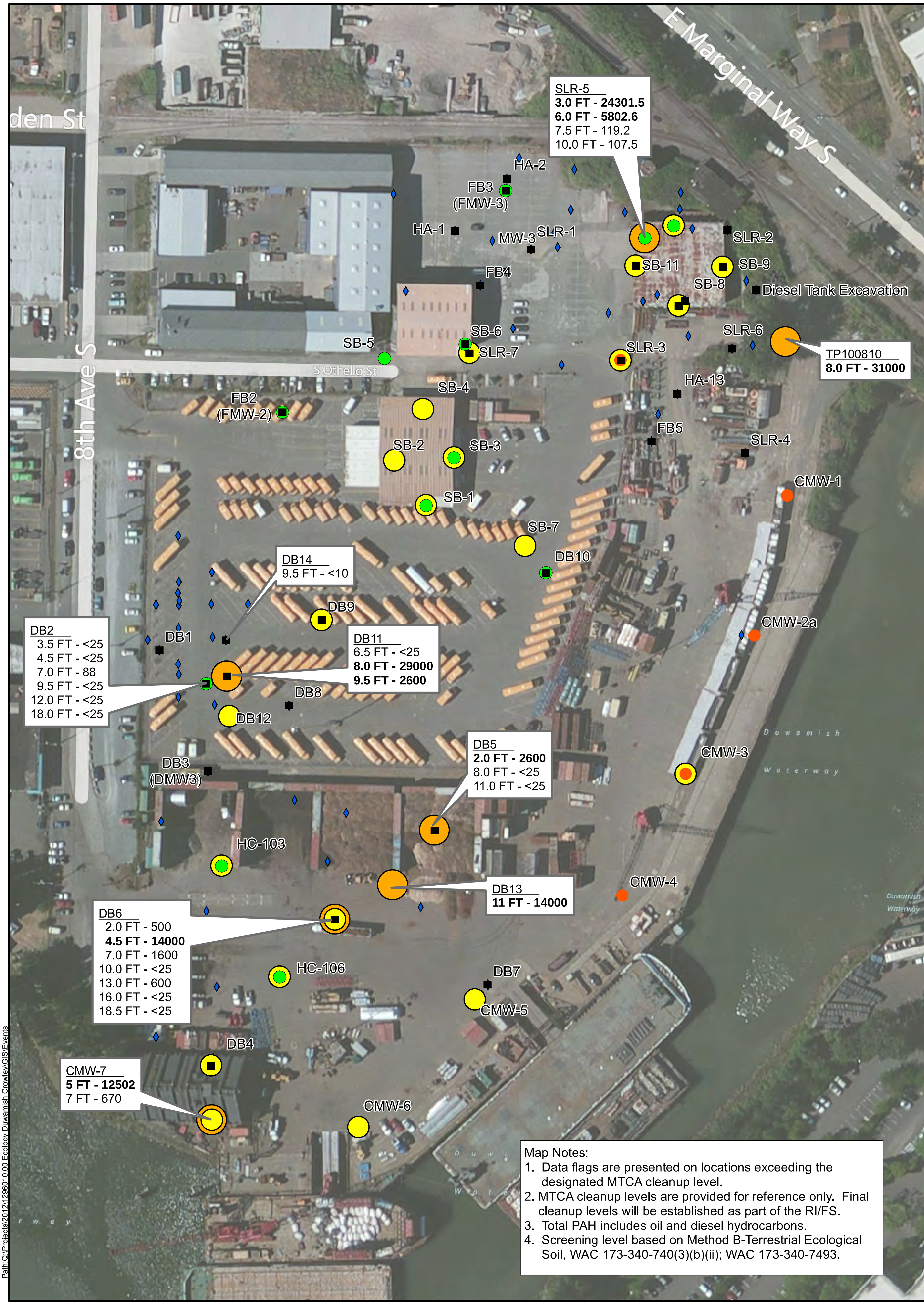
RI/FS Workplan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Distribution of Total PCBs in Soil (mg/kg)

October 2012

Figure 7



Legend

- Non-Detect below Screening Level of 200 mg/kg
- Non-Detect above Screening Level 200 mg/kg
- Detection Below Screening Level of 200 mg/kg
- Detection Between 200 mg/kg to MTCA Method A Level of 2000 mg/kg
- Detection Exceeds MTCA Method A Level of 2000 mg/kg
- Station Locations

N

0 100 200

Scale: Feet

RI/FS Workplan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Distribution of Total TPH in Soil (mg/kg)

October 2012

Figure 8

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Legend

- Non-Detect Below Screening Level of 1.0 ug/kg
- Non-Detect Above Screening Level of 1.0 ug/kg
- Detection Below Screening Level of 1.0 ug/kg
- Detection Between Screening Level of 1.0 ug/kg and MTCA Method A Level of 30 ug/kg
- Detection Exceeds MTCA Method A Level of 30 ug/kg*
- Station Locations

N

0 100 200

Scale: Feet

* Marker not used on this map as no data meets this criterion.

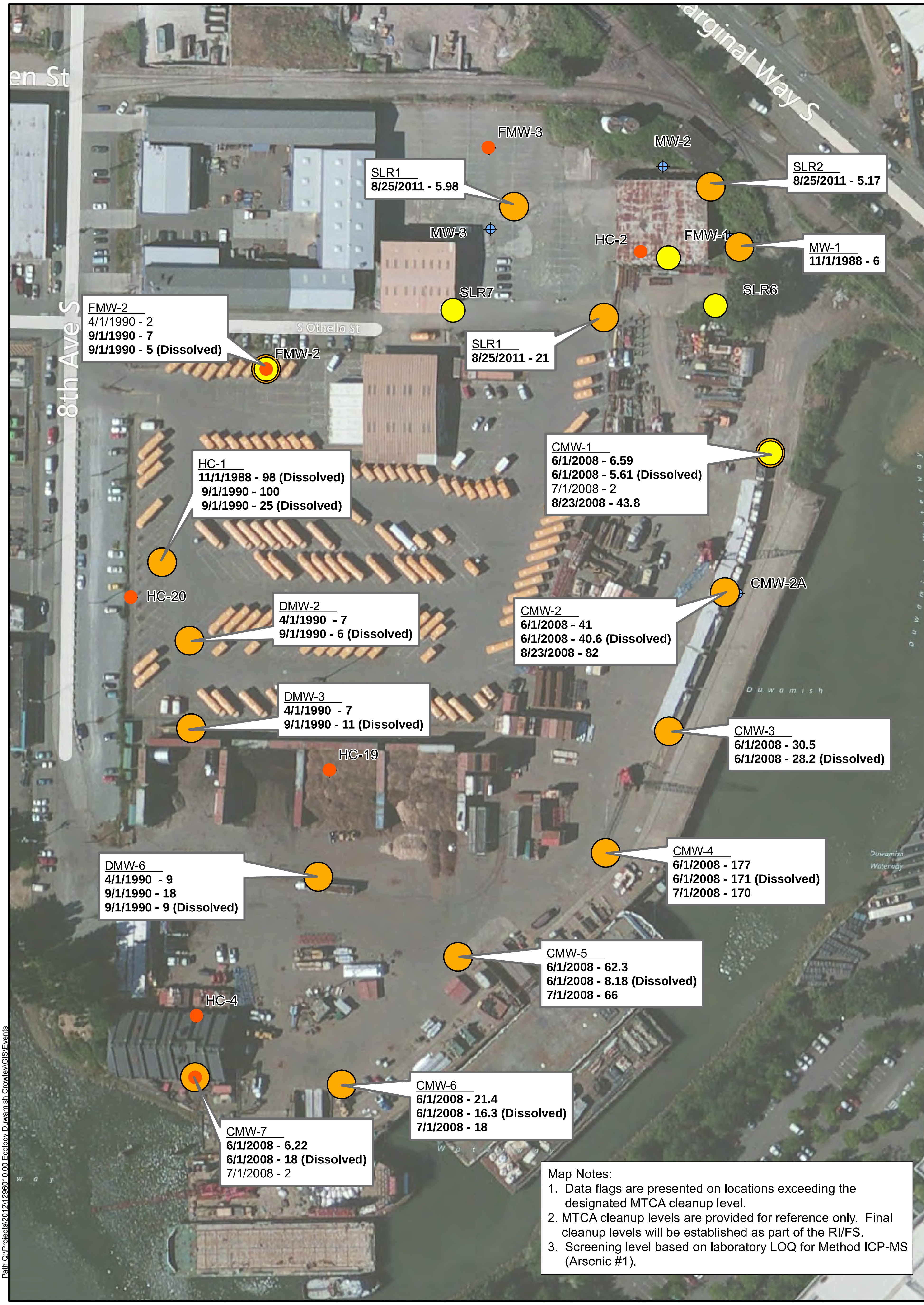
RI/FS Workplan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Distribution of Total Benzene in Soil (ug/kg)

October 2012

Figure 9



Path: Q:\Projects\2012\1296010.00 Ecology Duwamish Crowley\GIS\Events

Legend

- Non-Detect below Screening Level of 0.2 ug/L*
- Non-Detect above Screening Level of 0.2 ug/L
- Detection Below Screening Level of 0.2 ug/L*
- Detection Between Screening Level of 0.2 ug/L and MTCA Method A Level of 5 ug/L
- Detection Exceeds MTCA Method A Level of 5 ug/L
- Monitoring Wells without Arsenic Data

N

0 100 200

Scale: Feet

RI/FS Workplan

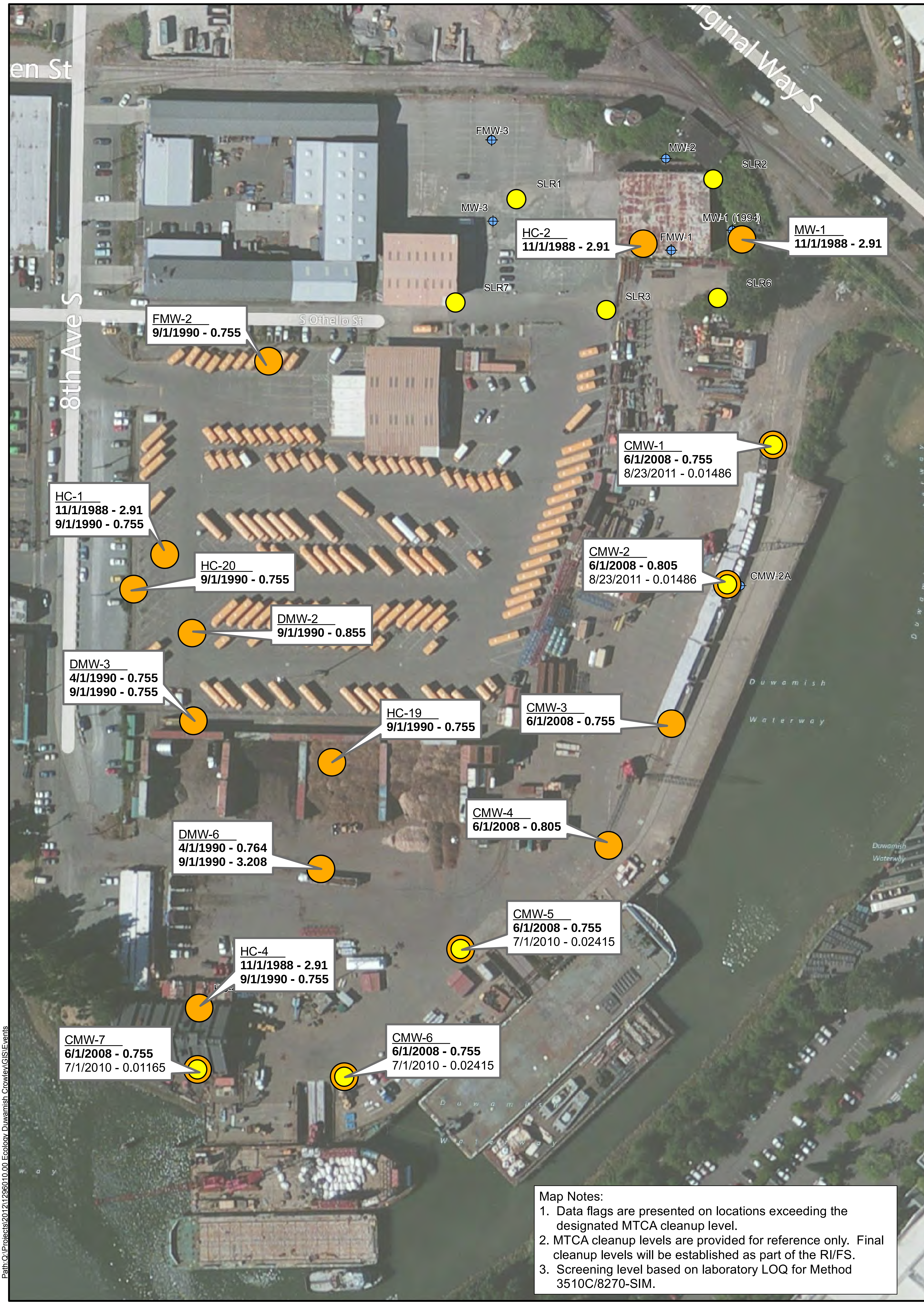
8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Distribution of Arsenic in Groundwater (ug/L)

October 2012

Figure 10

* Marker not used on this map as no data meets this criterion.



Path:Q:\Projects\2012\1296010.00 Ecology Duwamish Crowley\GIS\Events

Legend

- Non-Detect below Screening Level of 0.01 ug/L*
- Non-Detect above Screening Level of 0.01 ug/L*
- Detection Below Screening Level of 0.01 ug/L
- Detection Between Screening Level 0.01 ug/L and MTCA Method A Level of 0.1 ug/L
- Detection Exceeds MTCA Method A Level of 0.1 ug/L
- Monitoring Wells without cPAH Data

* Marker not used on this map as no data meets this criterion.

N

0 100 200

Scale: Feet

RI/FS Workplan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Distribution of cPAH in Groundwater (ug/L)

October 2012

Figure 11

Legend

- Monitoring Well (Shallow)
- Monitoring Well (Deep)
- Soil Boring (Shallow, ~20')
- Soil Boring (Deep, ~50')
- Previous Station Locations
- Borings and wells at approximate location as those proposed by SLR

N

0 100 200

Scale: Feet

RI/FS Workplan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

Proposed Soil Boring Location Map

October 2012

Figure 12

Path:Q:\Projects\2012\1296010.00 Ecology Duwamish Crowley\GIS\Events

Legend

- Proposed Sediment (Surface and Core) Sampling Locations
- Proposed Riprap Sediment Sampling Locations (end of existing pier and at each stromwater outfall) Additional samples to be collected at seep locations (if any are identified)
- Existing Monitoring Wells (Shallow)

Proposed Well Locations

- Deep Monitoring Well
- Shallow Monitoring Well
- Wells at approximate locations as those proposed by SLR
- Existing older wells to be inspected and redeveloped or replaced

N

0 100 200

Scale: Feet

RI/FS Workplan

8th Ave. Terminals RI/FS Work Plan
Duwamish Crowley Site, Seattle, WA

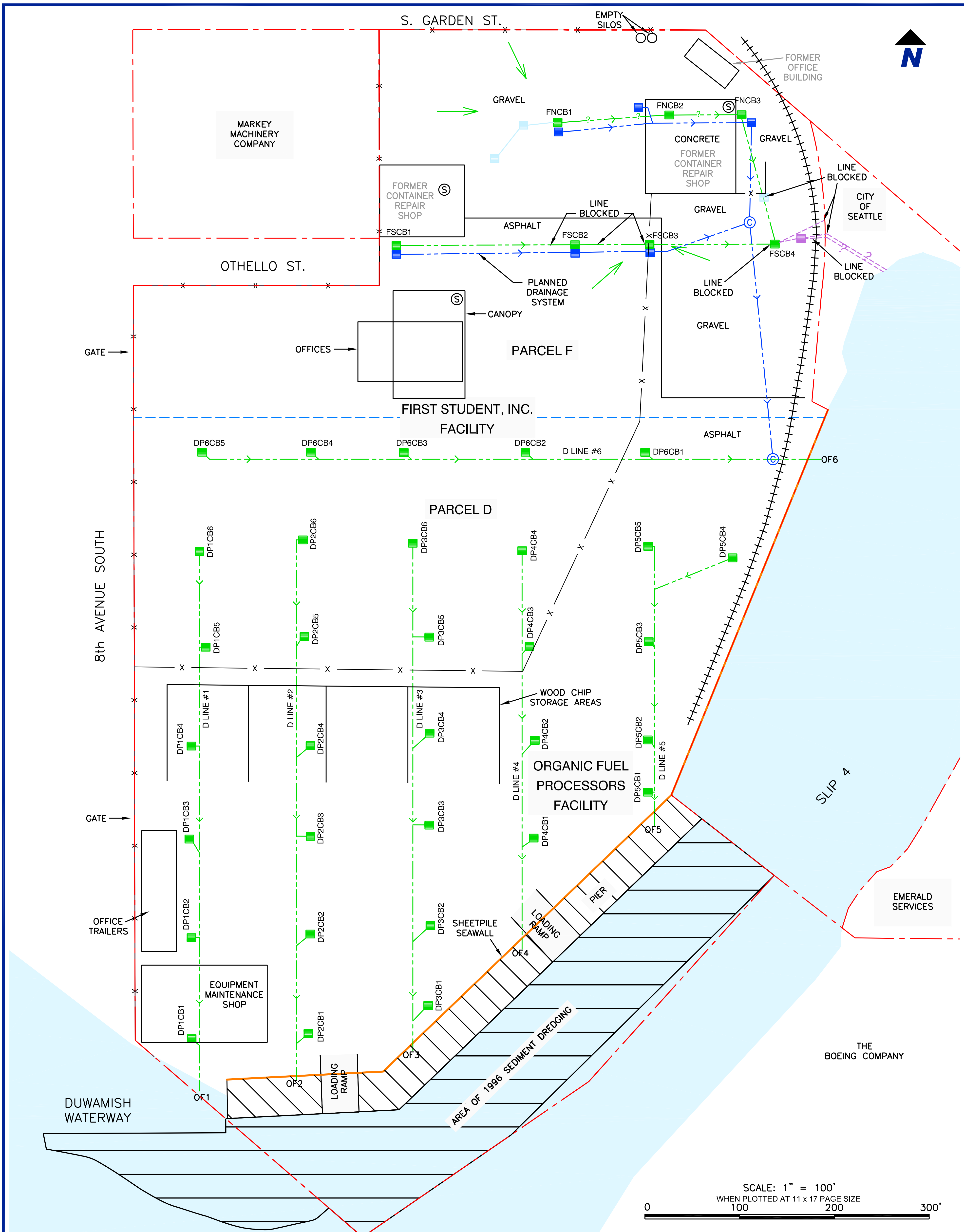
Proposed Monitoring Well and Sediment Sampling Map

October 2012

Figure 13

Appendix A

SLR International Corporation Site Maps



NOTES

1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG.

2) LOCATIONS OF STRUCTURES ARE APPROXIMATE.

3) CATCH BASINS AND CONVEYANCE LINES THAT ARE SHADED BLUE ARE ABANDONED COMPONENTS TO THE DRAINAGE SYSTEM. THESE COMPONENTS ARE SHOWN ON A LAYRITE CONCRETE PRODUCTS DRAWING TITLED "PLANT LAYOUT", DATED JUNE 1946, OR ON AN UNNAMED PRELIMINARY DRAWING DATED APPROXIMATELY 1990 THAT WAS IN CROWLEY MARITIME CORPORATION'S FILES. THERE IS CURRENTLY NO FIELD EVIDENCE OF THESE COMPONENTS.

4) CATCH BASINS AND CONVEYANCE LINES THAT ARE SHADED PURPLE ARE ABANDONED COMPONENTS TO THE DRAINAGE SYSTEM.

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- RAIL LINE
- FENCE
- EXISTING STORM WATER CONVEYANCE
- PLANNED STORM WATER CONVEYANCE
- DP2CB1 — EXISTING STORM WATER CATCH BASIN LOCATION AND DESIGNATION
- PLANNED STORM WATER CATCH BASIN LOCATION
- Ⓢ SUMP
- Ⓒ PLANNED CONVEYANCE VAULT
- STORMWATER FLOW DIRECTION
- OF5 OUTFALL LOCATION AND DESIGNATION

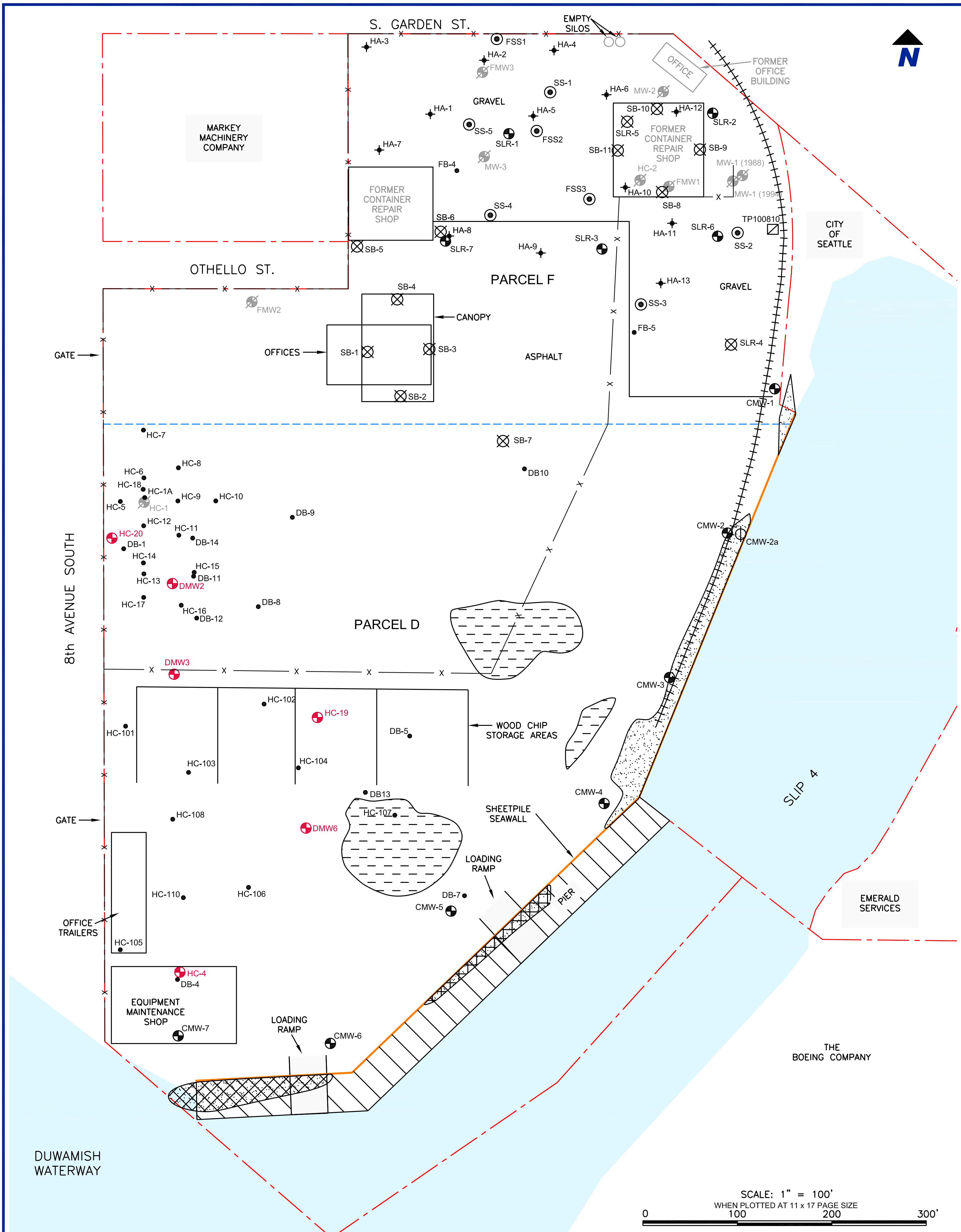
8TH AVENUE TERMINALS, INC. SITE
7400 8TH AVENUE SOUTH
SEATTLE, WASHINGTON

Drawing: CURRENT STORM WATER DRAINAGE SYSTEM

Date February 19, 2012	Scale AS SHOWN	Fig. No. 3
File Name 15-03	Project No. 101.00205.00019	

SLR
22118 20TH AVENUE SE
BLDG. G, SUITE 202
BOTHELL, WA 98201
T: 425-402-8800
F: 425-402-8488

C:\DRIVE_E\Clients\SLR\101\101.00205.00019\15-03.dwg, 2/19/2012 1:30:23 PM, BDT



NOTES

1) DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
2) LOCATIONS OF DREDGE FILL AREAS BASED ON UNNAMED DRAWING GENERATED AFTER 1989 THAT WAS IN CROWLEY MARITIME CORPORATION'S FILES.
3) LOCATIONS OF DREDGING FROM MARINE POWER & EQUIPMENT'S PLOT PLAN (1982).

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- RAIL LINE
- FENCE
- APPROXIMATE LOCATION OF DREDGE FILL AREA
- APPROXIMATE LOCATION OF SAND AND DREDGE FILL AREA
- APPROXIMATE AREA OF DREDGING (FROM SLOUGHED EDGE OF TOP OF BANK)
- 2008 OR 2011 GROUNDWATER MONITORING WELL
- 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- 1989 OR 1990 GROUNDWATER MONITORING WELL
- 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
- 1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
- 1994 SOIL BORING (APPROXIMATE LOCATION)
- 2008 SOIL BORING (APPROXIMATE LOCATION)
- 2009 OR 2011 SOIL BORING (APPROXIMATE LOCATION)
- 2010 TEST PIT (APPROXIMATE LOCATION)

8TH AVENUE TERMINALS, INC. SITE
7400 8TH AVENUE SOUTH
SEATTLE, WASHINGTON

Drawing: APPROXIMATE LOCATIONS OF DREDGE FILL AREAS

Date	February 19, 2012	Scale	AS SHOWN
File Name	15-04	Project No.	101.00205.00019

Fig. No. 4

SLR
22118 20th AVE SE
BLDG. G, SUITE 202
BOTHELL, WA 98021
T: 425-402-8800
F: 425-402-8488

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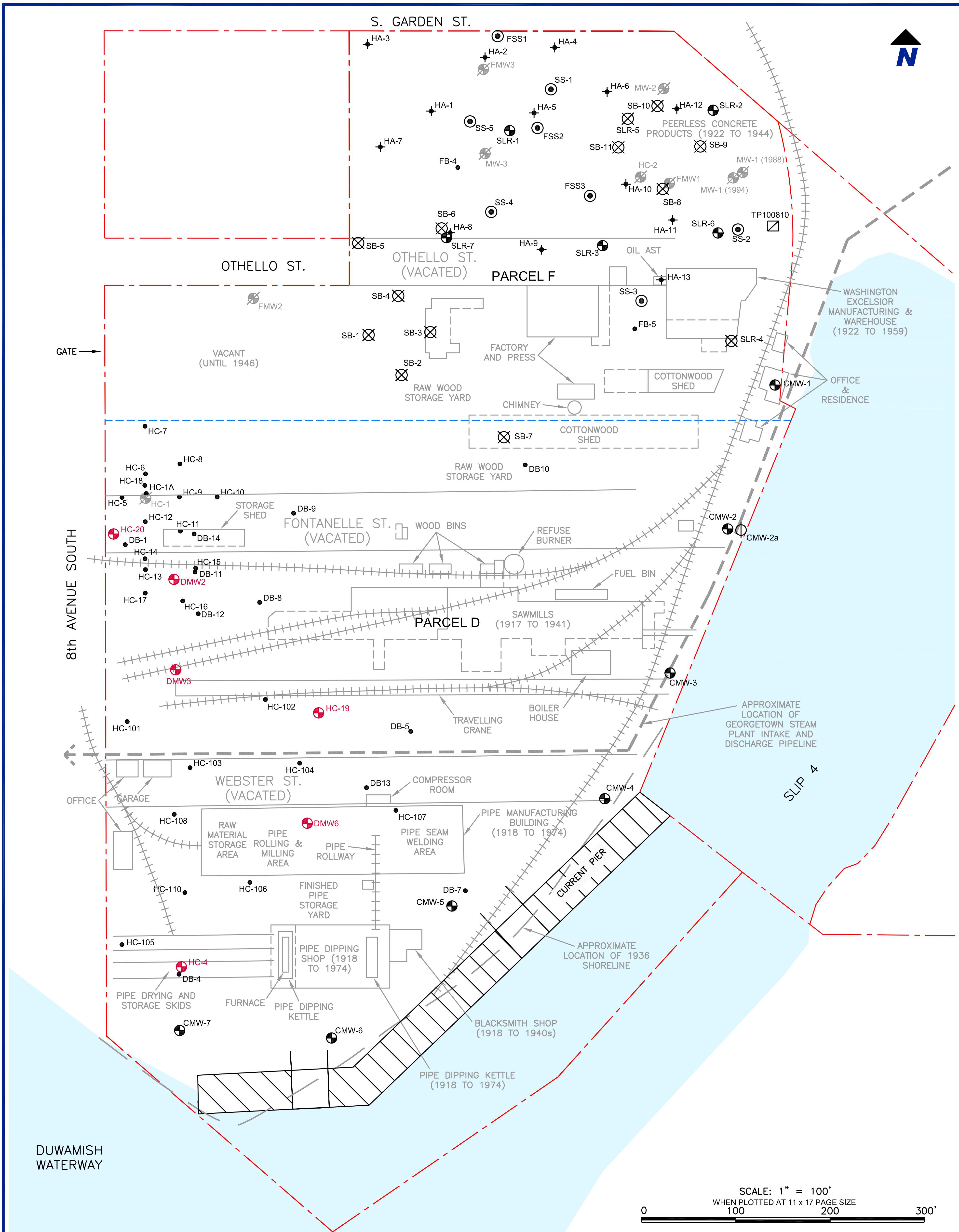

NOTES

1. DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
2. LOCATIONS OF HISTORIC OPERATIONS FROM HART CROWSER (1991), AND AERIAL PHOTOGRAPHS.

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- RAILROAD LINE
- 2008 OR 2011 GROUNDWATER MONITORING WELL
- 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- 1989 OR 1990 GROUNDWATER MONITORING WELL
- 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
- 1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
- 1994 SOIL BORING (APPROXIMATE LOCATION)
- 2008 SOIL BORING (APPROXIMATE LOCATION)
- 2009 OR 2011 SOIL BORING (APPROXIMATE LOCATION)
- 2010 TEST PIT (APPROXIMATE LOCATION)

8TH AVENUE TERMINALS, INC. SITE
7400 8TH AVENUE SOUTH
SEATTLE, WASHINGTON

Drawing: HISTORIC PROPERTY OPERATIONS - 1918 TO 1949

Date	March 5, 2012	Scale	AS SHOWN	Fig. No.
File Name	15-05	Project No.	101.00205.00019	5

SLR
22118 20th AVE SE
BLDG. G, SUITE 202
BOTHELL, WA 98021
T: 425-402-8800
F: 425-402-8488

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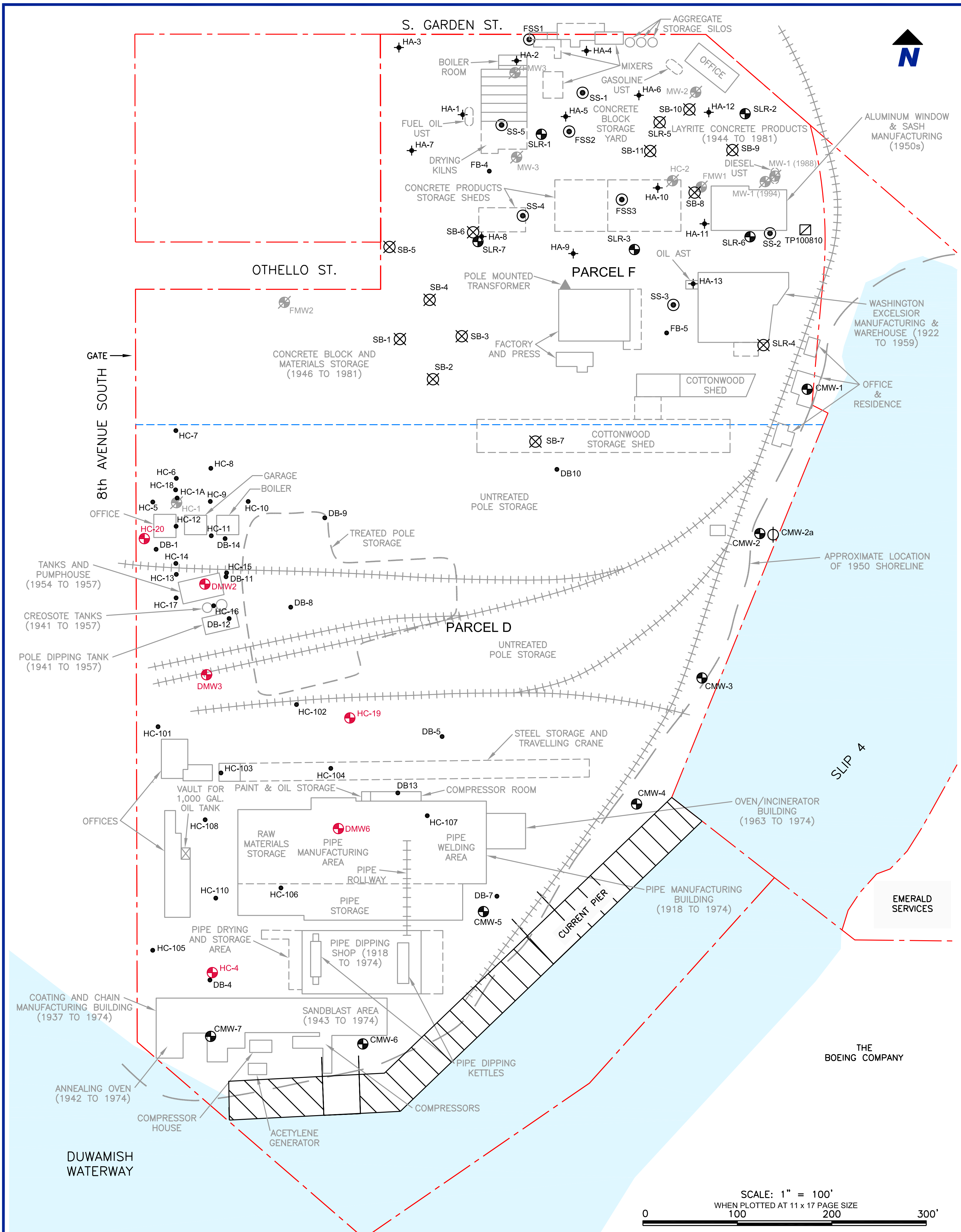

NOTES
1. DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG
2. LOCATIONS OF HISTORIC OPERATIONS FROM HART CROWSER (1991), SEACOR (1994), AND AERIAL PHOTOGRAPHS.

LEGEND
- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- RAILROAD LINE
- 2008 or 2011 GROUNDWATER MONITORING WELL
- 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- 1989 OR 1990 GROUNDWATER MONITORING WELL
- 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
- 1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
- 1994 SOIL BORING (APPROXIMATE LOCATION)
- 2008 SOIL BORING (APPROXIMATE LOCATION)
- 2009 or 2011 SOIL BORING (APPROXIMATE LOCATION)
- 2010 TEST PIT (APPROXIMATE LOCATION)

8TH AVENUE TERMINALS, INC. SITE
7400 8TH AVENUE SOUTH
SEATTLE, WASHINGTON

Drawing HISTORIC PROPERTY OPERATIONS - 1950 TO 1974

Date	February 17, 2012	Scale	AS SHOWN	Fig. No.
File Name	15-06	Project No.	101.00205.00019	6

SLR
22118 20th AVE SE
BLDG. G, SUITE 202
BOTHELL, WA 98021
T: 425-402-8800
F: 425-402-8488

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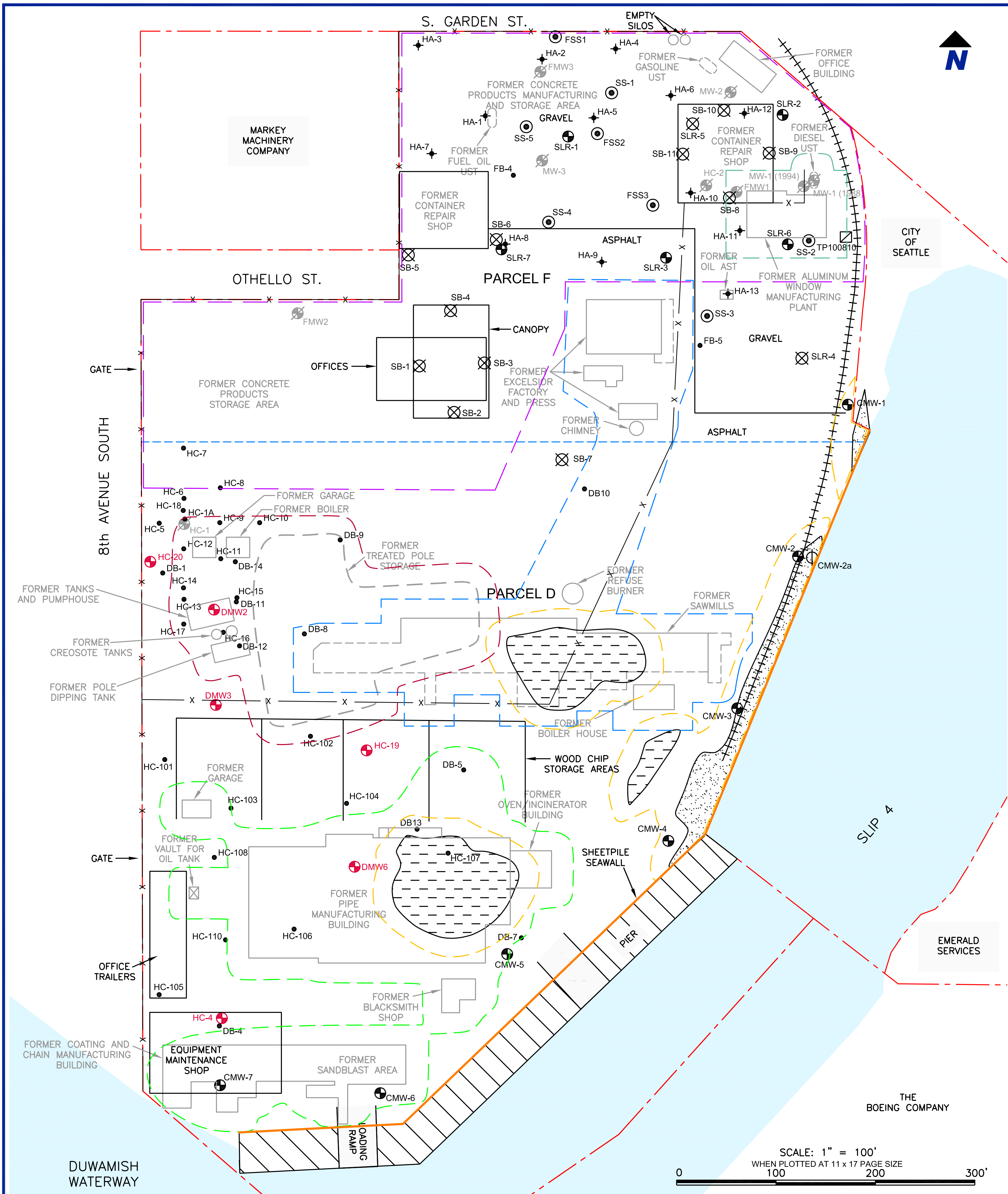

NOTES

DRAWING COMPILED FROM TRIAD ASSOCIATES, KIRKLAND, WA. SURVEY PLAN, DRAWING 06133-CC052908.DWG

LEGEND

- PARCEL D/PARCEL F BOUNDARY
- PROPERTY BOUNDARIES
- RAIL LINE
- FENCE
- APPROX. LOCATION OF DREDGE FILL AREA
- APPROX. LOCATION OF SAND AND DREDGE FILL AREA
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER WOOD TREATING OPERATIONS
- POTENTIAL SOURCE AREA ASSOCIATED WITH DREDGE FILL
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER SAWMILL AND EXCELSIOR FACTORY AND PRESS OPERATIONS
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER ALUMINUM WINDOW MANUFACTURING PLANT
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER PIPE AND CHAIN MANUFACTURING OPERATIONS
- POTENTIAL SOURCE AREA ASSOCIATED WITH FORMER CONCTETE PRODUCTS MANUFACTURING AND STORAGE OPERATIONS
- 2008 OR 2011 GROUNDWATER MONITORING WELL
- 1989 OR 1990 GROUNDWATER MONITORING WELL (ABANDONED OR DESTROYED)
- 1989 OR 1990 GROUNDWATER MONITORING WELL
- 1989 OR 1990 SOIL BORING (APPROX. LOCATION)
- 1989 OR 1990 SURFACE SOIL SAMPLE (APPROXIMATE LOCATION)
- 1994 SOIL BORING (APPROXIMATE LOCATION)
- 2008 SOIL BORING (APPROXIMATE LOCATION)
- 2009 OR 2011 SOIL BORING (APPROXIMATE LOCATION)
- 2010 TEST PIT (APPROXIMATE LOCATION)

8TH AVENUE TERMINALS, INC. SITE
7400 8TH AVENUE SOUTH
SEATTLE, WASHINGTON

Drawing: LOCATIONS OF POTENTIAL CONTAMINANT SOURCE AREAS

Date	February 17, 2012	Scale	AS SHOWN	Fig. No.
File Name	16-14	Project No.	101.00205.00019	14

SLR
22118 20th AVE SE
BLDG. G, SUITE 202
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Appendix B

Historical Data Summary Tables

Table 1
Previous Soil Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	PAHs (mg/kg) Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene[b]	Benzo[k]fluoranthene[b]	Chrysene	Dibenz[a,h]anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Methylnaphthalene, 2-	Naphthalene	Phenanthrene	Pyrene	Total cPAHs[c] (U=1/2 MRL)	Total cPAHs[c] (U=0)
					Preliminary Soil Screening Levels[a]	0.017 AC	0.069 AC*	0.22 AC	0.031 AC	0.0009 A	0.0013 A	0.0014 A	0.0014 A	0.003 U	0.0011 A	0.038 A	0.16 AC	0.024 AC	0.0009 BQ	0.043 AC	0.0011 A	0.10 AC	1.004 AC	--	--
					Laboratory PQL	0.0011	0.0025	0.0018	0.0009	0.0009	0.0013	0.0014	0.0014	0.0009	0.0011	0.038	0.0014	0.0029	0.0007	0.0022	0.0011	0.0024	0.0013	--	--
Dredge Fill Area																									
CMW-1	DF	CMW1-5	5	2008	F	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	0.01 U	0.03 U	0.01 U	0.01 U	0.01 U	0.03 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0 U
CMW-2a	DF	CMW-2a-4	4	2008	D	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	0.01 U	0.03 U	0.01 U	0.01 U	0.01 U	0.03 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0 U
CMW-3	DF	CMW-3-5	5	2008	D	0.01 U	0.01 U	0.01 U	0.01 U	**0.011**	0.01 U	0.01 U	0.01 U	**0.014**	0.01 U	0.03 U	**0.021**	0.01 U	0.01 U	0.03 U	0.01 U	**0.021**	**0.025**	**0.01**	**0.001**
CMW-3	DF	CMW-3-10	10	2008	D	**0.76**	0.1 U	**23**	**0.46**	**1**	**0.78**	**0.82**	**0.37**	**3.2**	0.01 U	**0.78**	**2.6**	**1.9**	**0.46**	**0.66**	**0.9**	**3.7**	**2**	**1.1**	**1.1**
CMW-4	DF	CMW-4-5	5	2008	D	**0.019**	**0.033**	**0.066**	**0.26**	**0.18**	**0.24**	**0.34**	**0.11**	**0.34**	**0.05**	0.03 U	**0.35**	**0.019**	**0.3**	0.03 U	**0.013**	**0.23**	**0.35**	**0.3**	**0.3**
CMW-5	DF	CMW-5-5	5	2008	D	**0.011**	0.01 U	**0.064**	**0.074**	**0.081**	**0.076**	**0.1**	**0.035**	**0.099**	**0.014**	0.03 U	**0.17**	0.01 U	**0.07**	0.03 U	0.01 U	**0.12**	**0.17**	**0.1**	**0.1**
DB6 (DMW6)	DF	DB6-2	2	1990	D	**4.9** B	0.3 U	**16** B	**0.44**	**4.8**	**2.6**	**6.9**	**6.9**	**9.9** B	**0.92**	**2.2**	**14** B	**4** B	**1.6**	**3**	**7.4** B	**17** B	**14** B	**4.8**	**4.8**
DB6 (DMW6)	DF	DB6-4.5	4.5	1990	D	**570** B	**13**	**910** B	**9.2**	**120**	**53**	**65**	**65**	**380** B	**23**	**210**	**640** B	**420** B	**37**	**540**	**1,600** B	**1,400** B	**470** B	**87.8**	**87.8**
DB6 (DMW6)	DF	DB6-7	7	1990	D	**43** B	**1.3**	**110** B	**6.3**	**25**	**13**	**16**	**16**	**40** B	**3.5**	**21**	**56** B	**32** B	**7.2**	**51**	**130** B	**160** B	**63** B	**20.2**	**20.2**
DB6 (DMW6)	DF	DB6-10	10	1990	D	**0.23**	0.078 U	**0.67**	0.078 U	**0.1** M	0.078 U	0.078 U	0.078 U	**0.26**	0.078 U	**0.092**	**0.35**	**0.19**	0.078 U	**0.16**	**0.49**	**0.91**	**0.32**	**0.1**	**0.01**
DB6 (DMW6)	DF	DB6-13	13	1990	D	**8.5**	**0.19**	**11**	**0.59**	**3.1**	**1.8**	**3**	**3**	**6.7**	**0.36**	**4.1**	**9.3**	**6.3**	**0.82**	**6.4**	**14**	**27**	**8.7**	**2.9**	**2.9**
DB6 (DMW6)	DF	DB6-16	16	1990	D	**1.2**	0.084 U	**2.5**	0.084 U	**0.39**	**0.2**	**0.4**	**0.4**	**0.92**	0.084 U	**0.51**	**1.5**	**0.92**	0.084 U	**1**	**3.2**	**3.3**	**1.8**	**0.3**	**0.3**
DB6 (DMW6)	DF	DB6-18.5	18.5	1990	D	**0.11**	0.093 U	**0.63**	0.093 U	**0.08** M	0.093 U	0.093 U	0.093 U	**0.23**	0.093 U	0.093 U	**0.27**	**0.1**	0.093 U	0.093 U	**0.14** M	**0.59**	**0.27**	**0.1**	**0.01**
DB7	DF	DB7-6	6	1990	D	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	**0.052** J	0.06 U	0.06 U	0.06 U	0.06 U	**0.058** J	**0.054** J	0.05 U	0.0 U
DB7	DF	DB7-8.5	8.5	1990	D	**0.31** B	**0.027** J	**0.57** B	**0.76**	**0.5**	**1.2**	**1.2**	**1.2**	**0.85** B	**0.13**	0.073 U	**1.3** B	**0.27**	**0.88**	**0.25**	**0.18**	**1.6** B	**1.5** B	**1.6**	**1.6**
DB7	DF	DB7-11.5	11.5	1990	D	**0.96** B	0.14 U	**2.1** B	0.14 U	**1.3**	**0.71**	**2.3**	**2.3**	**1.9** B	**0.17**	**0.6**	**3.8** B	**0.88**	**0.55**	**0.73**	**1.8**	**4.4** B	**3.2** B	**1.4**	**1.4**
DB13	DF	DB13-11	11	1990	D	**0.041** J	0.076 U	0.087 U	0.076 U	**0.041** M	0.076 U	**0.061**	**0.061**	**0.076**	0.076 U	**0.02** M	**0.13**	**0.033** J	0.076 U	**0.024** J	**0.13**	**0.19**	**0.12**	**0.1**	**0.02**
HC-107	DF	HC-107-S1	3	1990	D	**0.67**	0.1 U	**4.5**	**3.5**	**14**	**8.6**	**17**	**18**	**12**	**1**	NA	**29**	**0.97**	**3.8**	0.1 U	0.1 U	**14**	**23**	**14.1**	**14.1**
HC-107	DF	HC-107-S2	5.5	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-107	DF	HC-107-S3	7	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-107	DF	HC-107-S4	10	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-107	DF	HC-107-S5	13	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
Former Aluminum Window Manufacturing Area																									
FB-1 (FMW-1)	AW	FB-1-2	2	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.07 U	NA	NA	0.07 U	0.07 U	ND	ND	ND	0.07 U	0.07 U	NA	NA
FB-1 (FMW-1)	AW	FB-1-7	7	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.077 U	NA	NA	0.077 U	0.077 U	ND	ND	ND	0.077 U	0.077 U	NA	NA
FB-1 (FMW-1)	AW	FB-1-13	13	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.087 U	NA	NA	0.087 U	0.087 U	ND	ND	ND	0.087 U	0.087 U	NA	NA
SB-8	AW	SB-8 0-1FT	0-1	2009	F	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	NA	**0.028**	0.021 U	0.021 U	0.021 U	0.021 U	**0.033**	**0.1**	0.02 U	0.0 U
SB-8	AW	SB-8 4-5FT	4-5	2009	F	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	NA	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.02 U	0.0 U
SB-9	AW	SB-9 0-1FT	0-1	2009	F	**0.12**	0.024 U	**0.66**	**0.12**	**0.14**	**0.14**	**0.14**	**0.082**	**0.2**	**0.053**	NA	**0.43**	0.024 U	**0.11**	**0.058**	**0.059**	**0.43**	0.58	**0.2**	**0.2**
SB-9	AW	SB-9 4-5FT	4-5	2009	F	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	NA	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.02 U	0.0 U
SLR-6	AW	SLR6-1	1	2011	F	0.0011 U	0.0025 U	0.0018 U	**0.015**	**0.005**	**0.0085**	**0.011**	**0.0041**	**0.0083**	**0.0023**	0.03 U	**0.012**	0.0029 U	**0.011**	0.0022 U	**0.0017**	**0.0076**	**0.011**	**0.01**	**0.01**
SLR-6	AW	SLR6-5	5	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-6	AW	SLR6-10	10	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
TP100810	AW	TP100810-9.5'	9.5	2010	F	0.50 U	0.50 U	0.50 U	**0.64**	**0.54**	**0.81**	**0.83**	**0.61**	**1.20**	0.50 U	NA	**1.60**	0.50 U	**0.61** J	NA	**0.79**	**2.90**	**1.70**	**1.08**	**1.03**
Former Concrete Products Manufacturing Operation Area																									
FB-1 (FMW-1)	CP	FB-1-2	2	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.07 U	NA	NA	0.07 U	0.07 U	ND	ND	ND	0.07 U	0.07 U	NA	NA
FB-1 (FMW-1)	CP	FB-1-7	7	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.077 U	NA	NA	0.077 U	0.077 U	ND	ND	ND	0.077 U	0.077 U	NA	NA
FB-1 (FMW-1)	CP	FB-1-13	13	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.087 U	NA	NA	0.087 U	0.087 U	ND	ND	ND	0.087 U	0.087 U	NA	NA
FB-2 (FMW-2)	CP	FB-2-2	2	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	**0.11**	NA	NA	**0.099** J	0.1 U	ND	ND	ND	**0.075** J	0.075 J	NA	NA
FB-2 (FMW-2)	CP	FB-2-5,5	5.5	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.072 U	NA	NA	0.072 U	0.072 U	ND	ND	ND	0.072 U	0.072 U	NA	NA
FB-2 (FMW-2)	CP	FB-2-8	8	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.079 U	NA	NA	0.079 U	0.079 U	ND	ND	ND	0.079 U	0.079 U	NA	NA
FB-2 (FMW-2)	CP	FB-2-18.5	18.5	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.071 U	NA	NA	0.071 U	0.071 U	ND	ND	ND	0.071 U	0.071 U	NA	NA
FB-3 (FMW-3)	CP	FB-3-3	3	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.063 U	NA	NA	0.063 U	0.063 U	ND	ND	ND	0.063 U	0.063 U	NA	NA
FB-3 (FMW-3)	CP	FB-3-3.5	3.5	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.081 U	NA	NA	0.081 U	0.081 U	ND	ND	ND	0.081 U	0.081 U	NA	NA

Table 1
Previous Soil Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	PAHs (mg/kg) Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene[b]	Benzo[k]fluoranthene[b]	Chrysene	Dibenz[a,h]anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Methylnaphthalene, 2-	Naphthalene	Phenanthrene	Pyrene	Total cPAHs[c] (U=1/2 MRL)	Total cPAHs[c] (U=0)
					Preliminary Soil Screening Levels[a]	0.017 AC	0.069 AC*	0.22 AC	0.031 AC	0.0009 A	0.0013 A	0.0014 A	0.0014 A	0.003 U	0.0011 A	0.038 A	0.16 AC	0.024 AC	0.0009 BQ	0.043 AC	0.0011 A	0.10 AC	1.004 AC	--	--
					Laboratory PQL	0.0011	0.0025	0.0018	0.0009	0.0009	0.0013	0.0014	0.0014	0.0009	0.0011	0.038	0.0014	0.0029	0.0007	0.0022	0.0011	0.0024	0.0013	--	--
FB-3 (FMW-3)	CP	FB-3-13.5	13.5	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.08 U	NA	NA	0.08 U	0.08 U	ND	ND	ND	0.08	0.08 U	NA	NA
FB-4	CP	FB-4-2	2	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.06 U	NA	NA	0.06 U	0.06 U	ND	ND	ND	0.06	0.06 U	NA	NA
FB-4	CP	FB-4-8	8	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.072 U	NA	NA	0.072 U	0.072 U	ND	ND	ND	0.072 U	0.072 U	NA	NA
FB-4	CP	FB-4-11	11	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.078 U	NA	NA	0.078 U	0.78 U	ND	ND	ND	0.078 U	0.078 U	NA	NA
FB-5	CP	FB-5-2	2	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.071 U	NA	NA	0.071 U	0.071 U	ND	ND	ND	0.071 U	0.071 U	NA	NA
FB-5	CP	FB-5-8	8	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.078 U	NA	NA	0.078 U	0.078 U	ND	ND	ND	0.078 U	0.078 U	NA	NA
FB-5	CP	FB-5-11	11	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.085 U	NA	NA	0.085 U	0.085 U	ND	ND	ND	0.085 U	0.085 U	NA	NA
FSS2	CP	FSS2	0.5	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	1.8 U	NA	NA	1.8 U	4 M	ND	ND	ND	17	3 M	NA	NA
FSS3	CP	FSS3	0.5	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	1.7 U	NA	NA	1.7 U	1.7 U	ND	ND	ND	1.7 U	1.7 U	NA	NA
SB-1	CP	SB-1 0-1FT	0-1	2009	F	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	NA	0.022 U	0.022 U	0.022 U	0.18	0.057	0.022 U	0.022 U	0.02 U	0.0 U
SB-1	CP	SB-1 4-5FT	4-5	2009	F	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	NA	0.022 U	0.022 U	0.022 U	0.024	0.022 U	0.022 U	0.022 U	0.02 U	0.0 U
SB-2	CP	SB-2 0-1FT	0-1	2009	F	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	0.02 U	0.02 U	0.02 U	0.07	0.048	0.075	0.02 U	0.02 U	0.0 U
SB-2	CP	SB-2 4-5FT	4-5	2009	F	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	NA	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.043	0.02 U	0.0 U
SB-3	CP	SB-3 0-1FT	0-1	2009	F	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	NA	0.05	0.022 U	0.022 U	0.027	0.022 U	0.022 U	0.37	0.02 U	0.0 U
SB-3	CP	SB-3 4-5FT	4-5	2009	F	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	NA	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.02 U	0.0 U
SB-4	CP	SB-4 0-1FT	0-1	2009	F	0.022 U	0.022 U	0.022 U	0.074	0.022 U	0.28	0.13	0.084	0.022 U	0.022 U	NA	0.061	0.022 U	0.022 U	0.024	0.028	0.022 U	0.17	0.3	0.3
SB-4	CP	SB-4 4-5FT	4-5	2009	F	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	NA	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.075	0.02 U	0.0 U
SB-5	CP	SB-5 0-1FT	0-1	2009	F	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	NA	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.036	0.02 U	0.0 U
SB-5	CP	SB-5 4-5FT	4-5	2009	F	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	NA	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.02 U	0.0 U
SB-6	CP	SB-6 0-1FT	0-1	2009	F	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	NA	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.02 U	0.0 U
SB-6	CP	SB-6 4-5FT	4-5	2009	F	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	NA	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.02 U	0.0 U
SB-8	CP	SB-8 0-1FT	0-1	2009	F	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	NA	0.028	0.021 U	0.021 U	0.021 U	0.021 U	0.033	0.1	0.02 U	0.0 U
SB-8	CP	SB-8 4-5FT	4-5	2009	F	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	NA	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.02 U	0.0 U
SB-9	CP	SB-9 0-1FT	0-1	2009	F	0.12	0.024 U	0.66	0.12	0.14	0.14	0.14	0.082	0.2	0.053	NA	0.43	0.024 U	0.11	0.058	0.059	0.43	0.58	0.2	0.2
SB-9	CP	SB-9 4-5FT	4-5	2009	F	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	NA	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.02 U	0.0 U
SB-10	CP	SB-10 0-1FT	0-1	2009	F	0.022 U	0.022 U	0.16	0.022 U	0.07	0.36	0.084	0.049	0.045	0.022 U	NA	0.17	0.022 U	0.022 U	0.022 U	0.022 U	0.17	0.22	0.4	0.4
SB-10	CP	SB-10 4-5FT	4-5	2009	F	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	NA	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.02 U	0.0 U
SB-11	CP	SB-11 0-1FT	0-1	2009	F	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	NA	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.02 U	0.0 U
SB-11	CP	SB-11 4-5FT	4-5	2009	F	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	NA	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.02 U	0.0 U
SLR-1	CP	SLR1-1	1	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0062	0.0016	0.0025	0.0037	0.0014 U	0.0027	0.0011 U	0.03 U	0.0039	0.0029 U	0.0039	0.0023	0.003	0.0024	0.0043	0.004	0.004
SLR-1	CP	SLR1-6	6	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-1	CP	SLR1-10	10	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0011	0.0011	0.0016	0.0014	0.0014 U	0.0011	0.0011 U	0.03 U	0.0015	0.0029 U	0.0009 UJ	0.0022 U	0.0011 U	0.0024 U	0.0022	0.002	0.002
SLR-2	CP	SLR2-1	1	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0037	0.002	0.0016	0.0048	0.0014 U	0.0035	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0028	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.003	0.003
SLR-2	CP	SLR2-6	6	2011	F	0.0018 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-2	CP	SLR2-10	10	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009U	0.0 U
SLR-3	CP	SLR3-1	1	2011	F	0.011 U	0.025 U	0.018 U	0.034	0.042	0.036	0.055	0.018	0.06	0.011 U	0.3 U	0.074	0.029 U	0.028	0.022 U	0.011 U	0.044	0.077	0.06	0.06
SLR-3	CP	SLR3-6	6	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-3	CP	SLR3-10	10	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-5	CP	SLR5-3	3	2011	F	0.28 J	0.025 UJ	0.018 U	0.009 UJ	0.02	0.013 U	0.014 U	0.014 U	0.12	0.011 U	1.5 U	0.098	1.3 J	0.007 UJ	0.17	0.011 U	2.1	0.36	0.003	0.003
SLR-5	CP	SLR5-6	6	2011	F	0.079	0.025 U	0.018 U	0.009 UJ	0.024	0.013 U	0.014 U	0.014 U	0.03	0.011 U	1.5 U	0.053	0.35	0.007 UJ	0.026	0.011 U	0.68	0.13	0.003	0.003
SLR-5	CP	SLR5-10	10	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0013	0.0013 U	0.0014 U	0.0014 U	0.0016	0.0011 U	0.03 U	0.0056	0.0026 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0049	0.002	0.0001
SLR-6	CP	SLR6-1	1	2011	F	0.0011 U	0.0025 U	0.0018 U	0.015	0.005	0.0085	0.011	0.0041	0.0083	0.0023	0.03 U	0.012	0.0029 U	0.011	0.0022 U	0.0017	0.0076	0.011	0.01	0.01
SLR-6	CP	SLR6-5	5	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-6	CP	SLR6-10	10	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-7	CP	SLR7-1	1	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-7	CP	SLR7-5	5	2011	F	0.0018 U	0.0025 U	0.0018 U	0.011	0.0037	0.0013 U	0.0014 U	0.0014 U	0.0073	0.0011 U	0.03 U	0.005	0.0029 U	0.0056	0.0053	0.005	0.0024 U	0.0097	0.002	0.001
SLR-7	CP	SLR7-10	10	2011	F	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.001 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
TP100810	CP	TP100810-9.5'	9.5	2010	F	0.50 U	0.50 U	0.50 U	0.64	0.54	0.81	0.83	0.61	1.20	0.50 U	NA	1.60	0.50 U	0.61 J	NA	0.79	2.90	1.70	1.08	1.03
Former Pipe & Chain Manufacturing Area																									
CMW-5	PC	CMW-5-5	5	2008	D	0.011	0.01 U	0.064	0.074	0.081	0.076	0.1	0.035	0.099	0.014	0.03 U	0.17	0.01 U	0.07	0.03 U	0.01 U	0.12	0.17	0.1	0.1
CMW-6	PC	CMW-6-5	5	2008	D	0.034	0.01 U	0.096	0.19	0.33	0.35	0.37	0.12	0.36	0.05	0.3 U	0.7	0.039	0.19	0.03 U	0.018	0.43	0.54	0.5	0.5
CMW-7	PC	CMW-7-5	5	2008	D	0.01 U	0.1 U	0.34	0.48	0.68	0.7	0.84	0.32	0.97	0.01 U	0.3 U	1.3	0.01 U	0.49	0.03 U	0.01 U	0.6	1.1	0.9	0.9
CMW-7	PC	CMW-7-7	7	2008	D	0.15	0.1 U	0.35	0.46	0.58	0.6	0.52	0.22	0.55	0.01 U	0.3 U	1.7	0.17	0.37	0.63	0.15	1.6	1.4	0.8	0.8
DB4	PC	DB4-6	6	1990	D	1.4 B	0.35 U	5.1 B	0.15 M	13	5.2	16	16	13 B	1.3	0.54	22 B	1.4 B	2.3	0.35 U	0.23 MB	16 B	17 B	10.2	10.2
DB4	PC	DB4-8.5	8.5	1990	D	0.29 B	0.13 U	0.93 B	0.076 M	2.6	1.1	2.9	2.9	2.6 B	0.33	0.11 J	5 B	0.27 B	0.53	0.13 U	0.18 B	3.5 B	4.1 B	2.1	2.1

Table 1
Previous Soil Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene[b]	Benzo[k]fluoranthene[b]	Chrysene	Dibenz[a,h]anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Methylnaphthalene, 2-	Naphthalene	Phenanthrene	Pyrene	Total cPAHs[c] (U=1/2 MRL)	Total cPAHs[c] (U=0)
						PAHs (mg/kg)																			
Preliminary Soil Screening Levels[a]						0.017 AC	0.069 AC*	0.22 AC	0.031 AC	0.0009 A	0.0013 A	0.0014 A	0.0014 A	0.003 U	0.0011 A	0.038 A	0.16 AC	0.024 AC	0.0009 BQ	0.043 AC	0.0011 A	0.10 AC	1.004 AC	--	--
Laboratory PQL						0.0011	0.0025	0.0018	0.0009	0.0009	0.0013	0.0014	0.0014	0.0009	0.0011	0.038	0.0014	0.0029	0.0007	0.0022	0.0011	0.0024	0.0013	--	--
DB4	PC	DB4-11	11	1990	D	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.1 U	0.0 U
DB5	PC	DB5-2	2	1990	D	8.6 B	0.37 U	13 B	0.26 J	18	7.7	19	19	20 B	1.8	3.2	35 B	5.9	3.4	0.93	2.4	33 B	32 B	14.0	4.0
DB5	PC	DB5-8	8	1990	D	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.05 U	0.0 U
DB5	PC	DB5-11	11	1990	D	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.059 J	0.068 U	0.068 U	0.068 U	0.068 U	0.092	0.053 J	0.1 U	0.0 U
DB6 (DMW6)	PC	DB6-2	2	1990	D	4.9 B	0.3 U	16 B	0.44	4.8	2.6	6.9	6.9	9.9 B	0.92	2.2	14 B	4 B	1.6	3	7.4 B	17 B	14 B	4.8	4.8
DB6 (DMW6)	PC	DB6-4.5	4.5	1990	D	570 B	13	910 B	9.2	120	53	65	65	380 B	23	210	640 B	420 B	37	540	1600 B	1400 B	470 B	87.8	87.8
DB6 (DMW6)	PC	DB6-7	7	1990	D	43 B	1.3	110 B	6.3	25	13	16	16	40 B	3.5	21	56 B	32 B	7.2	51	130 B	160 B	63 B	20.2	20.2
DB6 (DMW6)	PC	DB6-10	10	1990	D	0.23	0.078 U	0.67	0.078 U	0.1 M	0.078 U	0.078 U	0.078 U	0.26	0.078 U	0.092	0.35	0.19	0.078 U	0.16	0.49	0.91	0.32	0.1	0.01
DB6 (DMW6)	PC	DB6-13	13	1990	D	8.5	0.19	11	0.59	3.1	1.8	3	3	6.7	0.36	4.1	9.3	6.3	0.82	6.4	14	27	8.7	2.9	2.9
DB6 (DMW6)	PC	DB6-16	16	1990	D	1.2	0.084 U	2.5	0.084 U	0.39	0.2	0.4	0.4	0.92	0.084 U	0.51	1.5	0.92	0.084 U	1	3.2	3.3	1.8	0.3	0.3
DB6 (DMW6)	PC	DB6-18.5	18.5	1990	D	0.11	0.093 U	0.63	0.093 U	0.08 M	0.093 U	0.093 U	0.093 U	0.23	0.093 U	0.093 U	0.27	0.1	0.093 U	0.093 U	0.14 M	0.59	0.27	0.1	0.01
DB7	PC	DB7-6	6	1990	D	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.052 J	0.06 U	0.06 U	0.06 U	0.06 U	0.058 J	0.054 J	0.05 U	0.0 U
DB7	PC	DB7-8.5	8.5	1990	D	0.31 B	0.027 J	0.57 B	0.76	0.5	1.2	1.2	1.2	0.85 B	0.13	0.073 U	1.3 B	0.27	0.88	0.25	0.18	1.6 B	1.5 B	1.6	1.6
DB7	PC	DB7-11.5	11.5	1990	D	0.96 B	0.14 U	2.1 B	0.14 U	1.3	0.71	2.3	2.3	1.9 B	0.17	0.6	3.8 B	0.88	0.55	0.73	1.8	4.4 B	3.2 B	1.4	1.4
DB13	PC	DB13-11	11	1990	D	0.041 J	0.076 U	0.087 U	0.076 U	0.041 M	0.076 U	0.061	0.061	0.076	0.076 U	0.02 M	0.13	0.033 J	0.076 U	0.024 J	0.13	0.19	0.12	0.1	0.02
HC-101	PC	HC-101-S1	3	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.01
HC-101	PC	HC-101-S3	8	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.01
HC-101	PC	HC-101-S4	10	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.01
HC-103	PC	HC-103-S3	6	1990	D	0.1 U	0.1 U	0.06	0.15	0.23	0.22	0.43	0.53	0.28	0.1 U	NA	0.11	0.1 U	0.14	0.1 U	0.1 U	0.1 U	0.37	0.4	0.4
HC-103	PC	HC-103-S4	10	1990	D	30	0.5	28	0.51	11	2.5	5.2	6.5	11	0.23	NA	55	31	0.64	19	25	88	44	5.0	5.0
HC-103	PC	HC-103-S5	11	1990	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,400	NA	NA	NA	NA
HC-103	PC	HC-103-S5D	11	1990	D	130	2.2	360	1.8	9.9	7.2	14	17	25	0.52	NA	310	0.4 U	2	200	210	360	86	11.8	11.8
HC-103	PC	HC-103-S6	12	1990	D	1.5	0.1 U	1.4	0.1 U	0.24	0.065	0.13	0.13	0.23	0.1	NA	1.5	1.8	0.1 U	1.9	5.1	4.9	1.1	0.1	0.1
HC-103	PC	HC-103-S7	13	1990	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	NA	NA	NA	NA
HC-104	PC	HC-104-S2	5	1990	D	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	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.3	0.44	0.5 U	0.4 U	0.0 U
HC-104	PC	HC-104-S3	6	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-104	PC	HC-104-S4	7	1990	D	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	NA	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.3 U	0.0 U
HC-104	PC	HC-104-S5	10	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-105	PC	HC-105-S2	5	1990	D	0.13	0.1 U	0.13	0.097	0.53	0.26	0.63	0.65	0.5	0.1 U	NA	0.81	0.1 U	0.12	0.1 U	0.1 U	0.47	0.7	0.5	0.5
HC-105	PC	HC-105-S3	7	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-105	PC	HC-105-S4	10	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-105	PC	HC-105-S5	13	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-106	PC	HC-106-S1	2	1990	D	0.17	0.1 U	0.46	0.62	1.4	1.1	2.3	2.3	1.3	0.15	NA	2.9	2.3	0.63	0.1 U	0.1 U	1.7	3.2	1.8	1.8
HC-106	PC	HC-106-S2	5	1990	D	17	0.32	33	3.4	18	8.6	16	16	20	1.1	NA	38	15	3.8	11	20	61	41	14.3	14.3
HC-106	PC	HC-106-S3	7	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.53	0.1 U	0.1 U	0.1 U	0.51	0.1 U	NA	1	0.1 U	0.1 U	0.1 U	0.1 U	1.2	0.95	0.1	0.1
HC-106	PC	HC-106-S4	10	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	0.0 U
HC-107	PC	HC-107-S1	3	1990	D	0.67	0.1 U	4.5	3.5	14	8.6	17	18	12	1	NA	29	0.97	3.8	0.1 U	0.1 U	14	23	14.1	14.1
HC-107	PC	HC-107-S2	5.5	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-107	PC	HC-107-S3	7	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-107	PC	HC-107-S4	10	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-107	PC	HC-107-S5	13	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-108	PC	HC-108-S3	6	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.054	0.1 U	0.1 U	0.0 U
HC-108	PC	HC-108-S4	8	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-108	PC	HC-108-S5	10	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-108	PC	HC-108-S6	13	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-110	PC	HC-110-S1	2.5	1990	D	0.1 U	0.1 U	0.082	0.083	0.25	0.16	0.34	0.34	0.24	0.1 U	NA	0.55	0.1 U	0.081	0.1 U	0.1 U	0.33	0.47	0.3	0.3
HC-110	PC	HC-110-S3	5.5	1990	D	0.1 U	0.1 U	0.065	0.18	0.38	0.32	0.58	0.6	0.41	0.1 U	NA	0.57	0.1 U	0.16	0.1 U	0.1 U	0.25	0.69	0.5	0.5
HC-110	PC	HC-110-S4	7	1990	D	1.1	0.87	4.8	6.5	14	12	17	18	12	0.46	NA	27	2.2	6	0.15	0.11	23	34	17.7	17.7
HC-110	PC	HC-110-S5	10	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
HC-110	PC	HC-110-S6	13	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U

Table 1
Previous Soil Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	PAHs (mg/kg)																			
						Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene[b]	Benzo[k]fluoranthene[b]	Chrysene	Dibenz[a,h]anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Methylnaphthalene, 2-	Naphthalene	Phenanthrene	Pyrene	Total cPAHs[c] (U=1/2 MRL)	Total cPAHs[c] (U=0)
					Preliminary Soil Screening Levels[a]	0.017 AC	0.069 AC*	0.22 AC	0.031 AC	0.0009 A	0.0013 A	0.0014 A	0.0014 A	0.003 U	0.0011 A	0.038 A	0.16 AC	0.024 AC	0.0009 BQ	0.043 AC	0.0011 A	0.10 AC	1.004 AC	--	--
					Laboratory PQL	0.0011	0.0025	0.0018	0.0009	0.0009	0.0013	0.0014	0.0014	0.0009	0.0011	0.038	0.0014	0.0029	0.0007	0.0022	0.0011	0.0024	0.0013	--	--
Former Sawmill and Excelsior Factory Areas																									
CMW-3	SE	CMW-3-5	5	2008	D	0.01 U	0.01 U	0.01 U	0.01 U	0.011	0.01 U	0.01 U	0.01 U	0.014	0.01 U	0.03 U	0.021	0.01 U	0.01 U	0.03 U	0.01 U	0.021	0.025	0.01	0.001
CMW-3	SE	CMW-3-10	10	2008	D	0.76	0.1 U	23	0.46	1	0.78	0.82	0.37	3.2	0.01 U	0.78	2.6	1.9	0.46	0.66	0.9	3.7	2	1.1	1.1
DB8	SE	DB8-5	5	1990	D	0.061 JB	0.1	0.7 B	0.57	1.6	3.2	8.100	8.100	3.6 B	1.3	0.042 J	1.2 B	0.082 B	2.9	0.057 J	0.18 B	0.5 B	2.6 B	5.4	5.4
DB8	SE	DB8-8	8	1990	D	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.1 U	0.0 U
DB8	SE	DB8-11	11	1990	D	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.1 U	0.0 U
DB10	SE	DB10-5	5	1990	D	0.058 J	0.083 U	0.13	0.25	0.8	1.2	3.2	3.2	1.1	0.37	0.083 U	0.92	0.038 J	1.1	0.083 U	0.077 J	0.44	1.4	2.1	2.1
DB10	SE	DB10-8	8	1990	D	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.1 U	0.0 U
DB10	SE	DB10-11	11	1990	D	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.1 U	0.0 U
FB-5	SE	FB-5-2	2	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.071 U	NA	NA	0.071 U	0.071 U	ND	ND	ND	0.071 U	0.071 U	NA	NA
FB-5	SE	FB-5-8	8	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.078 U	NA	NA	0.078 U	0.078 U	ND	ND	ND	0.078 U	0.078 U	NA	NA
FB-5	SE	FB-5-11	11	1990	F	ND	ND	ND	ND	ND	ND	ND	ND	0.085 U	NA	NA	0.085 U	0.085 U	ND	ND	ND	0.085 U	0.085 U	NA	NA
SB-7	SE	SB-7 0-1FT	0-1	2009	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.0 U
SB-7	SE	SB-7 4-5FT	4-5	2009	D	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	NA	0.022 U	0.022 U	0.022 U	0.057	0.022 U	0.037	0.022 U	0.02 U	0.0 U
SLR-3	SE	SLR3-1	1	2011	D	0.011 U	0.025 U	0.018 U	0.034	0.042	0.036	0.055	0.018	0.06	0.011 U	0.3 U	0.074	0.029 U	0.028	0.022 U	0.011 U	0.044	0.077	0.06	0.06
SLR-3	SE	SLR3-6	6	2011	D	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-3	SE	SLR3-10	10	2011	D	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-4	SE	SLR4-1	1	2011	D	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
SLR-4	SE	SLR4-5	5	2011	D	0.0011 U	0.0025 U	0.036	0.015	0.0009 UJ	0.014	0.018	0.0059	0.032	0.0041	0.03 U	0.014 U	0.0029 U	0.015	0.0022 U	0.0017	0.005	0.013	0.019	0.019
SLR-4	SE	SLR4-10	10	2011	D	0.0011 U	0.0025 U	0.0018 U	0.0009 UJ	0.0009 UJ	0.0013 U	0.0014 U	0.0014 U	0.0009 UJ	0.0011 U	0.03 U	0.0014 U	0.0029 U	0.0007 UJ	0.0022 U	0.0011 U	0.0024 U	0.0013 U	0.0009 U	0.0 U
Former Wood Treating Area																									
DB1	WT	DB1-5	5	1990	D	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.086	0.086	0.12	0.059 U	0.059 U	0.14	0.059 U	0.059 U	0.059 U	0.059 U	0.073	0.14	0.1	0.02
DB1	WT	DB1-6.5	6.5	1990	D	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.081 M	0.06 U	0.06 U	0.1	0.06 U	0.06 U	0.06 U	0.06 U	0.076	0.1	0.05	0.001
DB1	WT	DB1-9.5	9.5	1990	D	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.05 U	0.0 U
DB2 (DMW2)	WT	DB2-3.5	3.5	1990	D	0.058 U	.0.58 U	0.039 J	0.054 J	0.027 J	0.038 J	0.032 J	0.032 J	0.038 J	0.058 U	0.058 U	0.041 J	0.058 U	0.048 J	0.058 U	0.058 U	0.043 J	0.046 J	0.1	0.1
DB2 (DMW2)	WT	DB2-4.5	4.5	1990	D	0.2 JB	0.52	3.7 B	2.8	7.3	18	36	36	19 B	6.8	0.15 J	4.5 B	0.31 U	14	0.1 J	0.22 J	1.3 B	12 B	28.2	28.2
DB2 (DMW2)	WT	DB2-7	7	1990	D	4 B	0.25	6.2 B	0.88	2.8	4.6	9.3	9.3	7.3 B	1.8	2	3.2 B	2.6	4.3	4.6	9	6.5 B	4.8 B	7.4	7.4
DB2 (DMW2)	WT	DB2-9.5	9.5	1990	D	2.7	0.075 U	0.87 U	0.25	0.92	0.74	1.2	1.2	0.75	0.075 U	1.2	3.3	1.7	0.26	1.4	4.2	5.6	3.4	1.1	1.1
DB2 (DMW2)	WT	DB2-12	12	1990	D	0.073 U	0.075 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.074	0.073 U	0.073 U	0.073 U	0.073 U	0.17	0.11	0.1 U	0.0 U
DB2 (DMW2)	WT	DB2-18	18	1990	D	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.076	0.07 U	0.07 U	0.07 U	0.098	0.17	0.11	0.1 U	0.0 U
DB3 (DMW3)	WT	DB3-2	2	1990	D	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.1 U	0.0 U
DB3 (DMW3)	WT	DB3-3.5	3.5	1990	D	0.42 B	1.4	8.1 B	4.1	19	25	64	64	37 B	11	0.32 J	14 B	0.64	26	0.17 M	0.68	3 B	24 B	43.8	43.8
DB3 (DMW3)	WT	DB3-6	6	1990	D	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.05 U	0.0 U
DB3 (DMW3)	WT	DB3-7.5	7.5	1990	D	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.1 U	0.0 U
DB3 (DMW3)	WT	DB3-9	9	1990	D	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.1 U	0.0 U
DB3 (DMW3)	WT	DB3-13.5	13.5	1990	D	1.3	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.44	0.052 J	0.53	0.066 U	0.67	2.7	0.86	0.044 M	0.05 U	0.0 U
DB3 (DMW3)	WT	DB3-17	17	1990	D	3.5	0.078 U	1.2	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	2.5	2.1	2.9	0.078 U	1.5	2	7.6	1.8	0.1 U	0.0 U
DB8	WT	DB8-5	5	1990	D	0.061 JB	0.1	0.7 B	0.57	1.6	3.2	8.100	8.100	3.6 B	1.3	0.042 J	1.2 B	0.082 B	2.9	0.057 J	0.18 B	0.5 B	2.6 B	5.4	5.4
DB8	WT	DB8-8	8	1990	D	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.1 U	0.0 U
DB8	WT	DB8-11	11	1990	D	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.1 U	0.0 U
DB9	WT	DB9-5	5	1990	D	0.053	0.033	0.2	0.86	0.5	0.99	0.99	0.99	1.5	0.33	0.032	0.77	0.041	0.98	0.062	0.092	0.53	0.72	1.4	1.4
DB9	WT	DB9-8	8	1990	D	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069	0.069	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.1 U	0.0 U
DB9	WT	DB9-11	11	1990	D	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.1 U	0.0 U
DB11	WT	DB11-6.5	6.5	1990	D	0.082 U	0.082 U	0.084 U	0.23	0.12	0.17	0.330	0.330	0.47	0.054 M	0.082 U	0.13	0.082 U	0.18	0.082 U	0.032 J	0.073 J	0.12	0.3	0.3
DB11	WT	DB11-8	8	1990	D	860 B	24	420 B	20	280	140	510	510	320 B	46	390	1,200 B	630	100	640	2,100	2,200	840 B	288 B	288 B

Table 1
Previous Soil Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	PAHs (mg/kg) Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene[b]	Benzo[k]fluoranthene[b]	Chrysene	Dibenz[a,h]anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Methylnaphthalene, 2-	Naphthalene	Phenanthrene	Pyrene	Total cPAHs[c] (U=1/2 MRL)	Total cPAHs[c] (U=0)
					Preliminary Soil Screening Levels[a]	**0.017 AC**	**0.069 AC***	**0.22 AC**	**0.031 AC**	**0.0009 A**	**0.0013 A**	**0.0014 A**	**0.0014 A**	**0.003 U**	**0.0011 A**	**0.038 A**	**0.16 AC**	**0.024 AC**	**0.0009 BQ**	**0.043 AC**	**0.0011 A**	**0.10 AC**	**1.004 AC**	**--**	**--**
					Laboratory PQL	**0.0011**	**0.0025**	**0.0018**	**0.0009**	**0.0009**	**0.0013**	**0.0014**	**0.0014**	**0.0009**	**0.0011**	**0.038**	**0.0014**	**0.0029**	**0.0007**	**0.0022**	**0.0011**	**0.0024**	**0.0013**	**--**	**--**
DB11	WT	DB11-9.5	9.5	1990	D	**190** B	**2.6**	**97** B	**5.3**	**86**	**26**	**159**	**159**	**97** B	**8**	**29**	**280** B	**140**	**20**	**120**	**450**	**460** B	**250** B	**70.2**	**70.2**
DB12	WT	DB12-5	5	1990	D	**0.39**	0.089 U	**1**	0.089 U	**1.2**	**0.54**	**1.7**	**1.7**	**1.4**	**0.18**	**0.23**	**3**	**0.45**	**0.38**	**0.055** J	**0.11**	**3.5**	**2.2**	**1.1**	**1.1**
DB12	WT	DB12-11.5	11.5	1990	D	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	**0.053** M	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	**1.2** J	1.5 U	**4.8**	1.5 U	1.1 U	0.0 U
DB14	WT	DB14-9.5	9.5	1990	D	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.1 U	0.0 U
HC-102	WT	HC-102-S1	3	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.1**	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.1**	**0.01**
HC-102	WT	HC-102-S3	8	1990	D	0.2 U	0.2 U	**0.33**	**0.59**	**1.7**	**1.1**	**2**	**2.5**	**1.7**	0.2 U	NA	**3.1**	0.2 U	**0.58**	0.2 U	0.2 U	**1.1**	**2.9**	**1.8**	**1.8**
HC-102	WT	HC-102-S4	10	1990	D	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.1**	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.1**	**0.01**

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-1; PQLs are identified with an A.
[b] = Reported benzofluoranthene values in Landau (1990) do not distinguish between benzo[b]fluoranthene and benzo[k]fluoranthene.
[c] = Adjusted for toxicity equivalency factors.
All values in milligrams per kilogram (mg/kg).
Polycyclic aromatic hydrocarbons (PAHs) by EPA Methods 8270 and 8270 SIM.
Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening levels.
* = Most stringent ARAR is consistent across multiple sources.
A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.
U = Chemical not detected at detection limit shown.
B = Laboratory report indicated chemical detected in associated blank; presence in sample may be attributed to field/lab contamination.
J = Laboratory report indicated that the reported value is an estimate.
M = Laboratory report indicated that reported value is an estimate, but with low spectral match parameters.
ND = Chemical not detected; however, detection limit not available.
NA = Not analyzed or value cannot be determined.
B(a)P TEQ = Screening level is total carcinogenic PAH value using toxicity equivalency methodology.

Potential Source Areas:
- DF = Dredge fill area.
- PC = Former pipe and chain manufacturing area.
- SE = Former sawmill and excelsior factory areas.
- AW = Former aluminum window manufacturing area.
- CP = Former concrete products manufacturing operations area.
- WT = Former wood treating area.

Table 2
Previous Soil Sample Analytical Results - Phenols, Phthalates, and PCBs
8th Avenue Terminals, Inc. Site
Seattle, Washington

						Phenols (mg/kg)						Phthalates (mg/kg)						PCBs (mg/kg)								
Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Phenol	2-Methylphenol	4-Methylphenol	2,4-Dimethylphenol	Benzoic Acid	Pentachlorophenol	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Di-n-butyl phthalate	Diethyl phthalate	Dimethyl phthalate	Di-n-octyl phthalate	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs (U=1/2 MRL)	Total PCBs (U=0)
					Preliminary Soil Screening Levels[a]	0.084 A	0.23 A	0.40 A	0.30 A	0.87 A	0.14 A	0.11 A	0.05 A	0.26 AC	0.20 AC	0.094 AC*	0.07 A	0.036 A	0.036 A	0.036 A	0.036 A	0.036 A	0.036 A	0.036 A	--	--
					Laboratory PQLs	0.084	0.23	0.40	0.30	0.87	0.14	0.11	0.05	0.062	0.051	0.044	0.07	0.036	0.036	0.036	0.036	0.036	0.036	0.036	--	--
Dredge Fill Area																										
CMW-1	DF	CMW1-5	5	2008	F	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U	0.0 U
CMW-2a	DF	CMW-2a-4	4	2008	D	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U	0.0 U
CMW-3	DF	CMW-3-5	5	2008	D	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U	0.0 U
CMW-3	DF	CMW-3-10	10	2008	D	3 U	3 U	3 U	3 U	30 U	3 U	3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.3**	0.1 U	**0.6**	**0.3**
CMW-4	DF	CMW-4-5	5	2008	D	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	**1**	**20**	**0.54**	0.03 U	0.03 U	**0.034**	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.2**	0.1 U	**0.5**	**0.2**
CMW-5	DF	CMW-5-5	5	2008	D	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U	0.0 U
DB6 (DMW6)	DF	DB6-2	2	1990	D	0.61 U	0.3 U	0.3 U	0.61 U	3 U	**0.27**	**0.39** B	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.05 U	NA	NA	0.05 U	0.05 U	**0.32**	0.17 U	NA	NA
DB6 (DMW6)	DF	DB6-4.5	4.5	1990	D	**4.3**	**6**	**15**	**9.3**	5.7 U	**0.69**	**3.2** MB	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	1.0 U	NA	NA	1.0 U	1.0 U	**2.5**	2.5 U	NA	NA
DB6 (DMW6)	DF	DB6-7	7	1990	D	**0.88**	**0.86**	**2.7**	**2.5**	3.5 U	**0.28**	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.07 U	NA	NA	0.07 U	0.07 U	0.5 U	0.3 U	NA	NA
DB6 (DMW6)	DF	DB6-10	10	1990	D	0.16 U	0.078 U	0.078 U	0.16 U	0.78 U	0.005 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB6 (DMW6)	DF	DB6-13	13	1990	D	**0.1** J	**0.099**	**0.33**	**0.073** J	0.90 U	**0.026**	0.09 U	0.009 U	0.09 U	0.009 U	0.009 U	0.009 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB6 (DMW6)	DF	DB6-16	16	1990	D	0.17 U	0.084 U	0.084 U	0.17 U	0.84 U	0.005 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB6 (DMW6)	DF	DB6-18.5	18.5	1990	D	0.19 U	0.093 U	0.093 U	0.19 U	0.93 U	**0.042** J	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB7	DF	DB7-6	6	1990	D	0.12 U	0.06 U	0.06 U	0.12 U	0.6 U	0.005 U	**0.13** B	0.06 U	**0.08**	0.06 U	0.06 U	0.06 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB7	DF	DB7-8.5	8.5	1990	D	0.15 U	0.073 U	0.073 U	0.15 U	0.73 U	**0.0057**	**0.49** B	0.073 U	**0.054** J	0.073 U	0.073 U	0.073 U	0.05 U	NA	NA	0.05 U	0.05 U	**0.076**	0.05 U	NA	NA
DB7	DF	DB7-11.5	11.5	1990	D	0.28 U	0.14 U	0.14 U	0.28 U	1.4 U	**0.21**	**0.62** B	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.05 U	NA	NA	0.05 U	0.05 U	**0.21**	0.14 U	NA	NA
DB13	DF	DB13-11	11	1990	D	0.15 U	0.076 U	0.076 U	0.15 U	0.76 U	0.38 U	0.076 U	0.76 U	0.076 U	0.076 U	0.76 U	0.76 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
Former Aluminum Window Manufacturing Area																										
FB-1 (FMW-1)	AW	FB-1-2	2	1990	F	ND	ND	ND	ND	ND	ND	0.07 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-1 (FMW-1)	AW	FB-1-7	7	1990	F	ND	ND	ND	ND	ND	ND	0.077 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-1 (FMW-1)	AW	FB-1-13	13	1990	F	ND	ND	ND	ND	ND	ND	0.087 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
HC-2	AW	HC-2/S-2	2	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.099 U	0.099 U	0.22 U	0.0 U
SLR-6	AW	SLR6-1	1	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-6	AW	SLR6-5	5	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-6	AW	SLR6-10	10	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SS-2	AW	SS-2	0.5	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.088 U	0.088 U	0.20 U	0.0 U
TP100810	AW	TP100810-9.5	9.5	2010	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U	0.0 U
Former Concrete Products Manufacturing Operations Area																										
TP100810	CP	TP100810-9.5	9.5	2010	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U	0.0 U
FB-1 (FMW-1)	CP	FB-1-2	2	1990	F	ND	ND	ND	ND	ND	ND	0.07 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-1 (FMW-1)	CP	FB-1-7	7	1990	F	ND	ND	ND	ND	ND	ND	0.077 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-1 (FMW-1)	CP	FB-1-13	13	1990	F	ND	ND	ND	ND	ND	ND	0.087 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-2 (FMW-2)	CP	FB-2-2	2	1990	F	ND	ND	ND	ND	ND	ND	0.1 U	ND	ND	ND	ND	ND	0.075 U	NA	NA	0.075 U	0.075 U	0.075 U	0.075	NA	NA
FB-2 (FMW-2)	CP	FB-2-5.5	5.5	1990	F	ND	ND	ND	ND	ND	ND	0.072 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05	NA	NA
FB-2 (FMW-2)	CP	FB-2-8	8	1990	F	ND	ND	ND	ND	ND	ND	0.079 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05	NA	NA
FB-2 (FMW-2)	CP	FB-2-18.5	18.5	1990	F	ND	ND	ND	ND	ND	ND	0.071 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05	NA	NA
FB-3 (FMW-3)	CP	FB-3-3	3	1990	F	ND	ND	ND	ND	ND	ND	0.063 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-3 (FMW-3)	CP	FB-3-3.5	3.5	1990	F	ND	ND	ND	ND	ND	ND	0.081 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA

Table 2
Previous Soil Sample Analytical Results - Phenols, Phthalates, and PCBs
8th Avenue Terminals, Inc. Site
Seattle, Washington

						Phenols (mg/kg)						Phthalates (mg/kg)						PCBs (mg/kg)								
Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Phenol	2-Methylphenol	4-Methylphenol	2,4-Dimethylphenol	Benzoic Acid	Pentachlorophenol	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Di-n-butyl phthalate	Diethyl phthalate	Dimethyl phthalate	Di-n-octyl phthalate	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs (U=1/2 MRL)	Total PCBs (U=0)
Preliminary Soil Screening Levels[a]						**0.084 A**	**0.23 A**	**0.40 A**	**0.30 A**	**0.87 A**	**0.14 A**	**0.11 A**	**0.05 A**	**0.26 AC**	**0.20 AC**	**0.094 AC***	**0.07 A**	**0.036 A**	**0.036 A**	**0.036 A**	**0.036 A**	**0.036 A**	**0.036 A**	**0.036 A**	--	--
Laboratory PQLs						**0.084**	**0.23**	**0.40**	**0.30**	**0.87**	**0.14**	**0.11**	**0.05**	**0.062**	**0.051**	**0.044**	**0.07**	**0.036**	**0.036**	**0.036**	**0.036**	**0.036**	**0.036**	**0.036**	--	--
FB-3 (FMW-3)	CP	FB-3-13.5	13.5	1990	F	ND	ND	ND	ND	ND	ND	0.080 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-4	CP	FB-4-2	2	1990	F	ND	ND	ND	ND	ND	ND	0.060 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-4	CP	FB-4-8	8	1990	F	ND	ND	ND	ND	ND	ND	0.072 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-4	CP	FB-4-11	11	1990	F	ND	ND	ND	ND	ND	ND	**0.15**	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FSS2	CP	FSS2	0.5	1990	F	ND	ND	ND	ND	ND	ND	1.8 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
FSS3	CP	FSS3	0.5	1990	F	ND	ND	ND	ND	ND	ND	1.7 U	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
HC-2	CP	HC-2/S-2	2	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.099 U	0.099 U	0.22 U	0.0 U
SLR-1	CP	SLR1-1	1	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	**0.058** Ic	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-1	CP	SLR-1-6	6	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	**0.055** Ic	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-1	CP	SLR1-10	10	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	**0.079** Ic	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-2	CP	SLR2-1	1	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-2	CP	SLR2-6	6	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-2	CP	SLR2-10	10	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	**0.084** Ic	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-3	CP	SLR3-1	1	2011	F	0.084 U	2.3 U	0.4[b] U	3 U	8.7 U	1.4 U	1.1 U	0.5 U	0.62 U	0.51 U	0.44 U	0.7 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-3	CP	SLR3-6	6	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-3	CP	SLR3-10	10	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	**0.055** Ic	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-5	CP	SLR5-3	3	2011	F	4.2 U	12 U	0.4[b] U	15 U	44 U	7 UJ	5.5 U	2.5 U	3.1 UJ	**4.3** Ic	2.2 U	3.5 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-5	CP	SLR5-6	6	2011	F	4.2 U	12 U	0.4[b] U	15 U	44 U	7 U	5.5 U	2.5 U	3.1 U	**3.4** Ic	2.2 U	3.5 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-5	CP	SLR5-10	10	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-6	CP	SLR6-1	1	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-6	CP	SLR6-5	5	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-6	CP	SLR6-10	10	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-7	CP	SLR7-1	1	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	**0.052** Ic	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-7	CP	SLR7-5	5	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	**0.051** Ic	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-7	CP	SLR7-10	10	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	**0.051** Ic	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SS-1	CP	SS-1	0.5	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U	0.038 U	0.038 U	0.038 U	0.038 U	0.078 U	0.078 U	0.17 U	0.0 U
SS-2	CP	SS-2	0.5	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.088 U	0.088 U	0.20 U	0.0 U
SS-4	CP	SS-4	0.5	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.12 U	0.079 U	0.20 U	0.0 U
SS-5	CP	SS-5	0.5	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.039 U	0.039 U	0.039 U	0.039 U	**0.89**	0.079 U	0.079 U	**1.0**	**0.89**
Former Pipe & Chain Manufacturing Area																										
CMW-5	PC	CMW-5-5	5	2008	D	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U	0.0 U
CMW-6	PC	CMW-6-5	5	2008	D	3 U	3 U	3 U	3 U	30 U	3 U	3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.3**	0.1 U	**0.6**	**0.3**
CMW-7	PC	CMW-7-5	5	2008	D	3 U	3 U	3 U	3 U	30 U	3 U	3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.7**	0.1 U	**1.0**	**0.7**
CMW-7	PC	CMW-7-7	7	2008	D	3 U	3 U	3 U	3 U	30 U	3 U	3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.2**	0.1 U	**0.5**	**0.2**
DB4	PC	DB4-6	6	1990	D	0.69 U	0.35 U	0.35 U	0.69 U	3.5 U	**0.0044** J	0.35 U	0.35 U	**0.35**	0.35 U	0.35 U	0.35 U	0.05 U	NA	NA	0.05 U	0.05 U	0.13 U	0.1 U	NA	NA
DB4	PC	DB4-8.5	8.5	1990	D	0.26 U	0.13 U	0.13 U	0.26 U	1.3 U	0.005 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB4	PC	DB4-11	11	1990	D	0.17 U	0.085 U	0.085 U	0.17 U	0.85 U	0.005 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.085 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB5	PC	DB5-2	2	1990	D	0.74 U	0.37 U	0.37 U	0.74 U	3.7 U	**0.024**	**0.45** B	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.05 U	NA	NA	0.05 U	0.08 U	0.2 U	0.2 U	NA	NA
DB5	PC	DB5-8	8	1990	D	0.12 U	0.062 U	0.062 U	0.12 U	0.62 U	0.005 U	**0.28** B	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB5	PC	DB5-11	11	1990	D	0.14 U	0.068 U	0.068 U	0.14 U	0.68 U	0.005 U	**0.11** B	0.068 U	0.068 U	0.068 U	0.068 U	0.068 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB6 (DMW6)	PC	DB6-2	2	1990	D	0.61 U	0.3 U	0.3 U	0.61 U	3 U	**0.27**	**0.39** B	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.05 U	NA	NA	0.05 U	0.05 U	**0.32**	0.17 U	NA	NA
DB6 (DMW6)	PC	DB6-4.5	4.5	1990	D	**4.3**	**6**	**15**	**9.3**	5.7 U	**0.69**	**3.2** MB	0.57 U	0.57 U	0.57 U	0.57 U	0.57 U	1.0 U	NA	NA	1.0 U	1.0 U	**2.5**	2.5 U	NA	NA
DB6 (DMW6)	PC	DB6-7	7	1990	D	**0.88**	**0.86**	**2.7**	**2.5**	3.5 U	**0.28**	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.07 U	NA	NA	0.07 U	0.07 U	0.5 U	0.3 U	NA	NA
DB6 (DMW6)	PC	DB6-10	10	1990	D	0.16 U	0.078 U	0.078 U	0.16 U	0.78 U	0.005 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB6 (DMW6)	PC	DB6-13	13	1990	D	**0.1** J	**0.099**	**0.33**	**0.073** J	0.9 U	**0.026**	0.09 U	0.009 U	0.09 U	0.009 U	0.009 U	0.009 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA

Table 2
Previous Soil Sample Analytical Results - Phenols, Phthalates, and PCBs
8th Avenue Terminals, Inc. Site
Seattle, Washington

						Phenols (mg/kg)						Phthalates (mg/kg)						PCBs (mg/kg)								
Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Phenol	2-Methylphenol	4-Methylphenol	2,4-Dimethylphenol	Benzoic Acid	Pentachlorophenol	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Di-n-butyl phthalate	Diethyl phthalate	Dimethyl phthalate	Di-n-octyl phthalate	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs (U=1/2 MRL)	Total PCBs (U=0)
					Preliminary Soil Screening Levels[a]	**0.084** A	**0.23** A	**0.40** A	**0.30** A	**0.87** A	**0.14** A	**0.11** A	**0.05** A	**0.26** AC	**0.20** AC	**0.094** AC*	**0.07** A	**0.036** A	**0.036** A	**0.036** A	**0.036** A	**0.036** A	**0.036** A	**0.036** A	--	--
					Laboratory PQLs	**0.084**	**0.23**	**0.40**	**0.30**	**0.87**	**0.14**	**0.11**	**0.05**	**0.062**	**0.051**	**0.044**	**0.07**	**0.036**	**0.036**	**0.036**	**0.036**	**0.036**	**0.036**	**0.036**	--	--
DB6 (DMW6)	PC	DB6-16	16	1990	D	0.17 U	0.084 U	0.084 U	0.17 U	0.84 U	0.005 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.084 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB6 (DMW6)	PC	DB6-18.5	18.5	1990	D	0.19 U	0.093 U	0.093 U	0.19 U	0.93 U	**0.042** J	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB7	PC	DB7-6	6	1990	D	0.12 U	0.06 U	0.06 U	0.12 U	0.6 U	0.005 U	**0.13** B	0.06 U	**0.08**	0.06 U	0.06 U	0.06 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB7	PC	DB7-8.5	8.5	1990	D	0.15 U	0.073 U	0.073 U	0.15 U	0.73 U	**0.0057**	**0.49** B	0.073 U	**0.054** J	0.073 U	0.073 U	0.073 U	0.05 U	NA	NA	0.05 U	0.05 U	**0.076**	0.05 U	NA	NA
DB7	PC	DB7-11.5	11.5	1990	D	0.28 U	0.14 U	0.14 U	0.28 U	1.4 U	**0.21**	**0.62** B	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.05 U	NA	NA	0.05 U	0.05 U	**0.21**	0.14 U	NA	NA
DB13	PC	DB13-11	11	1990	D	0.15 U	0.076 U	0.076 U	0.15 U	0.76 U	0.38 U	0.076 U	0.76 U	0.076 U	0.076 U	0.76 U	0.76 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
HC-4	PC	HC-4/S-2	5	1988	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	**0.22**	0.076 U	**0.35**	**0.22**
Former Sawmill and Excelsior Factory Areas																										
CMW-3	SE	CMW-3-5	5	2008	D	0.3 U	0.3 U	0.3 U	0.3 U	3 U	0.3 U	0.3 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.35 U	0.0 U
CMW-3	SE	CMW-3-10	10	2008	D	3 U	3 U	3 U	3 U	30 U	3 U	3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.3**	0.1 U	**0.6**	**0.3**
DB8	SE	DB8-5	5	1990	D	0.13 U	0.063 U	0.063 U	0.13 U	0.63 U	**0.015**	**0.043** MB	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB8	SE	DB8-8	8	1990	D	0.15 U	0.074 U	0.074 U	0.15 U	0.74 U	0.005 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB8	SE	DB8-11	11	1990	D	0.16 U	0.078 U	0.078 U	0.16 U	0.78 U	0.005 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB10	SE	DB10-5	5	1990	D	0.17 U	0.083 U	0.083 U	0.17 U	0.83 U	0.41 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	**0.13**	NA	NA
DB10	SE	DB10-8	8	1990	D	0.16 U	0.08 U	0.08 U	0.16 U	0.8 U	0.4 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB10	SE	DB10-11	11	1990	D	0.17 U	0.083 U	0.083 U	0.17 U	0.83 U	0.41 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.083 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-5	SE	FB-5-2	2	1990	F	ND	ND	ND	ND	ND	ND	0.071 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-5	SE	FB-5-8	8	1990	F	ND	ND	ND	ND	ND	ND	0.078 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
FB-5	SE	FB-5-11	11	1990	F	ND	ND	ND	ND	ND	ND	0.085 U	ND	ND	ND	ND	ND	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
SLR-3	SE	SLR3-1	1	2011	F	0.084 U	2.3 U	4.0[b] U	3 U	8.7 U	1.4 U	1.1 U	0.5 U	0.62 U	0.51 U	0.44 U	0.7 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-3	SE	SLR3-6	6	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-3	SE	SLR3-10	10	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	**0.055** Ic	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-4	SE	SLR4-1	1	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-4	SE	SLR4-5	5	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SLR-4	SE	SLR4-10	10	2011	F	0.084 U	0.23 U	0.4[b] U	0.3 U	0.87 U	0.14 U	0.11 U	0.05 U	0.062 U	0.051 U	0.044 U	0.07 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.13 U	0.0 U
SS-3	SE	SS-3	0.5	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.075 U	0.075 U	0.17 U	0.0 U
Former Wood Treating Area																										
DB1	WT	DB1-5	5	1990	D	0.12 U	0.059 U	0.059 U	0.12 U	0.59 U	**0.0047** J	**0.99** B	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB1	WT	DB1-6.5	6.5	1990	D	0.12 U	0.06 U	0.06 U	0.12 U	0.6 U	0.005 U	**1** B	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB1	WT	DB1-9.5	9.5	1990	D	0.12 U	0.062 U	0.062 U	0.12 U	0.62 U	0.005 U	**0.49** B	0.062 U	0.062 U	0.062 U	0.062 U	0.062 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB2 (DMW2)	WT	DB2-3.5	3.5	1990	D	0.12 U	0.058 U	0.058 U	0.12 U	0.58 U	**0.011**	**0.48** B	0.058 U	0.058 U	0.058 U	0.058 U	0.058 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB2 (DMW2)	WT	DB2-4.5	4.5	1990	D	0.61 U	0.31 U	0.31 U	0.61 U	3.1 U	**0.06**	**0.76** B	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.06 U	NA	NA	0.06 U	0.06 U	0.12 U	0.4 U	NA	NA
DB2 (DMW2)	WT	DB2-7	7	1990	D	0.12 U	0.059 U	0.059 U	0.12 U	0.59 U	**0.12**	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.059 U	0.05 U	NA	NA	0.05 U	0.05 U	0.09 U	0.13 U	NA	NA
DB2 (DMW2)	WT	DB2-9.5	9.5	1990	D	0.15 U	0.075 U	0.075 U	0.15 U	0.75 U	**0.0046** J	**0.37** B	0.075 U	0.075 U	0.075 U	0.075 U	0.075 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB2 (DMW2)	WT	DB2-12	12	1990	D	0.15 U	0.073 U	0.073 U	0.15 U	0.73 U	**0.0061**	**0.27** B	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB2 (DMW2)	WT	DB2-18	18	1990	D	0.14 U	0.07 U	0.07 U	0.14 U	0.7 U	**0.011**	**0.45**	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB3 (DMW3)	WT	DB3-2	2	1990	D	0.16 U	0.082 U	0.082 U	0.16 U	0.82 U	0.005 U	**0.62** B	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB3 (DMW3)	WT	DB3-3.5	3.5	1990	D	0.75 U	0.37 U	0.37 U	0.75 U	3.7 U	**0.02**	**0.85** B	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.05 U	NA	NA	0.05 U	0.05 U	0.4 U	0.4 U	NA	NA
DB3 (DMW3)	WT	DB3-6	6	1990	D	0.13 U	0.063 U	0.063 U	0.13 U	0.63 U	0.005 U	**0.16** B	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB3 (DMW3)	WT	DB3-7.5	7.5	1990	D	0.14 U	0.073 U	0.073 U	0.14 U	0.72 U	0.005 U	**0.51** MB	0.073 U	0.073 U	0.073 U	0.073 U	0.073 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB3 (DMW3)	WT	DB3-9	9	1990	D	0.17 U	0.086 U	0.086 U	0.17 U	0.85 U	0.005 U	**0.38** B	0.086 U	0.086 U	0.086 U	0.086 U	0.086 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB3 (DMW3)	WT	DB3-13.5	13.5	1990	D	0.13 U	0.066 U	0.066 U	0.13 U	0.66 U	0.005 U	**0.41** B	0.066 U	0.066 U	0.066 U	0.066 U	0.066 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA

Table 2
Previous Soil Sample Analytical Results - Phenols, Phthalates, and PCBs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Phenols (mg/kg) Phenol	2-Methylphenol	4-Methylphenol	2,4-Dimethylphenol	Benzoic Acid	Pentachlorophenol	Phthalates (mg/kg) Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Di-n-butyl phthalate	Diethyl phthalate	Dimethyl phthalate	Di-n-octyl phthalate	PCBs (mg/kg) Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs (U=1/2 MRL)	Total PCBs (U=0)
Preliminary Soil Screening Levels[a]						0.084 A	0.23 A	0.40 A	0.30 A	0.87 A	0.14 A	0.11 A	0.05 A	0.26 AC	0.20 AC	0.094 AC*	0.07 A	0.036 A	0.036 A	0.036 A	0.036 A	0.036 A	0.036 A	0.036 A	--	--
Laboratory PQLs						0.084	0.23	0.40	0.30	0.87	0.14	0.11	0.05	0.062	0.051	0.044	0.07	0.036	0.036	0.036	0.036	0.036	0.036	0.036	--	--
DB3 (DMW3)	WT	DB3-17	17	1990	D	0.16 U	0.078 U	0.078 U	0.16 U	0.78 U	0.005 U	**0.37** B	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB8	WT	DB8-5	5	1990	D	0.13 U	0.063 U	0.063 U	0.13 U	0.63 U	**0.015**	**0.043** MB	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB8	WT	DB8-8	8	1990	D	0.15 U	0.074 U	0.074 U	0.15 U	0.74 U	0.005 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB8	WT	DB8-11	11	1990	D	0.16 U	0.078 U	0.078 U	0.16 U	0.78 U	0.005 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB9	WT	DB9-5	5	1990	D	**0.038**	**0.066**	**0.066**	**0.13**	0.66 U	**0.007**	**0.06**	0.066 U	**0.066**	0.066 U	0.066 U	0.066 U	0.05 U	NA	NA	0.05 U	0.05 U	**0.07**	0.05 U	NA	NA
DB9	WT	DB9-8	8	1990	D	0.14 U	0.069 U	0.069 U	0.14 U	0.69 U	0.005 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.069 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB9	WT	DB9-11	11	1990	D	0.18 U	0.091 U	0.091 U	0.18 U	0.9 U	0.005 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.091 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
DB11	WT	DB11-6.5	6.5	1990	D	0.16 U	0.082 U	0.082 U	0.16 U	0.82 U	0.005 U	**0.79** B	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.05 U	NA	NA	0.05 U	0.05 U	**0.13**	0.05 U	NA	NA
DB11	WT	DB11-8	8	1990	D	2.1 U	**0.44** M	1.1 U	**2.2** M	11 U	**0.008**	**2.6** B	1.1 U	21 U	1.1 U	1.1 U	1.1 U	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	1 U	NA	NA
DB11	WT	DB11-9.5	9.5	1990	D	0.41 U	0.21 U	0.21 U	**0.34** J	2.1 U	0.005 U	**0.87** B	0.21 U	5.1 U	0.21 U	0.21 U	0.21 U	0.05 U	NA	NA	0.05 U	0.05 U	0.1 U	0.1 U	NA	NA
DB12	WT	DB12-5	5	1990	D	0.18 U	0.089 U	0.089 U	0.18 U	0.89 U	0.44 U	0.089 U	0.089 U	0.089 U	0.089 U	0.089 U	0.089 U	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	**0.11**	NA	NA
DB12	WT	DB12-11.5	11.5	1990	D	3.1 U	1.5 U	1.5 U	3.1 U	15 U	7.6 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	0.1 U	NA	NA	0.1 U	0.1 U	0.1 U	**2.1**	NA	NA
DB14	WT	DB14-9.5	9.5	1990	D	0.14 U	0.071 U	0.071 U	0.14 U	0.71 U	0.35 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.071 U	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
HC-1	WT	HC-1/S-1	2.5	1988	D	0.073 U	0.073 U	0.073 U	0.073 U	1.8 U	0.73 U	NA	NA	NA	NA	NA	NA	0.036 U	0.036 U	0.036 U	0.036 U	**0.036**	**5**	0.073 U	**5.1**	**5.0**
HC-1	WT	HC-1/S-3	5	1988	D	0.035 U	0.035 U	0.035 U	0.035 U	0.89 U	0.35 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-1A	WT	HC-1A/S-4	7.5	1988	D	0.035 U	0.035 U	0.035 U	0.035 U	0.88 U	0.35 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-1; PQLs are identified with an A.

[b] = 3-Methylphenol + 4-Methylphenol.

All values in milligrams per kilogram (mg/kg).
Phenols and phthalates by EPA Methods 8270 or SW8270.
Polychlorinated biphenyls (PCBs) by EPA Method SW8080 or 8080.
Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening levels. Highlighted non-detect values are at least 2 times greater than the proposed screening levels and are above the PQLs.
* = Most stringent ARAR is consistent across multiple sources.
A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.
U = Chemical not detected at detection limit shown.
B = Laboratory report indicated chemical detected in associated blank; presence in sample may be attributed to field/lab contamination.
J = Laboratory report indicated that the reported value is an estimate.
M = Laboratory report indicated that reported value is an estimate, but with low spectral match parameters.
lc = Laboratory reported that the compound is likely due to laboratory contamination.
ND = Chemical not detected; however, detection limit not available.
NA = Not analyzed or value cannot be determined.

Potential Source Areas:
- DF = Dredge fill area.
- PC = Former pipe and chain manufacturing area.
- SE = Former sawmill and excelsior factory areas.
- AW = Former aluminum window manufacturing area.
- CP = Former concrete products manufacturing operation area.
- WT = Former wood treating area.

Table 3
Previous Soil Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

						Metals (mg/kg)																					
Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Arsenic, Inorganic		Barium		Cadmium		Chromium, Total		Copper		Lead		Mercury		Nickel		Selenium		Silver		Zinc	
					Preliminary Soil Screening Levels[a]	7	BR	23.1	S	1.0	BR	48	BR	36	BR	25	AG*	0.07[b]	BR	48	BR	0.85	A	0.27	A	85	BR
					Laboratory PQLs	2.3		0.12		0.15		1.04		0.34		0.18		0.025		0.44		0.85		0.27		0.64	
Dredge Fill Area																											
CMW-1	DF	CMW1-5	5	2008	F	**2.17**		**31.7**		1	U	**11.3**		**9.18**		**2.42**		0.2	U	NA		1	U	1	U	NA	
CMW-2a	DF	CMW-2a-4	4	2008	D	**2.14**		**32.6**		1	U	**14.1**		**10.5**		**2.05**		0.2	U	NA		1	U	1	U	NA	
CMW-3	DF	CMW-3-5	5	2008	D	**4.66**		**32.1**		1	U	**10.7**		**12**		**3.75**		0.2	U	NA		1	U	1	U	NA	
CMW-3	DF	CMW-3-10	10	2008	D	**38**		**87.9**		1	U	**20.1**		**40.3**		**58**		0.2	U	NA		1	U	1	U	NA	
CMW-4	DF	CMW-4-5	5	2008	D	**158**		**81.8**		**1.11**		**16**		**109**		**151**		**0.25**		NA		1	U	1	U	NA	
CMW-5	DF	CMW-5-5	5	2008	D	**184**		**75.5**		1	U	**17.9**		**135**		**186**		0.2	U	NA		1	U	1	U	NA	
DB6 (DMW6)	DF	DB6-2	2	1990	D	**590**		NA		**2.1**		**38.4**		**496**		**434**		NA		**30**		NA		NA		**1,640**	
DB6 (DMW6)	DF	DB6-4.5	4.5	1990	D	**1,760**		NA		**4.9**		**109**		**1,400**		**1,250**		NA		**65**		NA		NA		**4,180**	
DB6 (DMW6)	DF	DB6-7	7	1990	D	**1,220**		NA		**4.1**		**58.3**		**946**		**866**		NA		**33**		NA		NA		**3,220**	
DB6 (DMW6)	DF	DB6-10	10	1990	D	**3.3**		NA		**0.4**		**14.5**		**24.6**		**4**		NA		**10**		NA		NA		**34.8**	
DB6 (DMW6)	DF	DB6-13	13	1990	D	**38**		NA		**0.5**		**14.6**		**48.9**		**30**		NA		**9**		NA		NA		**132**	
DB6 (DMW6)	DF	DB6-16	16	1990	D	**14.2**		NA		0.2	U	**10.4**		**14.9**		**6**		NA		**7**		NA		NA		**44.8**	
DB6 (DMW6)	DF	DB6-18.5	18.5	1990	D	**1.57**		NA		0.2	U	**11.5**		**11**		3	U	NA		**9**		NA		NA		**25.4**	
DB7	DF	DB7-6	6	1990	D	**3.5**		NA		**0.4**		**27.2**		**16.9**		**15**		NA		**38**		NA		NA		**61.6**	
DB7	DF	DB7-8.5	8.5	1990	D	**107**		NA		**0.4**		**29.7**		**91.2**		**116**		NA		**32**		NA		NA		**332**	
DB7	DF	DB7-11.5	11.5	1990	D	**1,090**		NA		**3.6**		**48.3**		**782**		**712**		NA		**33**		NA		NA		**2,600**	
DB13	DF	DB13-11	11	1990	D	**5.3**		NA		0.2	U	**15**		**19.4**		**4**		NA		**10**		NA		NA		**33.1**	
HC-107	DF	HC-107/S1	3	1990	D	**74**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-107	DF	HC-107/S2	5.5	1990	D	4.1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-107	DF	HC-107/S3	7	1990	D	4.8	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-107	DF	HC-107/S4	10	1990	D	4.7	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-107	DF	HC-107/S5	13	1990	D	4.7	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Former Aluminum Window Manufacturing Area																											
FB-1 (FMW-1)	AW	FB-1-2	2	1990	F	**1.34**		NA		0.2	U	**10**		**10.7**		2	U	NA		**7**		NA		NA		**19.9**	
FB-1 (FMW-1)	AW	FB-1-7	7	1990	F	**4.7**		NA		0.2	U	**17.4**		**24**		**4**		NA		**13**		NA		NA		**30.5**	
FB-1 (FMW-1)	AW	FB-1-13	13	1990	F	**3.2**		NA		0.2	U	**16.1**		**19.6**		3	U	NA		**13**		NA		NA		**31.7**	
HA-11	AW	HA-11-1-1.5	1.5	1994	F	NA		NA		NA		NA		NA		**26**		NA		NA		NA		NA		NA	
HA-11	AW	HA-11-1-5.5	5.5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HC-2	AW	HC-2/S-2	Unknown	1988	F	0.2	U	NA		0.01	U	0.1	U	0.1	U	0.1	U	0.005	U	NA		NA		0.1	U	0.1	U
MW-1 (1994)	AW	MW-1-1	1	1994	F	NA		NA		NA		NA		NA		**32**		NA		NA		NA		NA		NA	
MW-1 (1994)	AW	MW-1-5.5	5.5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
SB-8	AW	SB-8 0-1FT	0-1	2009	F	1.1	U	**64**		**0.6**		**17**		NA		**29**		**0.043**		NA		1.1	U	0.54	U	NA	
SB-8	AW	SB-8 4-5FT	4-5	2009	F	1.3	U	**43**		0.32	U	**10**		NA		**0.78**		0.026	U	NA		1.3	U	0.65	U	NA	
SB-9	AW	SB-9 0-1FT	0-1	2009	F	1.2	U	**260**		**1.3**		**18**		NA		**94**		**0.13**		NA		6	U	0.6	U	NA	
SB-9	AW	SB-9 4-5FT	4-5	2009	F	1.2	U	**52**		0.31	U	**15**		NA		**3.1**		**0.032**		NA		**9.6**		0.62	U	NA	

Table 3
Previous Soil Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Metals (mg/kg)																					
						Arsenic, Inorganic		Barium		Cadmium		Chromium, Total		Copper		Lead		Mercury		Nickel		Selenium		Silver		Zinc	
					Preliminary Soil Screening Levels[a]	7	BR	23.1	S	1.0	BR	48	BR	36	BR	25	AG*	0.07[b]	BR	48	BR	0.85	A	0.27	A	85	BR
					Laboratory PQLs	2.3		0.12		0.15		1.04		0.34		0.18		0.025		0.44		0.85		0.27		0.64	
SLR-6	AW	SLR6-1	1	2011	F	4.67		NA		0.21		8.33		12.4		12.8		0.035		6.12		0.85	U	0.27	U	42.7	
SLR-6	AW	SLR6-5	5	2011	F	2.54		NA		0.15	U	8.85		14.9		2.48		0.025	U	6.91		0.85	U	0.27	U	21.5	
SLR-6	AW	SLR6-10	10	2011	F	4.3		NA		0.15	U	8.95		17.9		3.17		0.033		7.2		0.85	U	0.27	U	19.2	
Former Concrete Products Manufacturing Operations Area																											
FB-1 (FMW-1)	CP	FB-1-2	2	1990	F	1.34		NA		0.2	U	10		10.7		2	U	NA		7		NA		NA		19.9	
FB-1 (FMW-1)	CP	FB-1-7	7	1990	F	4.7		NA		0.2	U	17.4		24		4		NA		13		NA		NA		30.5	
FB-1 (FMW-1)	CP	FB-1-13	13	1990	F	3.2		NA		0.2	U	16.1		19.6		3	U	NA		13		NA		NA		31.7	
FB-2 (FMW-2)	CP	FB-2-2	2	1990	F	14.8		NA		1.4		16		27.7		15		NA		10		NA		NA		106	
FB-2 (FMW-2)	CP	FB-2-5,5	5.5	1990	F	1.33		NA		0.2	U	10.6		9.3		3	U	NA		7		NA		NA		21.1	
FB-2 (FMW-2)	CP	FB-2-8	8	1990	F	1.64		NA		0.2	U	10.4		11.5		3	U	NA		9		NA		NA		25.4	
FB-2 (FMW-2)	CP	FB-2-18.5	18.5	1990	F	3.9		NA		0.2	U	10.4		9.8		3	U	NA		8		NA		NA		23.8	
FB-3 (FMW-3)	CP	FB-3-3	3	1990	F	1.98		NA		0.2	U	10.8		11.7		2		NA		14		NA		NA		23.8	
FB-3 (FMW-3)	CP	FB-3-3.5	3.5	1990	F	2.28		NA		0.4		11.3		13		4		NA		11		NA		NA		25.4	
FB-3 (FMW-3)	CP	FB-3-13.5	13.5	1990	F	1.91		NA		0.2	U	11.2		13.7		3	U	NA		8		NA		NA		21.8	
FB-4	CP	FB-4-2	2	1990	F	1.5		NA		0.2	U	8.6		8.6		3	U	NA		7		NA		NA		21.9	
FB-4	CP	FB-4-8	8	1990	F	3.1		NA		0.2	U	16		19.7		3	U	NA		12		NA		NA		28.4	
FB-4	CP	FB-4-11	11	1990	F	9.7		NA		0.3	U	13.3		19.6		3	U	NA		9		NA		NA		26	
HA-1	CP	HA-1-1	1	1994	F	NA		NA		NA		NA		NA		30		NA		NA		NA		NA		NA	
HA-1	CP	HA-1-5	5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HA-2	CP	HA-2-1	1	1994	F	NA		NA		NA		NA		NA		17		NA		NA		NA		NA		NA	
HA-3	CP	HA-3-1	1	1994	F	NA		NA		NA		NA		NA		23		NA		NA		NA		NA		NA	
HA-3	CP	HA-3-5	5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HA-4	CP	HA-4-1	1	1994	F	NA		NA		NA		NA		NA		16		NA		NA		NA		NA		NA	
HA-4	CP	HA-4-5	5	1994	F	NA		NA		NA		NA		NA		17		NA		NA		NA		NA		NA	
HA-5	CP	HA-5-1	1	1994	F	NA		NA		NA		NA		NA		17		NA		NA		NA		NA		NA	
HA-5	CP	HA-5-5	5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HA-6	CP	HA-6-1	1	1994	F	NA		NA		NA		NA		NA		30		NA		NA		NA		NA		NA	
HA-6	CP	HA-6-5	5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HA-7	CP	HA-7-1	1	1994	F	NA		NA		NA		NA		NA		16		NA		NA		NA		NA		NA	
HA-7	CP	HA-7-5	5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HA-8	CP	HA-8-1	1	1994	F	NA		NA		NA		NA		NA		17		NA		NA		NA		NA		NA	
HA-8	CP	HA-8-5	5	1994	F	NA		NA		NA		NA		NA		40		NA		NA		NA		NA		NA	
HA-9	CP	HA-9-1	1	1994	F	NA		NA		NA		NA		NA		34		NA		NA		NA		NA		NA	
HA-9	CP	HA-9-5	5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HA-10	CP	HA-10-1	1	1994	F	NA		NA		NA		NA		NA		22		NA		NA		NA		NA		NA	
HA-10	CP	HA-10-1	5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	

Table 3
Previous Soil Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

						Metals (mg/kg)																					
Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Arsenic, Inorganic		Barium		Cadmium		Chromium, Total		Copper		Lead		Mercury		Nickel		Selenium		Silver		Zinc	
					Preliminary Soil Screening Levels[a]	7	BR	23.1	S	1.0	BR	48	BR	36	BR	25	AG*	0.07[b]	BR	48	BR	0.85	A	0.27	A	85	BR
					Laboratory PQLs	2.3		0.12		0.15		1.04		0.34		0.18		0.025		0.44		0.85		0.27		0.64	
HA-11	CP	HA-11-1-1.5	1.5	1994	F	NA		NA		NA		NA		NA		26		NA		NA		NA		NA		NA	
HA-11	CP	HA-11-1-5.5	5.5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HA-12	CP	HA-12-1-1	1	1994	F	NA		NA		NA		NA		NA		26		NA		NA		NA		NA		NA	
HA-12	CP	HA-12-1-5	5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HA-13	CP	HA-13-1-1	1	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HA-13	CP	HA-13-1-5.5	5.5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
HC-2	CP	HC-2/S-2	Unknown	1988	F	0.2	U	NA		0.01	U	0.1	U	0.1	U	0.1	U	0.005	U	NA		NA		0.1	U	0.1	U
HC-6	CP	HC-6-2.5	2.5	1988	D	5.4		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-6	CP	HC-6-4	4	1988	D	2.2		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-6	CP	HC-6-6.5	6.5	1988	D	1.6		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-6	CP	HC-6-8	8	1988	D	2		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-7	CP	HC-7-2.5	2.5	1988	D	1.6		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-7	CP	HC-7-4	4	1988	D	2		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-7	CP	HC-7-6.5	6.5	1988	D	1.8		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-8	CP	HC-8-2.5	2.5	1988	D	14		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-8	CP	HC-8-4	4	1988	D	2.2		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-8	CP	HC-8-6.5	6.5	1988	D	2.5		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
MW-1 (1994)	CP	MW-1-1	1	1994	F	NA		NA		NA		NA		NA		32		NA		NA		NA		NA		NA	
MW-1 (1994)	CP	MW-1-5.5	5.5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
MW-2	CP	MW-2-1,5	1.5	1994	F	NA		NA		NA		NA		NA		25		NA		NA		NA		NA		NA	
MW-2	CP	MW-2-6	6	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
MW-3	CP	MW-3-1	1	1994	F	NA		NA		NA		NA		NA		21		NA		NA		NA		NA		NA	
MW-3	CP	MW-3-5.5	5.5	1994	F	NA		NA		NA		NA		NA		25		NA		NA		NA		NA		NA	
SB-1	CP	SB-1 0-1FT	0-1	2009	F	1.1	U	98		0.75		13		NA		40		0.035		NA		2.2	U	0.54	U	NA	
SB-1	CP	SB-1 4-5FT	4-5	2009	F	2.2	U	45		0.31		11		NA		11		0.022	U	NA		1.1	U	0.54	U	NA	
SB-2	CP	SB-2 0-1FT	0-1	2009	F	2	U	52		0.26	U	11		NA		1.4		0.02	U	NA		1	U	0.51	U	NA	
SB-2	CP	SB-2 4-5FT	4-5	2009	F	8.2		150		3.2		17		NA		110		0.062		NA		5.7	U	0.57	U	NA	
SB-3	CP	SB-3 0-1FT	0-1	2009	F	1.1	U	130		0.77		44		NA		44		0.034		NA		2.2	U	0.54	U	NA	
SB-3	CP	SB-3 4-5FT	4-5	2009	F	1.1	U	33		0.28	U	6.2		NA		11		0.022	U	NA		1.1	U	0.55	U	NA	
SB-4	CP	SB-4 0-1FT	0-1	2009	F	1.1	U	89		1		18		NA		40		0.029		NA		2.2	U	0.54	U	NA	
SB-4	CP	SB-4 4-5FT	4-5	2009	F	2.1	U	34		0.27	U	7.1		NA		6.1		0.021	U	NA		1.1	U	0.54	U	NA	
SB-5	CP	SB-5 0-1FT	0-1	2009	F	1.1	U	73		0.57		14		NA		40		0.022	U	NA		1.1	U	0.56	U	NA	
SB-5	CP	SB-5 4-5FT	4-5	2009	F	1.1	U	39		0.28	U	9.2		NA		6.5		0.022	U	NA		1.1	U	0.56	U	NA	
SB-6	CP	SB-6 0-1FT	0-1	2009	F	7.4		89		0.76		19		NA		27		0.052		NA		2.3	U	0.57	U	NA	
SB-6	CP	SB-6 4-5FT	4-5	2009	F	1.1	U	24		0.27	U	7.2		NA		0.72		0.021	U	NA		1.1	U	0.53	U	NA	
SB-8	CP	SB-8 0-1FT	0-1	2009	F	1.1	U	64		0.6		17		NA		29		0.043		NA		1.1	U	0.54	U	NA	
SB-8	CP	SB-8 4-5FT	4-5	2009	F	1.3	U	43		0.32	U	10		NA		0.78		0.026	U	NA		1.3	U	0.65	U	NA	
SB-9	CP	SB-9 0-1FT	0-1	2009	F	1.2	U	260		1.3		18		NA		94		0.13		NA		6	U	0.6	U	NA	
SB-9	CP	SB-9 4-5FT	4-5	2009	F	1.2	U	52		0.31	U	15		NA		3.1		0.032		NA		9.6		0.62	U	NA	
SB-10	CP	SB-10 0-1FT	0-1	2009	F	3.4		170		1		29		NA		75		0.072		NA		16		0.55	U	NA	
SB-10	CP	SB-10 4-5FT	4-5	2009	F	1.2	U	48		0.31	U	17		NA		6.2		0.025	U	NA		9		1.7		NA	

Table 3
Previous Soil Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Metals (mg/kg) Arsenic, Inorganic		Barium		Cadmium		Chromium, Total		Copper		Lead		Mercury		Nickel		Selenium		Silver		Zinc	
					Preliminary Soil Screening Levels[a]	7	BR	23.1	S	1.0	BR	48	BR	36	BR	25	AG*	0.07[b]	BR	48	BR	0.85	A	0.27	A	85	BR
					Laboratory PQLs	2.3		0.12		0.15		1.04		0.34		0.18		0.025		0.44		0.85		0.27		0.64	
SB-11	CP	SB-11 0-1FT	0-1	2009	F	5.4	U	64		0.27	U	14		NA		20		0.021	U	NA		17		0.54	U	NA	
SB-11	CP	SB-11 4-5FT	4-5	2009	F	1.3	U	49		0.32	U	14		NA		2.3		0.026	U	NA		9		0.64	U	NA	
SLR-1	CP	SLR1-1	1	2011	F	3.56		NA		0.23		6.02		8.09		5.45		0.025		5.54		0.85	U	0.27	U	17.6	
SLR-1	CP	SLR-1-6	6	2011	F	2.75		NA		0.15	U	9.02		18.4		2.96		0.035		7.37		0.85	U	0.27	U	18.3	
SLR-1	CP	SLR1-10	10	2011	F	3.57		NA		0.16		10.1		18.2		3.74		0.11		7.55		0.85	U	0.27	U	19	
SLR-2	CP	SLR2-1	1	2011	F	3.55		NA		0.15	U	6.58		9.97		17.2		0.049		4.61		0.85	U	0.27	U	62.9	
SLR-2	CP	SLR2-6	6	2011	F	3.82		NA		0.67		16.3		52.1		41.2		0.13		9.17		0.85	U	0.27	U	348	
SLR-2	CP	SLR2-10	10	2011	F	5.69		NA		0.28		13.7		26.2		5.21		0.043		12.4		0.85	U	0.27	U	36.8	
SLR-3	CP	SLR3-1	1	2011	F	6.94		NA		1.73		17.5		36.2		105		0.071		17.6		0.85	U	0.27	U	321	
SLR-3	CP	SLR3-6	6	2011	F	2.6		NA		0.16		8.11		14.6		2.65		0.029		6.53		0.85	U	0.27	U	23.4	
SLR-3	CP	SLR3-10	10	2011	F	2.06		NA		0.15	U	6.96		12.7		1.83		0.051		4.2		0.85	U	0.27	U	14	
SLR-5	CP	SLR5-3	3	2011	F	2.64		NA		0.20		7.91		22.2		8.75		0.033		7.31		0.85	U	0.27	U	29.6	
SLR-5	CP	SLR5-6	6	2011	F	2.35		NA		0.15	U	8.35		16.1		2.32		0.028		6.98		0.85	U	0.27	U	22.6	
SLR-5	CP	SLR5-10	10	2011	F	1.16		NA		0.15	U	6.17		11.3		3.91		0.025		4.94		0.85	U	0.27	U	22.3	
SLR-6	CP	SLR6-1	1	2011	F	4.67		NA		0.21		8.33		12.4		12.8		0.035		6.12		0.85	U	0.27	U	42.7	
SLR-6	CP	SLR6-5	5	2011	F	2.54		NA		0.15	U	8.85		14.9		2.48		0.025	U	6.91		0.85	U	0.27	U	21.5	
SLR-6	CP	SLR6-10	10	2011	F	4.3		NA		0.15	U	8.95		17.9		3.17		0.033		7.2		0.85	U	0.27	U	19.2	
SLR-7	CP	SLR7-1	1	2011	F	1.4		NA		0.15	U	4.34		6.27		1.24		0.033		3.6		0.85	U	0.27	U	12.6	
SLR-7	CP	SLR7-5	5	2011	F	7.65		NA		0.5		8.55		27.4		21.3		0.036		11.5		0.85	U	0.27	U	58.6	
SLR-7	CP	SLR7-10	10	2011	F	3.46		NA		0.15		9.95		17.4		3.11		0.039		6.95		0.85	U	0.27	U	18.2	
Former Pipe & Chain Manufacturing Area																											
CMW-5	PC	CMW-5-5	5	2008	D	184		75.5		1	U	17.9		135		186		0.2	U	NA		1	U	1	U	NA	
CMW-6	PC	CMW-6-5	5	2008	D	121		53.2		1	U	16.5		82.4		101		0.2	U	NA		1	U	1	U	NA	
CMW-7	PC	CMW-7-5	5	2008	D	236		77.4		1	U	23.5		162		208		0.26		NA		1	U	1	U	NA	
CMW-7	PC	CMW-7-7	7	2008	D	27.5		60		1	U	15.6		29.1		34.4		0.2	U	NA		1	U	1	U	NA	
DB4	PC	DB4-6	6	1990	D	8.5		NA		0.3	U	18.5		49.2		319		NA		16		NA		NA		86.7	
DB4	PC	DB4-8.5	8.5	1990	D	13.9		NA		0.3		16.8		27.2		19		NA		12		NA		NA		61.4	
DB4	PC	DB4-11	11	1990	D	4		NA		0.3	U	15.2		21.2		3	U	NA		9		NA		NA		26.1	
DB5	PC	DB5-2	2	1990	D	205		NA		1.2	U	70.7		195		166		NA		35		NA		NA		627	
DB5	PC	DB5-8	8	1990	D	1.16		NA		0.3		10.1		18.4		3	U	NA		7		NA		NA		27.2	
DB5	PC	DB5-11	11	1990	D	2.33		NA		0.2	U	11.5		14.2		3		NA		7		NA		NA		24.6	
DB6 (DMW6)	PC	DB6-2	2	1990	D	590		NA		2.1		38.4		496		434		NA		30		NA		NA		1,640	
DB6 (DMW6)	PC	DB6-4.5	4.5	1990	D	1,760		NA		4.9		109		1,400		1,250		NA		65		NA		NA		4,180	
DB6 (DMW6)	PC	DB6-7	7	1990	D	1,220		NA		4.1		58.3		946		866		NA		33		NA		NA		3,220	
DB6 (DMW6)	PC	DB6-10	10	1990	D	3.3		NA		0.4		14.5		24.6		4		NA		10		NA		NA		34.8	
DB6 (DMW6)	PC	DB6-13	13	1990	D	38		NA		0.5		14.6		48.9		30		NA		9		NA		NA		132	
DB6 (DMW6)	PC	DB6-16	16	1990	D	14.2		NA		0.2	U	10.4		14.9		6		NA		7		NA		NA		44.8	
DB6 (DMW6)	PC	DB6-18.5	18.5	1990	D	1.57		NA		0.2	U	11.5		11		3	U	NA		9		NA		NA		25.4	
DB7	PC	DB7-6	6	1990	D	3.5		NA		0.4		27.2		16.9		15		NA		38		NA		NA		61.6	

Table 3
Previous Soil Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Metals (mg/kg)																					
						Arsenic, Inorganic		Barium		Cadmium		Chromium, Total		Copper		Lead		Mercury		Nickel		Selenium		Silver		Zinc	
Preliminary Soil Screening Levels[a]						7	BR	23.1	S	1.0	BR	48	BR	36	BR	25	AG*	0.07[b]	BR	48	BR	0.85	A	0.27	A	85	BR
Laboratory PQLs						2.3		0.12		0.15		1.04		0.34		0.18		0.025		0.44		0.85		0.27		0.64	
DB7	PC	DB7-8.5	8.5	1990	D	**107**		NA		**0.4**		**29.7**		**91.2**		**116**		NA		**32**		NA		NA		**332**	
DB7	PC	DB7-11.5	11.5	1990	D	**1,090**		NA		**3.6**		**48.3**		**782**		**712**		NA		**33**		NA		NA		**2,600**	
DB13	PC	DB13-11	11	1990	D	**5.3**		NA		0.2	U	**15**		**19.4**		**4**		NA		**10**		NA		NA		**33.1**	
HC-101	PC	HC-101/S1	3	1990	D	**5.2**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-101	PC	HC-101/S3	8	1990	D	5.1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-101	PC	HC-101/S4	10	1990	D	5.2	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-103	PC	HC-103/S3	6	1990	D	4,4	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-103	PC	HC-103/S4	10	1990	D	**75**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-103	PC	HC-103/S5	11	1990	D	5.9	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-103	PC	HC-103/S5D	11	1990	D	5.3	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-103	PC	HC-103/S6	12	1990	D	5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-103	PC	HC-103/S7	13	1990	D	5.2	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-104	PC	HC-104/S2	5	1990	D	**26**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-104	PC	HC-104/S3	6	1990	D	5.4	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-104	PC	HC-104/S4	7	1990	D	**8.6**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-104	PC	HC-104/S5	10	1990	D	4.8	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-105	PC	HC-105/S2	5	1990	D	4	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-105	PC	HC-105/S3	7	1990	D	4.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-105	PC	HC-105/S4	10	1990	D	4.9	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-105	PC	HC-105/S5	13	1990	D	5.1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-106	PC	HC-106/S1	2	1990	D	**330**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-106	PC	HC-106/S2	5	1990	D	**860**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-106	PC	HC-106/S3	7	1990	D	3.9	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-106	PC	HC-106/S3D	7	1990	D	**5.5**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-106	PC	HC-106/S4	10	1990	D	4.7	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-106	PC	HC-106/S5	13	1990	D	5.4	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-107	PC	HC-107/S1	3	1990	D	**74**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-107	PC	HC-107/S2	5.5	1990	D	4.1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-107	PC	HC-107/S3	7	1990	D	4.8	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-107	PC	HC-107/S4	10	1990	D	4.7	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-107	PC	HC-107/S5	13	1990	D	4.7	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-108	PC	HC-108/S3	6	1990	D	4.7	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-108	PC	HC-108/S4	8	1990	D	4.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-108	PC	HC-108/S5	10	1990	D	5.3	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-108	PC	HC-108/S6	13	1990	D	4.6	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-110	PC	HC-110/S1	2.5	1990	D	**17**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-110	PC	HC-110/S3	5.5	1990	D	5.4	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-110	PC	HC-110/S4	7	1990	D	5.2	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-110	PC	HC-110/S5	10	1990	D	4	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Former Sawmill and Excelsior Factory Areas																											
CMW-3	SE	CMW-3-5	5	2008	D	**4.66**		**32.1**		1	U	**10.7**		**12**		**3.75**		0.2	U	NA		1	U	1	U	NA	

Table 3
Previous Soil Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Metals (mg/kg) Arsenic, Inorganic		Barium		Cadmium		Chromium, Total		Copper		Lead		Mercury		Nickel		Selenium		Silver		Zinc	
					Preliminary Soil Screening Levels[a]	7	BR	23.1	S	1.0	BR	48	BR	36	BR	25	AG*	0.07[b]	BR	48	BR	0.85	A	0.27	A	85	BR
					Laboratory PQLs	2.3		0.12		0.15		1.04		0.34		0.18		0.025		0.44		0.85		0.27		0.64	
CMW-3	SE	CMW-3-10	10	2008	D	38		87.9		1	U	20.1		40.3		58		0.2	U	NA		1	U	1	U	NA	
DB8	SE	DB8-5	5	1990	D	18		NA		0.5		19		83		45		NA		18		NA		NA		160	
DB8	SE	DB8-8	8	1990	D	2.9		NA		0.2	U	12.6		15.9		3	U	NA		9		NA		NA		27.3	
DB8	SE	DB8-11	11	1990	D	2.22		NA		0.3	U	12.1		15.9		3	U	NA		7		NA		NA		22.6	
DB10	SE	DB10-5	5	1990	D	133		NA		0.8		17.2		101		104		NA		14		NA		NA		460	
DB10	SE	DB10-8	8	1990	D	1.82		NA		0.2	U	12.9		16.3		3	U	NA		8		NA		NA		23.7	
DB10	SE	DB10-11	11	1990	D	9.1		NA		0.3	U	14.7		19.4		4		NA		10		NA		NA		35.5	
FB-5	SE	FB-5-2	2	1990	F	3.02		NA		0.2	U	21.4		12		3	U	NA		26		NA		NA		28	
FB-5	SE	FB-5-8	8	1990	F	1.82		NA		0.3	U	11.3		14.4		3	U	NA		7		NA		NA		23	
FB-5	SE	FB-5-11	11	1990	F	1.31		NA		0.3	U	12.2		14.6		3	U	NA		8		NA		NA		20.8	
HA-9	SE	HA-9-1	1	1994	F	NA		NA		NA		NA		NA		34		NA		NA		NA		NA		NA	
HA-9	SE	HA-9-5	5	1994	F	NA		NA		NA		NA		NA		10	U	NA		NA		NA		NA		NA	
SB-7	SE	SB-7 0-1FT	0-1	2009	D	1	U	60		0.26	U	18		NA		8.6		0.021	U	NA		5.2	U	0.52	U	NA	
SB-7	SE	SB-7 4-5FT	4-5	2009	D	5.6	U	49		0.54		6.8		NA		21		0.022	U	NA		5.6	U	0.56	U	NA	
SLR-3	SE	SLR3-1	1	2011	D	6.94		NA		1.73		17.5		36.2		105		0.071		17.6		0.85	U	0.27	U	321	
SLR-3	SE	SLR3-6	6	2011	D	2.6		NA		0.16		8.11		14.6		2.65		0.029		6.53		0.85	U	0.27	U	23.4	
SLR-3	SE	SLR3-10	10	2011	D	2.06		NA		0.15	U	6.96		12.7		1.83		0.051		4.2		0.85	U	0.27	U	14	
SLR-4	SE	SLR4-1	1	2011	D	2.02		NA		0.15	U	10		9.26		2.07		0.025	U	17.2		0.85	U	0.27	U	20.8	
SLR-4	SE	SLR4-5	5	2011	D	3.57		NA		0.16		11.2		9.98		2.56		0.025	U	19.5		0.85	U	0.27	U	22.9	
SLR-4	SE	SLR4-10	10	2011	D	2.36		NA		0.17		7.86		12.4		2.23		0.025	U	5.94		0.85	U	0.27	U	19.2	
Former Wood Treating Area																											
DB1	WT	DB1-5	5	1990	D	6.57		NA		0.3		11.4		14.9		8		NA		8		NA		NA		42.1	
DB1	WT	DB1-6.5	6.5	1990	D	13.1		NA		0.3		10.3		26.9		18		NA		8		NA		NA		67.2	
DB1	WT	DB1-9.5	9.5	1990	D	3.1		NA		0.2		12.6		19.3		7		NA		10		NA		NA		42.1	
DB2 (DWM2)	WT	DB2-3.5	3.5	1990	D	25		NA		0.4		25.3		40.1		30		NA		30		NA		NA		105	
DB2 (DWM2)	WT	DB2-4.5	4.5	1990	D	144		NA		1.2		14.3		263		120		NA		16		NA		NA		500	
DB2 (DWM2)	WT	DB2-7	7	1990	D	241		NA		1		17.5		179		226		NA		12		NA		NA		716	
DB2 (DWM2)	WT	DB2-9.5	9.5	1990	D	4		NA		0.6		14.8		22.6		4		NA		10		NA		NA		33.7	
DB2 (DWM2)	WT	DB2-12	12	1990	D	6.5		NA		0.3		14.9		22.1		9		NA		9		NA		NA		40.9	
DB2 (DWM2)	WT	DB2-18	18	1990	D	9.1		NA		0.2		10		16.3		7		NA		8		NA		NA		42.2	
DB3 (DMW3)	WT	DB3-2	2	1990	D	6.5		NA		0.3		23.1		17.3		6		NA		30		NA		NA		41.5	
DB3 (DMW3)	WT	DB3-3.5	3.5	1990	D	21		NA		0.6		15.3		70.9		68		NA		23		NA		NA		184	
DB3 (DMW3)	WT	DB3-6	6	1990	D	1.5		NA		0.1	U	9		11		2	U	NA		8		NA		NA		23.7	
DB3 (DMW3)	WT	DB3-7.5	7.5	1990	D	2.79		NA		0.2	U	13.7		16.8		3	U	NA		13		NA		NA		29.2	
DB3 (DMW3)	WT	DB3-9	9	1990	D	2.5		NA		0.3		16.6		23.2		3		NA		13		NA		NA		34.8	

Table 3
Previous Soil Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Metals (mg/kg) Arsenic, Inorganic	Barium	Cadmium	Chromium, Total	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
					Preliminary Soil Screening Levels[a]	7 BR	23.1 S	1.0 BR	48 BR	36 BR	25 AG*	0.07[b] BR	48 BR	0.85 A	0.27 A	85 BR
					Laboratory PQLs	2.3	0.12	0.15	1.04	0.34	0.18	0.025	0.44	0.85	0.27	0.64
DB3 (DMW3)	WT	DB3-13.5	13.5	1990	D	1.78	NA	0.2 U	13.2	14.2	3 U	NA	9	NA	NA	24.4
DB3 (DMW3)	WT	DB3-17	17	1990	D	5.51	NA	0.2	11.2	13.1	3 U	NA	8	NA	NA	31.3
DB8	WT	DB8-5	5	1990	D	18	NA	0.5	19	83	45	NA	18	NA	NA	160
DB8	WT	DB8-8	8	1990	D	2.9	NA	0.2 U	12.6	15.9	3 U	NA	9	NA	NA	27.3
DB8	WT	DB8-11	11	1990	D	2.22	NA	0.3 U	12.1	15.9	3 U	NA	7	NA	NA	22.6
DB9	WT	DB9-5	5	1990	D	9.7	NA	0.5	11.3	30.7	29	NA	11	NA	NA	105
DB9	WT	DB9-8	8	1990	D	3.3	NA	0.2 U	10.9	17.9	3 U	NA	10	NA	NA	22
DB9	WT	DB9-11	11	1990	D	2.03	NA	0.3 U	17.4	25.3	4	NA	12	NA	NA	28.6
DB11	WT	DB11-6.5	6.5	1990	D	4.66	NA	0.2	10	20.4	34	NA	11	NA	NA	85
DB11	WT	DB11-8	8	1990	D	6.8	NA	0.4	50.2	26.4	311	NA	17	NA	NA	50.3
DB11	WT	DB11-9.5	9.5	1990	D	2.06	NA	0.2 U	12.8	17.2	4	NA	10	NA	NA	30.2
DB12	WT	DB12-5	5	1990	D	2.35	NA	0.3	10	12.7	13	NA	7	NA	NA	56.2
DB12	WT	DB12-11.5	11.5	1990	D	1.99	NA	0.2 U	11	13	3 U	NA	8	NA	NA	25.1
DB14	WT	DB14-9.5	9.5	1990	D	2.1	NA	0.4	13.5	17.6	3 U	NA	10	NA	NA	22.5
HC-1	WT	HC-1/S-1	2.5	1988	D	1,600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-1	WT	HC-1/S-3	5	1988	D	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-1A	WT	HC-1A/S-4	7.5	1988	D	9.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-1A	WT	HC-1A/S7	15	1988	D	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-5	WT	HC-5-0.5	0.5	1988	D	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-5	WT	HC-5-3	3	1988	D	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-6	WT	HC-6-2.5	2.5	1988	D	5.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-6	WT	HC-6-4	4	1988	D	2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-6	WT	HC-6-6.5	6.5	1988	D	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-6	WT	HC-6-8	8	1988	D	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-8	WT	HC-8-2.5	2.5	1988	D	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-8	WT	HC-8-4	4	1988	D	2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-8	WT	HC-8-6.5	6.5	1988	D	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-9	WT	HC-9-2.5	2.5	1988	D	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-9	WT	HC-9-4	4	1988	D	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-10	WT	HC-10-2.5	2.5	1988	D	82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-10	WT	HC-10-4	4	1988	D	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-10	WT	HC-10-6.5	6.5	1988	D	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-11	WT	HC-11-2.5	2.5	1988	D	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-11	WT	HC-11-4	4	1988	D	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-11	WT	HC-11-6.5	6.5	1988	D	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-12	WT	HC-12-2.5	2.5	1988	D	6.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-12	WT	HC-12-4	4	1988	D	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-12	WT	HC-12-6.5	6.5	1988	D	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-13	WT	HC-13-2.5	2.5	1988	D	2.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HC-13	WT	HC-13-3.7	3.7	1988	D	2,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3
Previous Soil Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Metals (mg/kg) Arsenic, Inorganic		Barium		Cadmium		Chromium, Total		Copper		Lead		Mercury		Nickel		Selenium		Silver		Zinc	
					Preliminary Soil Screening Levels[a]	**7**	**BR**	**23.1**	**S**	**1.0**	**BR**	**48**	**BR**	**36**	**BR**	**25**	**AG***	**0.07[b]**	**BR**	**48**	**BR**	**0.85**	**A**	**0.27**	**A**	**85**	**BR**
					Laboratory PQLs	**2.3**		**0.12**		**0.15**		**1.04**		**0.34**		**0.18**		**0.025**		**0.44**		**0.85**		**0.27**		**0.64**	
HC-13	WT	HC-13-4.1	4.1	1988	D	**35**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-13	WT	HC-13-6.5	6.5	1988	D	**7.8**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-14	WT	HC-14A/S-1	3.4	1988	D	**2,800**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-15	WT	HC-15A/S-1	4.2	1988	D	**4.5**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-16	WT	HC-16/S-1	3.5	1988	D	**770**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-17	WT	HC-17/S-1	3.1	1988	D	**6**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-17	WT	HC-17/S-2	4	1988	D	**68**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-18	WT	HC-18/S-2	4.3	1988	D	**3.4**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-19	WT	HC-19/S-1	3	1988	D	**16**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-19	WT	HC-19/S-2	5.5	1988	D	**3.8**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-20	WT	HC-20/S-1	3	1988	D	**3**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-20	WT	HC-20/S-2	5.5	1988	D	**4.3**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-102	WT	HC-102/S1	3	1990	D	3.9	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-102	WT	HC-102/S3	8	1990	D	5.7	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-102	WT	HC-102/S4	10	1990	D	5.2	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, the PQL, or the background concentration (if available), whichever is highest. The basis for each value is identified in Appendix D, Table D-1; PQLs are identified with an A, and background values are identified with a BR.
PQLs are identified with an A, and background values are identified with a BR.

[b] = Based on inorganic mercury. The preliminary screening level for organic mercury is 1.8×10^{-6} mg/kg.

All values in milligrams per kilogram (mg/kg).

Metals analyzed by EPA Methods 6010, 7470, 200.8, or 1631E.

Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening levels.

* = Most stringent ARAR is consistent across multiple sources.

A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.

BR = Background concentration selected as preliminary screening level because most stringent potential ARAR and PQL are both below background.

U = Analyte not detected at detection limit shown.

NA = Not analyzed.

Potential Source Areas:

DF = Dredge fill area.
PC = Former pipe and chain manufacturing area.
SE = Former sawmill and excelsior factory areas.
AW = Former aluminum window manufacturing area.
CP = Former concrete products manufacturing operation area.
WT = Former wood treating area.

Table 4
Previous Soil Sample Analytical Results - Petroleum Hydrocarbons and VOCs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	VOCs (µg/kg)																				Petroleum Hydrocarbons (mg/kg)			
						Acetone	Benzene	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	1,1 - Dichloroethane	1,2 -Dichloroethane	1,1 -Dichloroethylene	Ethylbenzene	Methylene Chloride	Styrene	Trichloroethylene	1,1,1, -Trichloroethane	1,1,2 -Trichloroethane	Tetrachloroethylene	Toluene	Total Xylenes	Vinyl Chloride	Gasoline-Range Organics	Diesel-Range Organics	Heavy Oil-Range Organics	Total Petroleum Hydrocarbons
					Preliminary Soil Screening Levels[a]	2,078 S	2.2 A	9.2 A	20 A	460 A	13 A	49 BP	21 A	8.4 A	14 A	13 A	520 A	1,287 S	24 A	2,000 B*	10 A	22 A	777 W	200 BP	16 A	30[b] B*	200 K	2,000 B*	--
					Laboratory PQLs	100	2.2	9.2	20	460	13	30	21	8.4	14	13	520	21	24	26	10	22	13	83	16	1.5	25.9	39.2	--
Dredge Fill Area																													
CMW-1	DF	CMW1-5	5	2008	F	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	50 U	250 U	NA
CMW-2a	DF	CMW2a-4	4	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	50 U	250 U	NA
CMW-3	DF	CMW3-5	5	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	50 U	250 U	NA
CMW-3	DF	CMW3-10	10	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	**120**	250 U	NA
CMW-4	DF	CMW4-5	5	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	50 U	250 U	NA
CMW-5	DF	CMW5-5	5	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	**110**	**510**	NA
DB6 (DMW6)	DF	DB6-2	2	1990	D	54 U	11 U	11 U	11 U	33 U	11 U	54 U	11 U	11 U	22 U	11 U	**53.0** B	11 U	11 U	11 U	11 U	11 U	11 U	11 U	33 U	NA	NA	NA	**500**
DB6 (DMW6)	DF	DB6-4.5	4.5	1990	D	**4,000**	560 U	560 U	560 U	1,700 U	560 U	2,800 U	560 U	560 U	1,100 U	**1,300**	**2,000** B	**660**	560 U	560 U	560 U	560 U	**510** J	**3,200**	1,700 U	NA	NA	NA	**14,000**
DB6 (DMW6)	DF	DB6-7	7	1990	D	560 U	110 U	110 U	**97** M	330 U	110 U	560 U	110 U	110 U	220 U	**740**	**530** B	**300**	110 U	110 U	110 U	110 U	**230**	**1,900**	330 U	NA	NA	NA	**1,600**
DB6 (DMW6)	DF	DB6-10	10	1990	D	**11**	1.3 U	1.3 U	1.3 U	3.9 U	1.3 U	6.4 U	1.3 U	1.3 U	2.6 U	1.3 U	**6.0** B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	3.9 U	NA	NA	NA	25 U
DB6 (DMW6)	DF	DB6-13	13	1990	D	**13**	**0.5** M	1.3 U	1.3 U	4.0 U	1.3 U	6.6 U	1.3 U	1.3 U	2.7 U	**3.1**	**5.8** B	**1.4**	1.3 U	1.3 U	1.3 U	5.3 U	**1.8**	**8.1**	4.0 U	NA	NA	NA	**600**
DB6 (DMW6)	DF	DB6-16	16	1990	D	**14** J	8.5 U	8.5 U	8.5 U	25 U	8.5 U	42 U	8.5 U	8.5 U	17 U	8.5 U	**36.0** B	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	**3.1** J	25 U	NA	NA	NA	25 U
DB6 (DMW6)	DF	DB6-18.5	18.5	1990	D	**21** J	7.6 U	7.6 U	7.6 U	23 U	7.6 U	38 U	7.6 U	7.6 U	15 U	7.6 U	**35.0** B	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	23 U	NA	NA	NA	25 U
DB7	DF	DB7-6	6	1990	D	**9.0**	1.1 U	1.1 U	1.1 U	3.3 U	1.1 U	5.5 U	1.1 U	1.1 U	2.2 U	1.1 U	**2.0** JB	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**1.1** M	3.3 U	NA	NA	NA	25 U
DB7	DF	DB7-8.5	8.5	1990	D	**29**	**0.3** M	1.1 U	1.1 U	3.4 U	1.1 U	5.7 U	1.1 U	1.1 U	2.3 U	**1.9**	**1.7** JB	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**0.5** M	**10.0**	3.4 U	NA	NA	NA	25 U
DB7	DF	DB7-11.5	11.5	1990	D	**23**	**1.1** J	1.3 U	**3.3** M	3.9 U	1.3 U	6.5 U	1.3 U	1.3 U	2.6 U	**8.4**	**2.1** JB	1.1 U	**0.5** M	1.3 U	1.3 U	**1.3**	**1.9** M	**43.0**	3.4 U	NA	NA	NA	25 U
DB13	DF	DB13-11	11	1990	D	**10.0**	1.3 U	1.3 U	1.3 U	3.9 U	1.3 U	6.5 U	1.3 U	1.3 U	2.6 U	1.3 U	**2.4** JB	1.3 U	1.3 U	1.3 U	1.3 U	**4.2**	1.3 U	1.3 U	3.9 U	NA	NA	NA	**14,000**
Former Aluminum Window Manufacturing Area																													
FB1 (FMW-1)	AW	FB1-2	2	1990	F	3.2 U	1.1 U	2.1 U	1.1 U	3.2 U	1.1 U	2.1 U	1.1 U	2.1 U	1.1 U	1.1 U	**2.6** B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	2.1 U	3.2 U	NA	NA	NA	10 U
FB1 (FMW-1)	AW	FB1-7	7	1990	F	4.2 U	1.4 U	2.8 U	1.4 U	4.2 U	1.4 U	2.8 U	1.4 U	2.8 U	1.4 U	1.4 U	**2.8** B	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	2.8 U	4.2 U	NA	NA	NA	10 U
FB1 (FMW-1)	AW	FB1-13	13	1990	F	**15** B	1.3 U	2.6 U	1.3 U	3.9 U	1.3 U	2.6 U	1.3 U	2.6 U	1.3 U	1.3 U	**4.1** B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	2.6 U	3.9 U	NA	NA	NA	10 U
HA-11	AW	HA11-6.0-6.5	6	1994	F	1,000 U	250 U	250 U	NA	NA	NA	NA	NA	NA	NA	250 U	100 U	NA	250 U	250 U	250 U	250 U	250 U	500 U	NA	NA	NA	NA	NA
MW-1 (1994)	AW	MW1-6.0-6.5	6	1994	F	1,000 U	250 U	250 U	NA	NA	NA	NA	NA	NA	NA	250 U	100 U	NA	250 U	250 U	250 U	250 U	250 U	500 U	NA	NA	NA	NA	NA
SB-8	AW	SB-8 0-1FT	0-1	2009	F	**160**	**2.2**	1.1 U	1.1 U	5.4 U	5.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.4 U	3.2 U	1.1 U	0.11 U	**60**	**870**	NA
SB-8	AW	SB-8 4-5FT	4-5	2009	F	65 U	1.3 U	1.3 U	1.3 U	6.5 U	6.5 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	6.5 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	6.5 U	3.9 U	1.3 U	0.13 U	5.2 U	13 U	NA
SB-9	AW	SB-9 0-1FT	0-1	2009	F	**110**	**2.3**	1.2 U	1.2 U	6.0 U	6.0 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	6.0 U	1.2 U	1.2 U	1.2 U	1.2 U	**3.1**	6.0 U	3.6 U	1.2 U	0.15 U	**19**	**220**	NA
SB-9	AW	SB-9 4-5FT	4-5	2009	F	62 U	1.2 U	1.2 U	1.2 U	6.2 U	6.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	6.2 U	1.2 U	1.2 U	1.2 U	1.2 U	**1.2**	6.2 U	3.7 U	1.2 U	0.12 U	5 U	12 U	NA
SLR-6	AW	SLR6-1	1	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-6	AW	SLR6-5	5	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-6	AW	SLR6-10	10	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
TP100810	AW	TP100810-9.5'	9.5	2010	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**15,000** X	**16,000**	NA
Diesel Tank Excavation	AW	NS-V-1	?	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U
Diesel Tank Excavation	AW	ES-V-1	?	1988	F	NA	14 U	NA	NA	NA	NA	NA	NA	NA	NA	14 U	NA	NA	NA	NA	NA	NA	14 U	**110**	NA	NA	NA	NA	20 U
Diesel Tank Excavation	AW	SS-V-1	?	1988	F	NA	14 U	NA	NA	NA	NA	NA	NA	NA	NA	14 U	NA	NA	NA	NA	NA	NA	14 U	**110**	NA	NA	NA	NA	20 U
Diesel Tank Excavation	AW	WS-V-1	?	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U
Diesel Tank Excavation	AW	BV-1A/B	?	1988	F	NA	14 U	NA	NA	NA	NA	NA	NA	NA	NA	14 U	NA	NA	NA	NA	NA	NA	14 U	14 U	NA	NA	NA	NA	20 U
Diesel Tank Excavation	AW	Diesel-2nd Stockpile		1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U
Diesel Tank Excavation	AW	Diesel Stockpile/9 FT		1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U
Former Concrete Products Manufacturing Operations Area																													
FB1 (FMW-1)	CP	FB1-2	2	1990	F	3.2 U	1.1 U	2.1 U	1.1 U	3.2 U	1.1 U	2.1 U	1.1 U	2.1 U	1.1 U	1.1 U	**2.6** B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	2.1 U	3.2 U	NA	NA	NA	10 U
FB1 (FMW-1)	CP	FB1-7	7	1990	F	4.2 U	1.4 U	2.8 U	1.4 U	4.2 U	1.4 U	2.8 U	1.4 U	2.8 U	1.4 U	1.4 U	**2.8** B	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	2.8 U	4.2 U	NA	NA	NA	10 U

Table 4
Previous Soil Sample Analytical Results - Petroleum Hydrocarbons and VOCs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	VOCs (µg/kg)																				Petroleum Hydrocarbons (mg/kg)			
						Acetone	Benzene	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	1,1 - Dichloroethane	1,2 -Dichloroethane	1,1 -Dichloroethylene	Ethylbenzene	Methylene Chloride	Styrene	Trichloroethylene	1,1,1,-Trichloroethane	1,1,2 -Trichloroethane	Tetrachloroethylene	Toluene	Total Xylenes	Vinyl Chloride	Gasoline-Range Organics	Diesel-Range Organics	Heavy Oil-Range Organics	Total Petroleum Hydrocarbons
Preliminary Soil Screening Levels[a]						2,078 S	2.2 A	9.2 A	20 A	460 A	13 A	49 BP	21 A	8.4 A	14 A	13 A	520 A	1,287 S	24 A	2,000 B*	10 A	22 A	777 W	200 BP	16 A	30[b] B*	200 K	2,000 B*	--
Laboratory PQLs						100	2.2	9.2	20	460	13	30	21	8.4	14	13	520	21	24	26	10	22	13	83	16	1.5	25.9	39.2	--
FB1 (FMW-1)	CP	FB1-13	13	1990	F	15 B	1.3 U	2.6 U	1.3 U	3.9 U	1.3 U	2.6 U	1.3 U	2.6 U	1.3 U	1.3 U	4.1 B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	2.6 U	3.9 U	NA	NA	NA	10 U
FB2 (FMW-2)	CP	FB2-2	2	1990	F	14	1.6 U	1.6 U	1.6 U	4.8 U	1.6 U	8.0 U	1.6 U	1.6 U	3.2 U	1.6 U	8.5 B	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	0.5 M	1.6 U	4.8 U	NA	NA	NA	27
FB2 (FMW-2)	CP	FB2-5.5	5.5	1990	F	7.2	1.0 U	1.0 U	1.0 U	3.1 U	1.0 U	5.1 U	1.0 U	1.0 U	2.1 U	1.0 U	4.0 B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.1 U	NA	NA	NA	10 U
FB2 (FMW-2)	CP	FB2-8	8	1990	F	11	1.2 U	1.2 U	1.2 U	3.5 U	1.2 U	5.9 U	1.2 U	1.2 U	2.4 U	1.2 U	4.0 B	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	3.5 U	NA	NA	NA	10 U
FB2 (FMW-2)	CP	FB2-18.5	18.5	1990	F	16	1.2 U	1.2 U	1.2 U	3.7 U	1.2 U	6.2 U	1.2 U	1.2 U	2.5 U	1.2 U	7.6 B	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	0.4 M	1.2 U	3.7 U	NA	NA	NA	10 U
FB3 (FMW-3)	CP	FB3-3	3	1990	F	3.1 U	1.0 U	2.0 U	1.0 U	3.1 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	2.3 B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	3.1 U	NA	NA	NA	10 U
FB3 (FMW-3)	CP	FB3-5.5	5.5	1990	F	2.5 JB	1.2 U	2.4 U	1.2 U	3.6 U	1.2 U	2.4 U	1.2 U	2.4 U	1.2 U	1.2 U	3.9 B	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	2.4 U	3.6 U	NA	NA	NA	27
FB3 (FMW-3)	CP	FB3-13.5	13.5	1990	F	17 B	1.2 U	2.4 U	1.2 U	3.7 U	1.2 U	2.4 U	1.2 U	2.4 U	1.2 U	1.2 U	4.2 B	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	2.4 U	3.7 U	NA	NA	NA	14
FB4	CP	FB4-2	2	1990	F	11	1.1 U	1.1 U	1.1 U	3.2 U	1.1 U	5.3 U	1.1 U	1.1 U	2.1 U	1.1 U	5.5 B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	3.2 U	NA	NA	NA	10 U
FB4	CP	FB4-8	8	1990	F	25	1.3 U	1.3 U	1.3 U	4.0 U	1.3 U	6.7 U	1.3 U	1.3 U	2.7 U	1.3 U	6.4 B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	4.0 U	NA	NA	NA	10 U
FB4	CP	FB4-11	11	1990	F	15	1.3 U	1.3 U	1.3 U	3.9 U	1.3 U	6.5 U	1.3 U	1.3 U	2.6 U	1.3 U	3.9 B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	3.9 U	NA	NA	NA	10 U
FB5	CP	FB5-2	2	1990	F	25	1.1 U	1.1 U	1.1 U	3.4 U	1.1 U	5.6 U	1.1 U	1.1 U	2.2 U	1.1 U	3.8 B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	3.4 U	NA	NA	NA	10 U
FB5	CP	FB5-8	8	1990	F	240	1.3 U	1.3 U	1.3 U	3.9 U	1.3 U	6.5 U	1.3 U	1.3 U	2.6 U	1.3 U	4.0 B	1.3 U	0.8 J	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	3.9 U	NA	NA	NA	10 U
FB5	CP	FB5-11	11	1990	F	22	1.3 U	1.3 U	1.3 U	4.0 U	1.3 U	6.7 U	1.1 J	1.3 U	2.7 U	1.3 U	5.8 B	1.3 U	1.4	1.3 U	1.3 U	3.2	1.3 U	1.3 U	3.3 J	NA	NA	NA	10 U
HA-1	CP	HA1-2.0-2.5	2	1994	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U	50 U	100 U	NA
HA-1	CP	HA1-6.0-6.5	6	1994	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U	50 U	100 U	NA
HA-2	CP	HA2-3.0-3.5	3	1994	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U	50 U	100 U	NA
HA-11	CP	HA11-6.0-6.5	6	1994	F	1,000 U	250 U	250 U	NA	NA	NA	NA	NA	NA	NA	250 U	100 U	NA	250 U	250 U	250 U	250 U	250 U	500 U	NA	NA	NA	NA	NA
HA-13	CP	HA13-3.0-3.5	3	1994	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U	50 U	100 U	NA
HA-13	CP	HA13-6.0-6.5	6	1994	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U	50 U	100 U	NA
MW-1 (1994)	CP	MW1-6.0-6.5	6	1994	F	1,000 U	250 U	250 U	NA	NA	NA	NA	NA	NA	NA	250 U	100 U	NA	250 U	250 U	250 U	250 U	250 U	500 U	NA	NA	NA	NA	NA
MW-3	CP	MW3-5.5-6.0	5.5	1994	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U	50 U	100 U	NA
SB-1	CP	SB-1 0-1FT	0-1	2009	F	59 U	1.2 U	1.2 U	1.2 U	5.9 U	5.9 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	5.9 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	5.9 U	3.5 U	1.2 U	0.11 U	50	690	NA
SB-1	CP	SB-1 4-5FT	4-5	2009	F	58 U	2.4	1.2 U	1.2 U	5.8 U	5.8 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	5.8 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	5.8 U	3.4 U	1.2 U	0.11 U	68	270	NA
SB-2	CP	SB-2 0-1FT	0-1	2009	F	54 U	1.1 U	1.1 U	1.1 U	5.4 U	5.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.4 U	3.3 U	1.1 U	0.13 U	43	1,300	NA
SB-2	CP	SB-2 4-5FT	4-5	2009	F	89 U	7.8	1.8 U	1.8 U	8.9 U	8.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	8.9 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	8.9 U	5.4 U	1.8 U	0.24	4.6 U	72	NA
SB-3	CP	SB-3 0-1FT	0-1	2009	F	68 U	1.4 U	1.4 U	1.4 U	6.8 U	6.8 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	6.8 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	6.8 U	4.1 U	1.4 U	0.11 U	20	450	NA
SB-3	CP	SB-3 4-5FT	4-5	2009	F	62 U	2.1	1.2 U	1.2 U	6.2 U	6.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	6.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	6.2 U	3.7 U	1.2 U	0.12 U	4.6	130	NA
SB-4	CP	SB-4 0-1FT	0-1	2009	F	54 U	1.1 U	1.1 U	1.1 U	5.4 U	5.4 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	5.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.4 U	3.2 U	1.1 U	0.11 U	20	430	NA
SB-4	CP	SB-4 4-5FT	4-5	2009	F	55 U	1.1 U	1.1 U	1.1 U	5.5 U	5.5 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.5 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.5 U	3.3 U	1.1 U	0.11 U	26	180	NA
SB-5	CP	SB-5 0-1FT	0-1	2009	F	73	1.1 U	1.1 U	1.1 U	5.6 U	5.6 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.6 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.6 U	3.4 U	1.1 U	0.11 U	6.6	110	NA
SB-5	CP	SB-5 4-5FT	4-5	2009	F	56 U	1.1 U	1.1 U	1.1 U	5.6 U	5.6 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.6 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.6 U	3.4 U	1.1 U	0.11 U	4.6	87	NA
SB-6	CP	SB-6 0-1FT	0-1	2009	F	150	1.2 U	1.2 U	1.2 U	6.4 U	6.4 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	6.4 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	6.4 U	3.9 U	1.2 U	0.11 U	30	110	NA
SB-6	CP	SB-6 4-5FT	4-5	2009	F	53 U	1.1 U	1.1 U	1.1 U	5.3 U	5.3 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.3 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.3 U	3.2 U	1.1 U	0.11 U	4.2 U	11 U	NA
SB-8	CP	SB-8 0-1FT	0-1	2009	F	160	2.2	1.1 U	1.1 U	5.4 U	5.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.4 U	3.2 U	1.1 U	0.11 U	60	870	NA
SB-8	CP	SB-8 4-5FT	4-5	2009	F	65 U	1.3 U	1.3 U	1.3 U	6.5 U	6.5 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	6.5 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	6.5 U	3.9 U	1.3 U	0.13 U	5.2 U	13 U	NA
SB-9	CP	SB-9 0-1FT	0-1	2009	F	110	2.3	1.2 U	1.2 U	6.0 U	6.0 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	6.0 U	1.2 U	1.2 U	1.2 U	1.2 U	3.1	6.0 U	3.6 U	1.2 U	0.15 U	19	220	NA
SB-9	CP	SB-9 4-5FT	4-5	2009	F	62 U	1.2 U	1.2 U	1.2 U	6.2 U	6.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	6.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2	6.2 U	3.7 U	1.2 U	0.12 U	5 U	12 U	NA
SB-10	CP	SB-10 0-1FT	0-1	2009	F	100	2.0	1.1 U	1.1 U	5.5 U	5.5 U	3.6	1.1 U	1.1 U	1.1 U	1.1 U	5.5 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.5 U	3.3 U	1.1 U	0.13 U	19	640	NA
SB-10	CP	SB-10 4-5FT	4-5	2009	F	62 U	1.2 U	1.2 U	1.2 U	6.2 U	6.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	6.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	6.2 U	3.7 U	1.2 U	0.12 U	4.9 U	17	NA
SB-11	CP	SB-11 0-1FT	0-1	2009	F	54 U	1.1 U	1.1 U	1.1 U	5.4 U	5.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.4 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.4 U	3.2 U	1.1 U	0.11 U	150	1,400	NA
SB-11	CP	SB-11 4-5FT	4-5	2009	F	64 U	1.3 U	1.3 U	1.3 U	6.4 U	6.4 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	6.4 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	6.4 U	3.9 U	1.3 U	0.13 U	5.2 U	13 U	NA
SLR-1	CP	SLR1-1	1	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	1.5 U	25.9 U	39.2 U	NA
SLR-1	CP	SLR1-6	6	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	1.5 U	25.9 U	39.2 U	NA
SLR-1	CP	SLR1-10	10	2011	F	180	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	1.5 U	25.9 U	39.2 U	NA
SLR-2	CP	SLR2-1	1	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-2	CP	SLR2-6	6	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	1.5 U	25.9 U	67	NA
SLR-2	CP	SLR2-10	10	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-3	CP	SLR3-1	1	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	39 X	200	NA
SLR-3	CP	SLR3-6	6	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	1.5 U	25.9 U	39.2 U	NA

Table 4
Previous Soil Sample Analytical Results - Petroleum Hydrocarbons and VOCs
8th Avenue Terminals, Inc. Site
Seattle, Washington

						VOCs (µg/kg)																				Petroleum Hydrocarbons (mg/kg)			
Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Acetone	Benzene	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	1,1 - Dichloroethane	1,2 -Dichloroethane	1,1 -Dichloroethylene	Ethylbenzene	Methylene Chloride	Styrene	Trichloroethylene	1,1,1, -Trichloroethane	1,1,2 -Trichloroethane	Tetrachloroethylene	Toluene	Total Xylenes	Vinyl Chloride	Gasoline-Range Organics	Diesel-Range Organics	Heavy Oil-Range Organics	Total Petroleum Hydrocarbons
					Preliminary Soil Screening Levels[a]	2,078 S	2.2 A	9.2 A	20 A	460 A	13 A	49 BP	21 A	8.4 A	14 A	13 A	520 A	1,287 S	24 A	2,000 B*	10 A	22 A	777 W	200 BP	16 A	30[b] B*	200 K	2,000 B*	--
					Laboratory PQLs	100	2.2	9.2	20	460	13	30	21	8.4	14	13	520	21	24	26	10	22	13	83	16	1.5	25.9	39.2	--
SLR-3	CP	SLR3-10	10	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	73 J lc	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-5	CP	SLR5-3	3	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	1.5 U	18,000	6,300	NA
SLR-5	CP	SLR5-6	6	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	2.6	3,800	2,000	NA
SLR-5	CP	SLR5-7.5	7.5	2011	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80	39.2 U	NA
SLR-5	CP	SLR5-10	10	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	1.5 U	29	77	NA
SLR-6	CP	SLR6-1	1	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-6	CP	SLR6-5	5	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-6	CP	SLR6-10	10	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-7	CP	SLR7-1	1	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-7	CP	SLR7-5	5	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	1.5 U	350 X	760	NA
SLR-7	CP	SLR7-10	10	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	1.5 U	25.9 U	39.2 U	NA
SS-2	CP	SS-2	0.5	1988	F	77	3.0 U	3.0 U	10.0 U	10.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	96	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	49.0	640	3.0 U	NA	NA	NA	NA
SS-3	CP	SS-3	0.5	1988	F	41	8.0 U	8.0 U	24 U	24 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	5.0 J	8.0	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	120	47	8.0 U	NA	NA	NA	NA
TP100810	CP	TP100810-9.5'	9.5	2010	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15,000 X	16,000	NA
Diesel Tank Excavation	CP	NS-V-1	?	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U
Diesel Tank Excavation	CP	ES-V-1	?	1988	F	NA	14 U	NA	NA	NA	NA	NA	NA	NA	NA	14 U	NA	NA	NA	NA	NA	NA	14 U	110	NA	NA	NA	NA	20 U
Diesel Tank Excavation	CP	SS-V-1	?	1988	F	NA	14 U	NA	NA	NA	NA	NA	NA	NA	NA	14 U	NA	NA	NA	NA	NA	NA	14 U	110	NA	NA	NA	NA	20 U
Diesel Tank Excavation	CP	WS-V-1	?	1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U
Diesel Tank Excavation	CP	BV-1A/B	?	1988	F	NA	14 U	NA	NA	NA	NA	NA	NA	NA	NA	14 U	NA	NA	NA	NA	NA	NA	14 U	14 U	NA	NA	NA	NA	20 U
Diesel Tank Excavation	CP	Diesel-2nd Stockpile		1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U
Diesel Tank Excavation	CP	Diesel Stockpile/9 FT		1988	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20 U
Gasoline Tank Excavation	CP	GST-1	?	1988	F	NA	13 U	NA	NA	NA	NA	NA	NA	NA	NA	13 U	NA	NA	NA	NA	NA	NA	13 U	940	NA	NA	NA	NA	NA
Gasoline Tank Excavation	CP	GST-2	?	1988	F	NA	13 U	NA	NA	NA	NA	NA	NA	NA	NA	13 U	NA	NA	NA	NA	NA	NA	13 U	13 U	NA	NA	NA	NA	NA
Gasoline Tank Excavation	CP	GST-3	?	1988	F	NA	14 U	NA	NA	NA	NA	NA	NA	NA	NA	14 U	NA	NA	NA	NA	NA	NA	14 U	710	NA	NA	NA	NA	NA
Gasoline Tank Excavation	CP	Gas-2nd Stockpile		1988	F	NA	14 U	NA	NA	NA	NA	NA	NA	NA	NA	14 U	NA	NA	NA	NA	NA	NA	14 U	710	NA	NA	NA	NA	NA
Former Pipe & Chain Manufacturing Area																													
CMW-5	PC	CMW5-5	5	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	110	510	NA
CMW-6	PC	CMW6-5	5	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	72	570	NA
CMW-7	PC	CMW7-5	5	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	5,000	7,500	NA
CMW-7	PC	CMW7-7	7	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	110	310	250 U	NA
DB4	PC	DB4-6	6	1990	D	6.1	0.7 J	1.2 U	1.2 U	3.6 U	1.2 U	6.1 U	1.2 U	1.2 U	2.4 U	1.2 U	3.4 B	1.2 U	1.2 U	1.2 U	1.2 U	4.3	0.7 J	0.7 J	3.6 U	NA	NA	NA	330
DB4	PC	DB4-8.5	8.5	1990	D	6.3	1.2 U	1.2 U	1.2 U	3.7 U	1.2 U	6.1 U	1.2 U	1.2 U	2.4 U	1.2 U	3.6 B	1.2 U	1.2 U	1.2 U	1.2 U	0.7 J	0.4 M	1.2 U	3.7 U	NA	NA	NA	25 U
DB4	PC	DB4-11	11	1990	D	7.0	1.3 U	1.3 U	1.3 U	3.9 U	1.3 U	6.5 U	1.3 U	1.3 U	2.6 U	1.3 U	4.8 B	1.3 U	1.3 U	1.3 U	1.3 U	3.3	1.3 U	1.3 U	3.9 U	NA	NA	NA	25 U
DB5	PC	DB5-2	2	1990	D	52	1.1 U	1.1 U	1.1 U	3.4 U	1.1 U	5.6 U	1.1 U	1.1 U	2.3 U	0.4 M	1.8 JB	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.4 M	2.6 M	3.4 U	NA	NA	NA	2,600
DB5	PC	DB5-8	8	1990	D	49	1.1 U	1.1 U	1.1 U	3.3 U	1.1 U	5.5 U	1.1 U	1.1 U	2.2 U	1.1 U	2.1 JB	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.8	0.9 J	3.3 U	NA	NA	NA	25 U
DB5	PC	DB5-11	11	1990	D	12.0	1.3 U	1.3 U	1.3 U	3.8 U	1.3 U	6.3 U	1.3 U	1.3 U	2.5 U	1.3 U	2.8 B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	0.7 J	0.7 J	3.8 U	NA	NA	NA	25 U
DB6 (DMW6)	PC	DB6-2	2	1990	D	54 U	11.0 U	11 U	11 U	33 U	11 U	54 U	11 U	11 U	22 U	11.0 U	53.0 B	11.0 U	11.0 U	11 U	11 U	11.0 U	11.0 U	11.0 U	33 U	NA	NA	NA	500
DB6 (DMW6)	PC	DB6-4.5	4.5	1990	D	4,000	560 U	560 U	560 U	1,700 U	560 U	2,800 U	560 U	560 U	1,100 U	1,300	2,000 B	660	560 U	560 U	560 U	560 U	510 J	3,200	1,700 U	NA	NA	NA	14,000
DB6 (DMW6)	PC	DB6-7	7	1990	D	560 U	110 U	110 U	97 M	330 U	110 U	560 U	110 U	110 U	220 U	740	530 B	300	110 U	110 U	110 U	110 U	230	1,900	330 U	NA	NA	NA	1,600
DB6 (DMW6)	PC	DB6-10	10	1990	D	11	1.3 U	1.3 U	1.3 U	3.9 U	1.3 U	6.4 U	1.3 U	1.3 U	2.6 U	1.3 U	6.0 B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	3.9 U	NA	NA	NA	25 U
DB6 (DMW6)	PC	DB6-13	13	1990	D	13	0.5 M	1.3 U	1.3 U	4.0 U	1.3 U	6.6 U	1.3 U	1.3 U	2.7 U	3.1	5.8 B	1.4	1.3 U	1.3 U	1.3 U	5.3 U	1.8	8.1	4.0 U	NA	NA	NA	600
DB6 (DMW6)	PC	DB6-16	16	1990	D	14 J	8.5 U	8.5 U	8.5 U	25 U	8.5 U	42 U	8.5 U	8.5 U	17 U	8.5 U	36.0 B	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	3.1 J	25 U	NA	NA	NA	25 U
DB6 (DMW6)	PC	DB6-18.5	18.5	1990	D	21 J	7.6 U	7.6 U	7.6 U	23 U	7.6 U	38 U	7.6 U	7.6 U	15 U	7.6 U	35.0 B	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	23 U	NA	NA	NA	25 U
DB7	PC	DB7-6	6	1990	D	9.0	1.1 U	1.1 U	1.1 U	3.3 U	1.1 U	5.5 U	1.1 U	1.1 U	2.2 U	1.1 U	2.0 JB	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 M	3.3 U	NA	NA	NA	25 U

Table 4
Previous Soil Sample Analytical Results - Petroleum Hydrocarbons and VOCs
8th Avenue Terminals, Inc. Site
Seattle, Washington

						VOCs (µg/kg)																				Petroleum Hydrocarbons (mg/kg)			
Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Acetone	Benzene	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	1,1 - Dichloroethane	1,2 -Dichloroethane	1,1 -Dichloroethylene	Ethylbenzene	Methylene Chloride	Styrene	Trichloroethylene	1,1,1, -Trichloroethane	1,1,2 -Trichloroethane	Tetrachloroethylene	Toluene	Total Xylenes	Vinyl Chloride	Gasoline-Range Organics	Diesel-Range Organics	Heavy Oil-Range Organics	Total Petroleum Hydrocarbons
		Preliminary Soil Screening Levels[a]				2,078 S	2.2 A	9.2 A	20 A	460 A	13 A	49 BP	21 A	8.4 A	14 A	13 A	520 A	1,287 S	24 A	2,000 B*	10 A	22 A	777 W	200 BP	16 A	30[b] B*	200 K	2,000 B*	--
		Laboratory PQLs				100	2.2	9.2	20	460	13	30	21	8.4	14	13	520	21	24	26	10	22	13	83	16	1.5	25.9	39.2	--
DB7	PC	DB7-8.5	8.5	1990	D	**29**	**0.3** M	1.1 U	1.1 U	3.4 U	1.1 U	5.7 U	1.1 U	1.1 U	2.3 U	**1.9**	**1.7** JB	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**0.5** M	**10.0**	3.4 U	NA	NA	NA	25 U
DB7	PC	DB7-11.5	11.5	1990	D	**23**	**1.1** J	1.1 U	**3.3** M	3.4 U	1.1 U	5.7 U	1.1 U	1.1 U	2.3 U	**8.4**	**2.1** JB	1.1 U	**0.5** M	1.1 U	1.1 U	**1.3**	**1.9** M	**43.0**	3.4 U	NA	NA	NA	25 U
DB13	PC	DB13-11	11	1990	D	**10.0**	1.3 U	1.3 U	1.3 U	3.9 U	1.3 U	6.5 U	1.3 U	1.3 U	2.6 U	1.3 U	**2.4** JB	1.3 U	1.3 U	1.3 U	1.3 U	**4.2**	1.3 U	1.3 U	3.9 U	NA	NA	NA	**14,000**
HC-4	PC	HC-4/S-2	5	1988	D	**81**	2.0 U	2.0 U	7.0 U	7.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA
HC-103	PC	HC-103/S-5	9.8	1990	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	**940**	NA	NA
HC-103	PC	HC-103/S-6	10.8	1990	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	**15**	NA	NA
HC-106	PC	HC-106/S-2	5.3	1990	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	**1,400**	NA	NA
HC-106	PC	HC-106/S-3	7.5	1990	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	5.0 U	NA	NA
HC-106	PC	HC-106/S-4	11	1990	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	5.0 U	NA	NA
Former Sawmill and Excelsior Factory Areas																													
CMW-3	SE	CMW3-5	5	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	50 U	250 U	NA
CMW-3	SE	CMW3-10	10	2008	D	500 U	30 U	50 U	50 U	500 U	50 U	50 U	50 U	50 U	50 U	50 U	500 U	50 U	30 U	50 U	50 U	25 U	50 U	150 U	50 U	2.0 U	**120**	250 U	NA
DB8	SE	DB8-5	5	1990	D	**29**	1.1 U	1.1 U	1.1 U	3.4 U	1.1 U	5.6 U	1.1 U	1.1 U	2.3 U	1.1 U	**2.9** B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**0.8** J	**0.8** J	3.3 U	NA	NA	NA	25 U
DB8	SE	DB8-8	8	1990	D	**70**	1.2 U	1.2 U	1.2 U	3.7 U	1.2 U	6.2 U	1.2 U	1.2 U	2.5 U	1.2 U	**2.5** JB	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	3.7 U	NA	NA	NA	25 U
DB8	SE	DB8-11	11	1990	D	**27**	1.3 U	1.3 U	1.3 U	3.8 U	1.3 U	6.3 U	1.3 U	1.3 U	2.5 U	1.3 U	**3.8** B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	**0.4** M	1.3 U	3.8 U	NA	NA	NA	25 U
DB10	SE	DB10-5	5	1990	D	**75**	**1.6**	1.3 U	1.3 U	3.9 U	1.3 U	6.6 U	1.3 U	1.3 U	2.6 U	1.3 U	**7.9** B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	**1.3** J	**0.6** M	3.9 U	NA	NA	NA	**17**
DB10	SE	DB10-8	8	1990	D	**30**	1.3 U	1.3 U	1.3 U	4.0 U	1.3 U	6.6 U	1.3 U	1.3 U	2.7 U	1.3 U	**5.3** B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	**1.0** J	**1.0** J	4.0 U	NA	NA	NA	**43**
DB10	SE	DB10-11	11	1990	D	**22**	1.4 U	1.4 U	1.4 U	4.2 U	1.4 U	7.0 U	1.4 U	1.4 U	2.8 U	1.4 U	**3.8** B	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	4.2 U	NA	NA	NA	10 U
FB5	SE	FB5-2	2	1990	F	**25**	1.1 U	1.1 U	1.1 U	3.4 U	1.1 U	5.6 U	1.1 U	1.1 U	2.2 U	1.1 U	**3.8** B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	3.4 U	NA	NA	NA	10 U
FB5	SE	FB5-8	8	1990	F	**240**	1.3 U	1.3 U	1.3 U	3.9 U	1.3 U	6.5 U	1.3 U	1.3 U	2.6 U	1.3 U	**4.0** B	1.3 U	**0.8** J	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	3.9 U	NA	NA	NA	10 U
FB5	SE	FB5-11	11	1990	F	**22**	1.3 U	1.3 U	1.3 U	4.0 U	1.3 U	6.7 U	**1.1** J	1.3 U	2.7 U	1.3 U	**5.8** B	1.3 U	**1.4**	1.3 U	1.3 U	**3.2**	1.3 U	1.3 U	**3.3** J	NA	NA	NA	10 U
SLR-3	SE	SLR3-1	1	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	**39** X	**200**	NA
SLR-3	SE	SLR3-6	6	2011	F	100 U	2.2 UJ	9.2 UJ	20 U	460 U	13 U	30 U	21 U	8.4 UJ	14 U	13 U	72 U	21 U	24 U	26 U	3.2 UJ	22 U	13 U	33 U	250 U	1.5 U	25.9 U	39.2 U	NA
SLR-3	SE	SLR3-10	10	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	**73** J lc	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-4	SE	SLR4-1	1	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-4	SE	SLR4-5	5	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SLR-4	SE	SLR4-10	10	2011	F	100 U	2.2 UJ	9.2 UJ	20 UJ	460 U	13 UJ	30 UJ	21 UJ	8.4 UJ	14 UJ	13 UJ	72 UJ	21 UJ	24 U	26 UJ	3.2 UJ	22 UJ	13 UJ	16.5 UJ	15 U	1.5 U	25.9 U	39.2 U	NA
SS-3	SE	SS-3	0.5	1988	F	**41**	8.0 U	8.0 U	24 U	24 U	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	**5.0** J	**8.0**	8.0 U	8.0 U	8.0 U	8.0 U	8.0 U	**120**	**47**	8.0 U	NA	NA	NA	NA
SB-7	SE	SB-7 0-1FT	0-1	2009	D	**70**	**1.1**	1.0 U	1.0 U	5.2 U	5.2 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.2 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.2 U	3.1 U	1.0 U	0.10 U	**43**	**910**	NA
SB-7	SE	SB-7 4-5FT	4-5	2009	D	56 U	1.1 U	1.1 U	1.1 U	5.6 U	5.6 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.6 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	5.6 U	3.3 U	1.1 U	0.11 U	**30**	**1,400**	NA
Former Wood Treating Area																													
DB1	WT	DB1-5	5	1990	D	**4.2**	1.0 U	2.0 U	1.0 U	3.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	**1.6** B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	3.0 U	NA	NA	NA	25 U
DB1	WT	DB1-6.5	6.5	1990	D	**17**	1.0 U	2.1 U	1.0 U	3.1 U	1.0 U	2.1 U	1.0 U	2.1 U	1.0 U	1.0 U	**1.9** B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.6** J	2.1 U	3.1 U	NA	NA	NA	25 U
DB1	WT	DB1-9.5	9.5	1990	D	3.4 U	1.1 U	2.3 U	1.1 U	3.4 U	1.1 U	2.3 U	1.1 U	2.3 U	1.1 U	1.1 U	**2.1** B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	2.3 U	3.4 U	NA	NA	NA	25 U
DB2 (DMW2)	WT	DB2-3.5	3.5	1990	D	**3.6**	1.0 U	1.9 U	1.0 U	2.9 U	1.0 U	1.9 U	1.0 U	1.9 U	1.0 U	1.0 U	**2.5** B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**0.6** J	1.9 U	2.9 U	NA	NA	NA	25 U
DB2 (DMW2)	WT	DB2-4.5	4.5	1990	D	**22**	1.0 U	2.1 U	1.0 U	3.1 U	1.0 U	2.1 U	1.0 U	2.1 U	1.0 U	1.0 U	**2.9** B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1 U	3.1 U	NA	NA	NA	25 U
DB2 (DMW2)	WT	DB2-7	7	1990	D	**86**	1.1 U	2.1 U	1.1 U	3.2 U	1.1 U	2.1 U	1.1 U	2.1 U	1.1 U	**1.1** J	**5.0** B	**0.6** M	1.1 U	1.1 U	1.1 U	1.1 U	**1.5**	**8.4**	3.2 U	NA	NA	NA	**88**
DB2 (DMW2)	WT	DB2-9.5	9.5	1990	D	**41**	1.3 U	2.6 U	1.3 U	3.9 U	1.3 U	2.6 U	1.3 U	2.6 U	1.3 U	**7.8**	**5.9** B	**1.3** M	1.3 U	1.3 U	1.3 U	1.3 U	**1.7**	**16.0**	3.9 U	NA	NA	NA	25 U
DB2 (DMW2)	WT	DB2-12	12	1990	D	**16**	1.3 U	2.5 U	1.3 U	3.8 U	1.3 U	2.5 U	1.3 U	2.5 U	1.3 U	1.3 U	**3.6** B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	**0.7** M	3.8 U	NA	NA	NA	25 U
DB2 (DMW2)	WT	DB2-18	18	1990	D	**14**	1.2 U	2.3 U	1.2 U	3.5 U	1.2 U	2.3 U	1.2 U	2.3 U	1.2 U	1.2 U	**5.9** B	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	2.3 U	3.5 U	NA	NA	NA	25 U
DB3 (DMW3)	WT	DB3-2	2	1990	D	3.1 U	1.0 U	2.1 U	1.0 U	3.1 U	1.0 U	2.1 U	1.0 U	2.1 U	1.0 U	1.0 U	**1.8** B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1 U	3.1 U	NA	NA	NA	25 U
DB3 (DMW3)	WT	DB3-3.5	3.5	1990	D	**27**	1.1 U	2.1 U	1.1 U	3.2 U	1.1 U	2.1 U	1.1 U	2.1 U	1.1 U	1.1 U	**1.9** B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	2.1 U	3.2 U	NA	NA	NA	25 U
DB3 (DMW3)	WT	DB3-6	6	1990	D	3.0 U	1.0 U	2.0 U	1.0 U	3.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	**1.6** B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	3.0 U	NA	NA	NA	25 U
DB3 (DMW3)	WT	DB3-7.5	7.5	1990	D	**24** B	1.2 U	2.3 U	1.2 U	3.5 U	1.2 U	2.3 U	1.2 U	2.3 U	1.2 U	1.2 U	**5.9** B	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	2.3 U	3.5 U	NA	NA	NA	25 U
DB3 (DMW3)	WT	DB3-9	9	1990	D	**73** B	1.3 U	2.5 U	1.3 U	3.8 U	1.3 U	2.5 U	1.3 U	2.5 U	1.3 U	1.3 U	**4.8** B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	2.5 U	3.8 U	NA	NA	NA	25 U
DB3 (DMW3)	WT	DB3-13.5	13.5	1990	D	**21** B	1.2 U	2.3 U	1.2 U	3.5 U	1.2 U	2.3 U	1.2 U	2.3 U	1.2 U	**3.4**	**5.4** B	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	**0.7** M	**4.8**	3.5 U	NA	NA	NA	25 U
DB3 (DMW3)	WT	DB3-17	17	1990	D	**23** B	1.2 U	2.4 U	1.2 U	3.6 U	1.2 U	2.4 U	1.2 U	2.4 U	1.2 U	1.2 U	**5.6** B	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	2.4 U	3.6 U	NA	NA	NA	25 U

Table 4
Previous Soil Sample Analytical Results - Petroleum Hydrocarbons and VOCs
8th Avenue Terminals, Inc. Site
Seattle, Washington

						VOCs (µg/kg)									
Station	Potential Source Area	Sample	Approx. Sample Depth (feet)	Year Collected	Parcel	Acetone	Benzene	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	1,1 - Dichloroethane	1,2 -Dichloroethane	1,1 -Dichloroethylene
Preliminary Soil Screening Levels[a]						**2,078 S**	**2.2 A**	**9.2 A**	**20 A**	**460 A**	**13 A**	**49 BP**	**21 A**	**8.4 A**	**14 A**
Laboratory PQLs						**100**	**2.2**	**9.2**	**20**	**460**	**13**	**30**	**21**	**8.4**	**14**
DB8	WT	DB8-5	5	1990	D	**29**	1.1 U	1.1 U	1.1 U	3.4 U	1.1 U	5.6 U	1.1 U	1.1 U	2.3 U
DB8	WT	DB8-8	8	1990	D	**70**	1.2 U	1.2 U	1.2 U	3.7 U	1.2 U	6.2 U	1.2 U	1.2 U	2.5 U
DB8	WT	DB8-11	11	1990	D	**27**	1.3 U	1.3 U	1.3 U	3.8 U	1.3 U	6.3 U	1.3 U	1.3 U	2.5 U
DB9	WT	DB9-5	5	1990	D	**51**	**0.4** J	1.1 U	1.1 U	3.3 U	1.1 U	5.5 U	1.1 U	1.1 U	2.2 U
DB9	WT	DB9-8	8	1990	D	**83**	1.2 U	1.2 U	1.2 U	3.6 U	1.2 U	6.0 U	1.2 U	1.2 U	2.4 U
DB9	WT	DB9-11	11	1990	D	**29**	1.4 U	1.4 U	1.4 U	4.2 U	1.4 U	6.9 U	1.4 U	1.4 U	2.8 U
DB11	WT	DB11-6.5	6.5	1990	D	**5.0**	1.0 U	2.0 U	1.0 U	3.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U
DB11	WT	DB11-8	8	1990	D	320 U	65 U	65 U	65 U	130 U	65 U	65 U	65 U	65 U	65 U
DB11	WT	DB11-9.5	9.5	1990	D	**140** B	13 U	25 U	13 U	38 U	13 U	25 U	13 U	25 U	13 U
DB12	WT	DB12-5	5	1990	D	**38**	1.1 U	1.1 U	1.1 U	3.3 U	1.1 U	5.5 U	1.1 U	1.1 U	2.2 U
DB12	WT	DB12-11.5	11.5	1990	D	**35**	**2.1** M	1.4 U	**8.7**	4.2 U	1.4 U	6.9 U	1.4 U	1.4 U	2.8 U
DB14	WT	DB14-9.5	9.5	1990	D	**29**	1.4 U	1.4 U	1.4 U	4.1 U	1.4 U	6.8 U	1.4 U	1.4 U	2.7 U
HC-1	WT	HC-1/S-1	2.5	1988	D	**150**	2.0 U	2.0 U	6.0 U	6.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

	VOCs (µg/kg)										Petroleum Hydrocarbons (mg/kg)			
Sample	Ethylbenzene	Methylene Chloride	Styrene	Trichloroethylene	1,1,1, -Trichloroethane	1,1,2 -Trichloroethane	Tetrachloroethylene	Toluene	Total Xylenes	Vinyl Chloride	Gasoline-Range Organics	Diesel-Range Organics	Heavy Oil-Range Organics	Total Petroleum Hydrocarbons
Preliminary Soil Screening Levels[a]	**13 A**	**520 A**	**1,287 S**	**24 A**	**2,000 B***	**10 A**	**22 A**	**777 W**	**200 BP**	**16 A**	**30[b] B***	**200 K**	**2,000 B***	**--**
Laboratory PQLs	**13**	**520**	**21**	**24**	**26**	**10**	**22**	**13**	**83**	**16**	**1.5**	**25.9**	**39.2**	**--**
DB8-5	1.1 U	**2.9** B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**0.8** J	**0.8** J	3.3 U	NA	NA	NA	25 U
DB8-8	1.2 U	**2.5** JB	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	3.7 U	NA	NA	NA	25 U
DB8-11	1.3 U	**3.8** B	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	**0.4** M	1.3 U	3.8 U	NA	NA	NA	25 U
DB9-5	1.1 U	**3.1** B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**0.8** J	**0.7** J	3.3 U	NA	NA	NA	**480**
DB9-8	1.2 U	**4.7** B	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	**1.0** J	**0.9** J	3.6 U	NA	NA	NA	25 U
DB9-11	1.4 U	**5.4** B	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	4.2 U	NA	NA	NA	25 U
DB11-6.5	1.0 U	**1.6** B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	3.0 U	NA	NA	NA	25 U
DB11-8	**480**	**66** JB	**180**	65 U	65 U	65 U	65 U	**120**	**1,200**	65 U	NA	NA	NA	**29,000**
DB11-9.5	**80**	**41** B	**28** M	13 U	13 U	13 U	13 U	**16**	**230**	38 U	NA	NA	NA	**2,600**
DB12-5	**0.9** M	**3.7** B	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**0.9** M	**2.9**	3.3 U	NA	NA	NA	**1,100**
DB12-11.5	**0.8** M	**3.4** B	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	**5.9**	**26**	4.2 U	NA	NA	NA	**910**
DB14-9.5	1.4 U	**2.2** JB	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	4.1 U	NA	NA	NA	10 U
HC-1/S-1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	NA	NA	NA	NA

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-1; PQLs are identified with an A.

[b] = Screening level is based on the presence of benzene. If benzene is not present, then the screening level is 100 mg/kg.

All petroleum hydrocarbon values in milligrams per kilogram (mg/kg) and all VOC values in micrograms per kilogram (µg/kg).

Petroleum hydrocarbons by EPA Method 8015 Modified or Ecology Method WTPH-HCID, NWTPH-Dx (after silica gel cleanup), or NWTPH-Gx. VOCs by EPA Methods 8240 or 8260 B.

Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening levels.

* = Most stringent ARAR is consistent across multiple sources.

A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.

U = Chemical not detected at detection limit shown.

B = Laboratory report indicated chemical detected in associated blank; presence in sample may be attributed to field/lab contamination.

J = Laboratory report indicated that the reported value is an estimate.

M = Laboratory report indicated that reported value is an estimate, but with low spectral match parameters.

ND = Chemical not detected; however, detection limit not available.

NA = Not analyzed.

X = Laboratory report noted that the sample chromatograph pattern did not resemble the fuel standard used for quantitation. The detected concentration was likely due to overlap from oil-range hydrocarbons.

lc = Laboratory reported that the compound is likely due to laboratory contamination.

Potential Source Areas:

- DF = Dredge fill area.
- PC = Former pipe and chain manufacturing area.
- SE = Former sawmill and excelsior factory areas.
- AW = Former aluminum window manufacturing area.
- CP = Former concrete products manufacturing operation area.
- WT = Former wood treating area.

Table 5
Previous Soil Sample Analytical Results - Pesticides
8th Avenue Terminals, Inc. Site
Seattle, Washington

						Pesticides (µg/kg)																									
Station	Potential Source Area	Sample	Approximate Sample Depth (feet)	Year Collected	Parcel	Aldrin		Chlordane		Dieldrin		Endosulfan		Endrin		Heptachlor		Heptachlor epoxide		Lindane		Methoxychlor		Toxaphene		4,4 - DDD		4,4 - DDE		4,4 - DDT	
Preliminary Soil Screening Levels[a]						**0.86**	**A**	**5**	**A**	**1.3**	**A**	**1.9**	**A**	**2.8**	**A**	**1.2**	**A**	**2.5**	**A**	**1.9**	**A**	**--**		**104**	**A**	**3.5**	**A**	**3.5**	**A**	**2.9**	**A**
Laboratory PQLs						**0.86**		**5**		**1.3**		**1.9**		**2.8**		**1.2**		**2.5**		**1.9**		**12.8**		**104**		**3.5**		**3.5**		**2.9**	
Nearshore Soil Area																															
Samples have not been collected from the nearshore area for pesticides analysis.																															
Upland Soil Area																															
Former Aluminum Window Manufacturing Area																															
HC-2	AW	HC-2/S-2	5	1988	F	4.9	U	49	U	9.9	U	4.9	U	9.9	U	4.9	U	4.9	U	4.9	U	49	U	99	U	9.9	U	9.9	U	9.9	U
Former Pipe & Chain Manufacturing Area																															
HC-4	PC	HC-4/S-2	5	1988	D	3.7	U	37	U	7.6	U	3.7	U	7.6	U	3.7	U	3.7	U	3.7	U	37	U	76	U	7.6	U	7.6	U	7.6	U
Former Concrete Products Manufacturing Operations Area																															
HC-2	CP	HC-2/S-2	5	1988	F	4.9	U	49	U	9.9	U	4.9	U	9.9	U	4.9	U	4.9	U	4.9	U	49	U	99	U	9.9	U	9.9	U	9.9	U
SS-1	CP	SS-1	0.5	1988	F	3.8	U	38	U	7.8	U	3.8	U	7.8	U	3.8	U	3.8	U	3.8	U	38	U	78	U	7.8	U	7.8	U	7.8	U
SS-2	CP	SS-2	0.5	1988	F	4.3	U	43	U	8.8	U	8.8	U	8.8	U	4.3	U	4.3	U	4.3	U	43	U	88	U	8.8	U	8.8	U	8.8	U
SS-3	CP	SS-3	0.5	1988	F	3.7	U	37	U	7.5	U	3.7	U	7.5	U	3.7	U	3.7	U	3.7	U	37	U	75	U	7.5	U	7.5	U	7.5	U
SS-4	CP	SS-4	0.5	1988	F	3.9	U	39	U	6.7	U	**17.7**		6.7	U	3.9	U	3.9	U	3.9	U	39	U	79	U	6.7	U	6.7	U	6.7	U
SS-5	CP	SS-5	0.5	1988	F	3.9	U	39	U	7.9	U	3.9	U	7.9	U	3.9	U	3.9	U	3.9	U	39	U	79	U	7.9	U	7.9	U	7.9	U
Former Sawmill and Excelsior Factory Areas																															
SS-3	SE	SS-3	0.5	1988	F	3.7	U	37	U	7.5	U	3.7	U	7.5	U	3.7	U	3.7	U	3.7	U	37	U	75	U	7.5	U	7.5	U	7.5	U
Former Wood Treating Area																															
HC-1	WT	HC-1/S-1	2.5	1988	D	3.6	U	36	U	7.3	U	3.6	U	7.3	U	3.6	U	3.6	U	3.6	U	36	U	73	U	7.3	U	7.3	U	7.3	U

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-1; PQLs are identified with an A.

Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening level.

A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.

U = Chemical not detected at detection limit shown.

NA = Not applicable. No nearshore soil samples were analyzed for pesticides.

Potential Source Areas:

PC = Former pipe and chain manufacturing area.

SE = Former sawmill and excelsior factory areas.

AW = Former aluminum window manufacturing area.

CP = Former concrete products manufacturing operation area.

WT = Former wood treating area.

Table 6
Previous Groundwater Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

				PAHs (µg/L)																			
Station	Sample	Date Collected	Parcel	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Methylnaphthalene, 2-	Naphthalene	Phenanthrene	Pyrene	Total cPAHs[b] (U=1/2 MRL)	Total cPAHs[b] (U=0)
Preliminary Groundwater Screening Levels[a]				**2.61 BM**	**10.8 BM***	**10.8 BM**	**0.037 A**	**0.019 A**	**0.02 A**	**0.019 A**	**0.010 A**	**0.012 A**	**0.036 A**	**1.33 BM**	**2.26 BM**	**2.04 BM**	**0.012 A**	**18.2 BM**	**53.8 BM**	**4.81 BM**	**9.83 BO***	**--**	**--**
Laboratory PQLs				**0.015**	**0.032**	**0.03**	**0.037**	**0.019**	**0.02**	**0.019**	**0.010**	**0.012**	**0.036**	**1.15**	**0.017**	**0.074**	**0.012**	**0.009**	**0.011**	**0.014**	**0.018**	**--**	**--**
CMW-1	CMW-1-061708	Jun-08	F	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	1 U	1 U	1 U	0.76 U	0.0 U
CMW-1	CMW-1-082311	Aug-11	F	0.015 U	0.032 U	0.03 U	0.037 U	0.019 U	0.02 U	0.019 U	0.01 UJ	0.012 UJ	0.036 U	1 U	0.017 U	0.074 U	0.012 UJ	0.009 UJ	0.011 UJ	0.014 UJ	0.018 U	0.01 U	0.0 U
CMW-2	CMW-2-061708	Jun-08	D	**4**	1 U	1	1 U	**1**	1 U	1 U	1 U	1 U	1 U	**2.5**	**1.3**	**3.5**	1 U	**1.5**	**3.8**	**4.6**	1 U	**0.81**	**0.1**
CMW-2	CMW-2-082311	Aug-11	F	**0.051**	0.032 U	0.03 U	0.037 U	0.019 U	0.02 U	0.019 U	0.01 UJ	0.012 UJ	0.036 U	1 U	0.017 U	0.074 U	0.012 UJ	0.009 UJ	0.011 UJ	0.014 UJ	0.018 U	0.01 U	0.0 U
CMW-3	CMW-3-061708	Jun-08	D	**4.9**	1 U	**1.8**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.2**	**1.1**	**3.1**	1 U	**4.4**	**2.9**	**3.9**	1 U	0.76 U	0.0 U
CMW-4	CMW-4-061708	Jun-08	D	**2.1**	1 U	1 U	1 U	1 U	1 U	**1**	1 U	1 U	1 U	1 U	1 U	**1**	1 U	1 U	**3.3**	**2.4**	1 U	**0.81**	**0.1**
CMW-5	CMW-5-061708	Jun-08	D	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	1 U	1 U	1 U	0.76 U	0.0 U
CMW-5	CMW-5-0710	Jul-10	D	**0.032**	0.015 U	**0.021**	0.015 U	**0.016**	0.015 U	**0.016**	0.015 U	0.1 U	0.013 UJ	NA	**0.025**	0.015 U	0.015 U	NA	**0.021**	**0.021**	0.015 U	**0.01**	**0.003**
CMW-6	CMW-6-061708	Jun-08	D	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	1 U	1 U	1 U	0.76 U	0.0 U
CMW-6	CMW-6-0710	Jul-10	D	0.015 U	0.015 U	0.015 U	0.015 U	**0.02**	**0.017**	**0.025**	0.015 U	0.1 U	0.013 UJ	NA	**0.026**	0.015 U	0.015 U	NA	**0.033**	**0.017**	**0.024**	**0.02**	**0.02**
CMW-7	CMW-7-061708	Jun-08	D	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	1 U	1 U	1 U	0.76 U	0.0 U
CMW-7	CMW-7-0710	Jul-10	D	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.1 U	0.013 UJ	NA	0.015 U	0.015 U	0.015 U	NA	**0.017**	0.015 U	0.015 U	0.01 U	0.0 U
DMW-2	DMW-2	Sep-90	D	**4.8**	1 U	**1.2**	1 U	1 U	1 U	**0.9** J	**1.1**	1 U	1 U	**6.7**	**1.2**	**1.5**	1 U	**1.2**	**19**	**2.4**	**1.6**	**0.86**	**0.2**
DMW-3	DMW-3	Apr-90	D	**120**	**4.5**	**6.4**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**50**	**2.2**	**58**	1 U	**55**	**140**	**44**	**1.6**	0.35 U	0.0 U
DMW-3	DMW-3	Sep-90	D	**250**	**8.5**	**13**	1 U	**0.5** J	1 U	1 U	1 U	**0.5** J	1 U	NA	**9.6**	**130**	1 U	**170**	**250**	**130**	**11**	**0.76**	**0.1**
DMW-6	DMW-6	Apr-90	D	**7.7**	1 U	**3.4**	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	**2**	**11**	**2.7**	1 U	1 U	1 U	1 U	**9.9**	**1.7**	**1.4**
DMW-6	DMW-6	Sep-90	D	**1**	1 U	**16**	1 U	**8.6**	**1.6**	**2.4**	**3.2**	**8.8**	1 U	NA	**1.7**	1 U	1 U	1 U	1 U	**1.2**	**2.3**	**3.2**	**3.1**
FMW-1	FMW-1	Apr-90	F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FMW-2	FMW-2	Apr-90	F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FMW-2	FMW-2	Sep-90	F	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.76 U	0.0 U
FMW-3	FMW-3	Apr-90	F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HC-1	HC-1	Nov-88	D	2 U	2 U	2 U	4 U	2 U	4 U	4 U	4 U	2 U	4 U	2 U	2 U	2 U	4 U	2 U	4 U	2 U	2 U	2.9 U	0.0 U
HC-1	HC-1	Sep-90	D	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.76 U	0.0 U
HC-2	HC-2	Nov-88	F	2 U	2 U	2 U	4 U	2 U	4 U	4 U	4 U	2 U	4 U	2 U	2 U	2 U	4 U	2 U	4 U	2 U	2 U	2.9 U	0.0 U
HC-4	HC-4	Nov-88	D	2 U	2 U	2 U	4 U	2 U	4 U	4 U	4 U	2 U	4 U	2 U	2 U	2 U	4 U	2 U	4 U	2 U	2 U	2.9 U	0.0 U
HC-4	HC-4	Sep-90	D	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.76 U	0.0 U
HC-19	HC-19	Sep-90	D	**3.1**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.76 U	0.0 U
HC-20	HC-20	Sep-90	D	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.7** J	1 U	1 U	NA	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.78**	**0.07**
MW-1 (1988)	MW-1	Nov-88	F	2 U	2 U	2 U	4 U	2 U	4 U	4 U	4 U	2 U	4 U	2 U	2 U	2 U	4 U	2 U	4 U	2 U	2 U	2.9 U	0.0 U
SLR-1	SLR1-082511	Aug-11	F	0.015 U	0.032 U	0.03 U	0.037 U	0.019 U	0.02 U	0.019 U	0.01 UJ	0.012 UJ	0.036 U	1 U	0.017 U	0.074 U	0.012 UJ	**0.014**	**0.025**	0.014 UJ	0.018 U	0.01 U	0.0 U
SLR-2	SLR2-082511	Aug-11	F	0.015 U	0.032 U	0.03 U	0.037 U	0.019 U	0.02 U	0.019 U	0.01 UJ	0.012 UJ	0.036 U	1 U	0.017 U	0.074 U	0.012 UJ	0.009 UJ	**0.014**	0.014 UJ	0.018 U	0.01 U	0.0 U
SLR-3	SLR3-082511	Aug-11	F	0.015 U	0.032 U	0.03 U	0.037 U	0.019 U	0.02 U	0.019 U	0.01 UJ	0.012 UJ	0.036 U	1 U	**0.017**	0.074 U	0.012 UJ	**0.067**	**0.038**	**0.017**	0.018 U	0.01 U	0.0 U
SLR-6	SLR6-082511	Aug-11	F	0.015 U	0.032 U	0.03 U	0.037 U	0.019 U	0.02 U	0.019 U	0.01 UJ	0.012 UJ	0.036 U	1 U	0.017 U	0.074 U	0.012 UJ	**0.012** J	**0.016**	0.014 UJ	0.018 U	0.01 U	0.0 U
SLR-7	SLR7-082511	Aug-11	F	0.015 U	0.032 U	0.03 U	0.037 U	0.019 U	0.02 U	0.019 U	0.01 UJ	0.012 UJ	0.036 U	1 U	0.017 U	0.074 U	0.012 UJ	**0.091**	**0.015**	0.014 UJ	0.018 U	0.01 U	0.0 U

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-2; PQLs are identified with an A.
[b] = Adjusted for toxicity equivalency factors.
All values in micrograms per liter (µg/L).
Polycyclic aromatic hydrocarbons (PAHs) by EPA Methods 8270 or 8270 SIM.
Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening levels.
* = Most stringent ARAR is consistent across multiple sources.
A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.
U = Chemical not detected at detection limit shown.
J = Laboratory report indicated that the reported value is an estimate.
ND = Chemical not detected; however, detection limit not available.
NA = Not analyzed.

Table 7
Previous Groundwater Sample Analytical Results - Phenols, Phthalates, and PCBs
8th Avenue Terminals, Inc. Site
Seattle, Washington

				Phenols (µg/L)						Phthalates (µg/L)						PCBs (µg/L)								
Station	Sample	Date Collected	Parcel	Phenol	2-Methylphenol	4-Methylphenol	2,4-Dimethylphenol	Benzoic Acid	Pentachlorophenol	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Di-n-butyl phthalate	Diethyl phthalate	Dimethyl phthalate	Di-n-octyl phthalate	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs (U=1/2 MRL)	Total PCBs (U=0)
Preliminary Groundwater Screening Levels[a]				**78.4 BM**	**7.11 BM***	**77.2 BM***	**2.80 A**	**2,243 BM***	**2.60 A**	**1.43 A**	**0.54 A**	**46.6 BO**	**484 BM**	**143 BM***	**1.32 A**	**0.092 A**	**0.092 A**	**0.092 A**	**0.092 A**	**0.092 A**	**0.092 A**	**0.06 A**	**--**	**--**
Laboratory PQLs				**0.96**	**3.94**	**8.01**	**2.80**	**94.5**	**2.60**	**1.43**	**0.54**	**1.61**	**1.35**	**1.33**	**1.32**	**0.092**	**0.092**	**0.092**	**0.092**	**0.092**	**0.092**	**0.06**	**--**	**--**
CMW-1	CMW-1-061708	Jun-08	F	10 U	10 U	10 U	10 U	100 U	10 U	10 U	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.4 U	0.0 U
CMW-1	CMW-1-082311	Aug-11	F	0.96 UJ	3.94 U	8.01[b] U	2.8 U	94.5 U	0.98 UJ	1.43 U	0.54 UJ	1 U	1 U	1 U	1 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.06 U	0.3 U	0.0 U
CMW-2	CMW-2-061708	Jun-08	D	10 U	10 U	10 U	10 U	100 U	10 U	10 U	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.4 U	0.0 U
CMW-2	CMW-2-082311	Aug-11	F	0.96 UJ	3.94 U	8.01[b] U	2.8 U	94.5 U	0.98 UJ	1.43 U	0.54 UJ	1 U	1 U	1 U	1 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.06 U	0.3 U	0.0 U
CMW-4	CMW-4-061708	Jun-08	D	10 U	10 U	10 U	10 U	100 U	10 U	10 U	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.4 U	0.0 U
CMW-5	CMW-5-061708	Jun-08	D	10 U	10 U	10 U	10 U	100 U	10 U	10 U	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.4 U	0.0 U
CMW-6	CMW-6-061708	Jun-08	D	10 U	10 U	10 U	10 U	100 U	10 U	10 U	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.4 U	0.0 U
CMW-7	CMW-7-061708	Jun-08	D	10 U	10 U	10 U	10 U	100 U	10 U	10 U	1 U	1 U	1 U	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.4 U	0.0 U
DMW-2	DMW-2	Apr-90	D	2 U	1 U	1 U	2 U	10 U	5 U	**12 B**	1 U	1 U	1 U	1 U	1 U	ND	NA	NA	NA	ND	ND	ND	ND	ND
DMW-3	DMW-3	Apr-90	D	2 U	1 U	1 U	2 U	10 U	5 U	**20 B**	1 U	1 U	1 U	1 U	1 U	ND	NA	NA	NA	ND	ND	ND	ND	ND
DMW-6	DMW-6	Apr-90	D	2 U	1 U	1 U	2 U	10 U	5 U	**19 B**	1 U	1 U	1 U	1 U	1 U	ND	NA	NA	NA	ND	ND	ND	ND	ND
FMW-1	FMW-1	Apr-90	F	ND	ND	ND	ND	ND	5 U	**29 B**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FMW-2	FMW-2	Apr-90	F	ND	ND	ND	ND	ND	**1.1 J**	**6.7 B**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FMW-3	FMW-3	Apr-90	F	ND	ND	ND	ND	ND	8 U	**17 B**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HC-1	HC-1	Nov-88	D	2 U	2 U	2 U	2 U	50 U	20 U	**4 B**	2 U	4 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.3 U	0.0 U
HC-2	HC-2	Nov-88	F	2 U	2 U	2 U	2 U	50 U	20 U	**5 B**	2 U	4 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.3 U	0.0 U
HC-4	HC-4	Nov-88	D	2 U	2 U	2 U	2 U	50 U	20 U	**6 B**	2 U	4 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.3 U	0.0 U
MW-1 (1988)	MW-1	Nov-88	F	2 U	2 U	2 U	2 U	50 U	20 U	**47 B**	2 U	4 U	2 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2.3 U	0.0 U
SLR-1	SLR1-082511	Aug-11	F	0.96 UJ	3.94 U	8.01[b] U	2.8 U	94.5 U	0.98 UJ	1.43 U	0.54 UJ	1 U	1 U	1 U	1 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.06 U	0.3 U	0.0 U
SLR-2	SLR2-082511	Aug-11	F	0.96 UJ	3.94 U	8.01[b] U	2.8 U	94.5 U	0.98 UJ	1.43 U	0.54 UJ	1 U	1 U	1 U	1 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.06 U	0.3 U	0.0 U
SLR-3	SLR3-082511	Aug-11	F	0.96 UJ	3.94 U	8.01[b] U	2.8 U	94.5 U	0.98 UJ	1.43 U	0.54 UJ	1 U	1 U	1 U	1 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.06 U	0.3 U	0.0 U
SLR-6	SLR6-082511	Aug-11	F	0.96 UJ	3.94 U	8.01[b] U	2.8 U	94.5 U	0.98 UJ	1.43 U	0.54 UJ	1 U	1 U	1 U	1 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.06 U	0.3 U	0.0 U
SLR-7	SLR7-082511	Aug-11	F	0.96 UJ	3.94 U	8.01[b] U	2.8 U	94.5 U	0.98 UJ	1.43 U	0.54 UJ	1 U	1 U	1 U	1 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.06 U	0.3 U	0.0 U

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-2; PQLs are identified with an A.
[b] = 3-Methylphenol + 4-Methylphenol.
All values in micrograms per liter (µg/L).
Phenols and phthalates by EPA Methods SW8270, 8270, or 8270 SIM.
Polychlorinated biphenyls (PCBs) by EPA Methods SW8080 or 8080.
Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening levels.
* = Most stringent ARAR is consistent across multiple sources.
A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.
U = Chemical not detected at detection limit shown.
B = Laboratory report indicated chemical detected in associated blank; presence in sample may be attributed to field/lab contamination.
J = Laboratory report indicated that the reported value is an estimate.
ND = Chemical not detected; however, detection limit not available.
NA = Not analyzed.

Table 8
Previous Groundwater Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Sample	Date Collected	Parcel	Metals (µg/L)																											
				Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium, Total		Copper		Lead		Mercury		Nickel		Selenium		Silver		Thallium		Zinc	
	Preliminary Groundwater Screening Levels[a]			3.87	BO	0.87	BV	2	AC*	4	AC*	0.25	AZ	0.40 [b]	P	2.4	BF*	0.54	AT	0.0052[c]	BM	8.2	BF*	5	AZ*	1.53	BM*	0.47	AW	32.6	BM
	Laboratory PQL			0.18		0.31		0.16		0.29		0.25		0.40		0.75		0.34		0.004		0.36		1.10		0.22		0.21		1.66	
CMW-1	CMW-1-061708	Jun-08	F	NA		**6.59**		**14.2**		NA		1	U	1	U	**25.2**		1	U	0.2	U	NA		**24.6**		1	U	NA		NA	
CMW-1	CMW-1-061708	Jun-08	F	NA		**5.61[d]**		**14.1[d]**		NA		1[d]	U	1[d]	U	**23.8[d]**		1[d]	U	0.2[d]	U	NA		**20.6[d]**		1[d]	U	NA		NA	
CMW-1	CMW-1-071508	Jul-08	F	NA		**2**		**38**		NA		2	U	**3**		10	U	2	U	1	U	NA		**24**		10	U	NA		NA	
CMW-1	CMW-1-082311	Aug-11	F	**2.47**		**43.8**	J	NA		0.29	UJ	0.25	UJ	**1.49**	J	**54.4**	J	0.34	U	0.004	U ht	**10.1**	J	200	U ip	2.2	U	0.21	U	**51**	J
CMW-2	CMW-2-061708	Jun-08	D	NA		**41**		**17.1**		NA		1	U	**1.85**		**9.16**		**2.26**		0.2	U	NA		**9.7**		1	U	NA		NA	
CMW-2	CMW-2-061708	Jun-08	D	NA		**40.6[d]**		**15.5[d]**		NA		1[d]	U	**1.35[d]**		**9.11[d]**		1[d]	U	0.2[d]	U	NA		**9.34[d]**		1[d]	U	NA		NA	
CMW-2	CMW-2-082311	Aug-11	F	**7.12**		**82**		NA		0.29	UJ	0.25	U	**2.13**	J	**34.8**	J	**0.96**		0.004	U ht	**7.09**	J	200	U ip	2.2	U	0.21	U	**5.75**	J
CMW-3	CMW-3-061708	Jun-08	D	NA		**30.5**		**30.3**		NA		1	U	**1.63**		**17.8**		**1.99**		0.2	U	NA		**17.6**		1	U	NA		NA	
CMW-3	CMW-3-061708	Jun-08	D	NA		**28.2[d]**		**27[d]**		NA		1[d]	U	1[d]	U	**18[d]**		1[d]	U	0.2[d]	U	NA		**17.2[d]**		1[d]	U	NA		NA	
CMW-4	CMW-4-061708	Jun-08	D	NA		**177**		**64.2**		NA		1	U	**1.03**		**46.1**		**1.03**		0.2	U	NA		**41.9**		1	U	NA		NA	
CMW-4	CMW-4-061708	Jun-08	D	NA		**171[d]**		**62[d]**		NA		1[d]	U	1[d]	U	**45.5[d]**		1[d]	U	0.2[d]	U	NA		**39.6[d]**		1[d]	U	NA		NA	
CMW-4	CMW-4-071508	Jul-08	D	NA		**170**		**85**		NA		2	U	**7**		**4**		**3**		1	U	NA		**19**		10	U	NA		NA	
CMW-5	CMW-5-061708	Jun-08	D	NA		**62.3**		**20**		NA		1	U	1	U	1	U	1	U	0.2	U	NA		**3.13**		2	U	NA		NA	
CMW-5	CMW-5-061708	Jun-08	D	NA		**8.18[d]**		**9.19[d]**		NA		1[d]	U	1[d]	U	1[d]	U	1[d]	U	0.2[d]	U	NA		**2.88[d]**		1[d]	U	NA		NA	
CMW-5	CMW-5-071508	Jul-08	D	NA		**66**		**24**		NA		2	U	**20**		10	U	2	U	1	U	NA		**20**		10	U	NA		NA	
CMW-6	CMW-6-061708	Jun-08	D	NA		**21.4**		**56.6**		NA		2	U	**3.56**		**26.8**		2	U	0.2	U	NA		**58**		1	U	NA		NA	
CMW-6	CMW-6-061708	Jun-08	D	NA		**16.3[d]**		**47.8[d]**		NA		2[d]	U	**4.32[d]**		**20.1[d]**		2[d]	U	0.2[d]	U	NA		**49[d]**		2[d]	U	NA		NA	
CMW-6	CMW-6-071508	Jul-08	D	NA		**18**		**91**		NA		2	U	**90**		**110**		**5**		1	U	NA		**40**		10	U	NA		NA	
CMW-7	CMW-7-061708	Jun-08	D	NA		**6.22**		**14.4**		NA		1	U	1	U	**6.15**		1	U	0.2	U	NA		**8.2**		1	U	NA		NA	
CMW-7	CMW-7-061708	Jun-08	D	NA		**5.43[d]**		**19.6[d]**		NA		1[d]	U	1[d]	U	**6.33[d]**		1[d]	U	0.2[d]	U	NA		**8.14[d]**		1[d]	U	NA		NA	
CMW-7	CMW-7-071508	Jul-08	D	NA		2	U	**10**		NA		2	U	**3**		10	U	2	U	1	U	NA		10	U	10	U	NA		NA	
DMW-2	DMW-2	Apr-90	D	NA		**7**		NA		NA		2	U	5	U	2	U	30	U	NA		10	U	NA		NA		NA		**44**	
DMW-2	DMW-2	Sep-90	D	NA		ND		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
DMW-2	DMW-2	Sep-90	D	NA		**6[d]**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
DMW-3	DMW-3	Apr-90	D	NA		**7**		NA		NA		2	U	5	U	2	U	30	U	NA		10	U	NA		NA		NA		**11**	
DMW-3	DMW-3	Sep-90	D	NA		ND		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
DMW-3	DMW-3	Sep-90	D	NA		**11[d]**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
DMW-6	DMW-6	Apr-90	D	NA		**9**		NA		NA		2	U	5	U	**3**		30	U	NA		10	U	NA		NA		NA		**23**	
DMW-6	DMW-6	Sep-90	D	NA		**18**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
DMW-6	DMW-6	Sep-90	D	NA		**9[d]**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
FMW-1	FMW-1	Apr-90	F	NA		**1**		NA		NA		2	U	5	U	**3**		30	U	NA		10	U	NA		NA		NA		**17**	
FMW-2	FMW-2	Apr-90	F	NA		**2**		NA		NA		2	U	**11**		**7**		30	U	NA		10	U	NA		NA		NA		**4**	
FMW-2	FMW-2	Sep-90	F	NA		**7**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
FMW-2	FMW-2	Sep-90	F	NA		5[d]	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
FMW-3	FMW-3	Apr-90	F	NA		1	U	NA		NA		2	U	5	U	**3**		30	U	NA		10	U	NA		NA		NA		**7**	

Table 8
Previous Groundwater Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Sample	Date Collected	Parcel	Metals (µg/L)																											
				Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium, Total		Copper		Lead		Mercury		Nickel		Selenium		Silver		Thallium		Zinc	
Preliminary Groundwater Screening Levels[a]				3.87	BO	0.87	BV	2	AC*	4	AC*	0.25	AZ	0.40 [b]	P	2.4	BF*	0.54	AT	0.0052[c]	BM	8.2	BF*	5	AZ*	1.53	BM*	0.47	AW	32.6	BM
Laboratory PQL				0.18		0.31		0.16		0.29		0.25		0.40		0.75		0.34		0.004		0.36		1.10		0.22		0.21		1.66	
HC-1	HC-1	Nov-88	D	**10[d]**		**98[d]**		NA		1[d]	U	**3[d]**		1[d]	U	**2[d]**		5[d]	U	1[d]	U	2[d]	U	5[d]	U	1[d]	U	5[d]	U	**28[d]**	
HC-1	HC-1	Sep-90	D	NA		**100**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-1	HC-1	Sep-90	D	NA		**25[d]**		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-2	HC-2	Nov-88	F	10[d]	U	5[d]	U	NA		1[d]	U	1[d]	U	2[d]	U	**3[d]**		5[d]	U	1[d]	U	**3[d]**		5[d]	U	1[d]	U	5[d]	U	**11[d]**	
HC-4	HC-4	Nov-88	D	10[d]	U	5[d]	U	NA		1[d]	U	1[d]	U	**1[d]**		**5[d]**		5[d]	U	1[d]	U	**2[d]**		5[d]	U	1[d]	U	5[d]	U	**7[d]**	
HC-4	HC-4	Sep-90	D	NA		ND		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-4	HC-4	Sep-90	D	NA		5[d]	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-19	HC-19	Sep-90	D	NA		ND		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-19	HC-19	Sep-90	D	NA		5[d]	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-20	HC-20	Sep-90	D	NA		ND		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
HC-20	HC-20	Sep-90	D	NA		5[d]	U	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
MW-1 (1988)	MW-1	Nov-88	F	**10[d]**		**6[d]**		NA		1[d]	U	1[d]	U	1[d]	U	**12[d]**		5[d]	U	1[d]	U	2[d]	U	5[d]	U	1[d]	U	5[d]	U	**3[d]**	
MW-1 (1994)	MW-1	Jul-94	F	NA		NA		NA		NA		NA		NA		NA		2	U	NA		NA		NA		NA		NA		NA	
MW-2	MW-2	Jul-94	F	NA		NA		NA		NA		NA		NA		NA		2	U	NA		NA		NA		NA		NA		NA	
MW-3	MW-3	Jul-94	F	NA		NA		NA		NA		NA		NA		NA		2	U	NA		NA		NA		NA		NA		NA	
SLR-1	SLR1-082511	Aug-11	F	**0.30**		**5.98**		NA		0.29	U	0.25	U	1	U	**1**		0.34	U	0.004	U ht	**4.06**		20	U ip	0.22	U	0.21	U	**1.36**	
SLR-2	SLR2-082511	Aug-11	F	**0.30**		**5.17**		NA		0.29	U	0.25	U	1	U	0.75	U	0.34	U	0.004	U ht	**2.54**		20	U ip	0.22	U	0.21	U	**2.72**	
SLR-3	SLR3-082511	Aug-11	F	**0.72**		**21**		NA		0.29	U	**3.43**		**29.1**		**5.75**		**1.99**		0.004	U ht	**10.2**		20	U ip	0.22	U	0.21	U	**8.22**	
SLR-6	SLR6-082511	Aug-11	F	**0.65**		**0.74**		NA		0.29	U	0.25	U	1	U	**3.5**		0.34	U	**0.0058**	ht	**3.13**		20	U ip	0.22	U	0.21	U	**3.86**	
SLR-7	SLR7-082511	Aug-11	F	0.18	U	**4.7**		NA		0.29	U	0.25	U	1	U	0.75	U	0.34	U	0.004	U ht	**6.74**		20	U ip	0.22	U	0.21	U	**4.83**	

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, the PQL, or the background concentration (if available), whichever is highest. The basis for each value is identified in Appendix D, Table D-2; PQLs are identified with an A, and background values are identified with a BV.

[b] = Based on total chromium (and chromium III). The preliminary screening level for chromium VI is 1.56 µg/L.

[c] = Based on inorganic mercury. The preliminary screening level for organic mercury is 0.00045 µg/L.

[d] = Dissolved metals analysis.

Table 9 data consists of total metals concentrations unless noted.

Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening levels.

Total metals analyzed by EPA Methods 6010, 6020, 7041, 7841, 7061, or 7741.

Dissolved metals analyzed by EPA Methods SW7041, SW7841, SW7061, SW7741, SW7470, SW6010, 200.8, or 1631E.

* = Most stringent ARAR is consistent across multiple sources.

A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.

BV = Background concentration selected as preliminary screening level because most stringent potential ARAR and PQL are both below background.

U = Analyte not detected at detection limit shown.

J = Laboratory report indicated that the reported value is an estimate.

ip = Laboratory report stated that recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte

ht = Laboratory report stated that analysis performed outside the method-specified holding time requirement.

ND = Analyte not detected; however, detection limit not available.

NA = Not analyzed.

Table 9
Previous Groundwater Sample Analytical Results - Petroleum Hydrocarbons and VOCs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Sample	Date Collected	Parcel	VOCs (µg/L) Chloromethane	Vinyl Chloride	Chloroethane	Methylene Chloride	Acetone	1,1 -Dichloroethylene	1,1 -Dichloroethane	Chloroform	1,2 -Dichloroethane	1,1,1 -Trichloroethane	Carbon Tetrachloride	Trichloroethylene	Benzene	1,1,2 -Trichloroethane	Tetrachloroethylene	Toluene	Chlorobenzene	Ethylbenzene	Styrene	Total Xylenes	Gasoline-Range Organics	Diesel-Range Organics	Heavy Oil-Range Organics	Total Petroleum Hydrocarbons
Preliminary Groundwater Screening Levels[a]				**18.9 P**	**0.36 A**	**34 BG***	**5 X**	**6,000 Y**	**0.73 AQ**	**1 Z**	**4.3 BP**	**0.50 A**	**200 AG***	**0.70 A**	**0.58 A**	**0.80 AL**	**0.77 AL**	**0.23 A**	**1,000 AG***	**20 AX**	**2.23 P**	**100 AG***	**1,000 X**	**800[b] X**	**500 X**	**500 X***	**--**
Laboratory PQLs				**0.80**	**0.36**	**1.1**	**4.7**	**5.5**	**0.36**	**0.60**	**0.40**	**0.50**	**0.58**	**0.70**	**0.58**	**0.40**	**0.57**	**0.23**	**0.35**	**0.30**	**0.20**	**0.32**	**0.97**	**74.4**	**120.5**	**84.8**	**--**
CMW1	CMW1-061708	Jun-08	F	1 U	0.2 U	1 U	5 U	10 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	3 U	100 U	50 U	250 U	NA
CMW1	CMW1-082311	Aug-11	F	0.8 U	0.36 U	1 U	4.7 U	5.5 U	0.36 U	0.6 U	0.4 U	0.5 U	0.58 U	0.7 U	0.58 U	0.35 U	0.57 U	0.23 U	0.35 U	0.3 U	0.2 U	0.32 U	0.62 UJ	74.4 U	120 U	84.8 UJ	NA
CMW2	CMW2-061708	Jun-08	D	**2**	0.2 U	1 U	5 U	10 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	3 U	100 U	**100**	250 U	NA
CMW2	CMW2-082311	Aug-11	F	0.8 U	0.36 U	1 U	4.7 U	5.5 U	0.36 U	0.6 U	0.4 U	0.6 U	0.58 U	0.7 U	0.58 U	0.35 U	0.57 U	0.23 U	0.35 U	0.3 U	0.2 U	0.32 U	0.62 UJ	74.4 U	120 U	84.8 UJ	NA
CMW3	CMW3-061708	Jun-08	D	1 U	0.2 U	1 U	5 U	10 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	3 U	100 U	**92**	250 U	NA
CMW4	CMW4-061708	Jun-08	D	1 U	0.2 U	1 U	5 U	10 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	3 U	100 U	**67**	250 U	NA
CMW5	CMW5-061708	Jun-08	D	1 U	0.2 U	1 U	5 U	10 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	3 U	100 U	50 U	250 U	NA
CMW6	CMW6-061708	Jun-08	D	1 U	0.2 U	1 U	5 U	10 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	3 U	100 U	50 U	250 U	NA
CMW7	CMW7-061708	Jun-08	D	1 U	0.2 U	1 U	5 U	10 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	3 U	100 U	50 U	250 U	NA
DMW-2	DMW-2	Apr-90	D	1 U	1 U	2 U	**0.7** JB	5 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	1 U	NA	NA	NA	10 U
DMW-3	DMW-3	Apr-90	D	1 U	1 U	2 U	**1.4** JB	**7**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.6** J	1 U	**0.6** J	NA	NA	NA	10 U
DMW-6	DMW-6	Apr-90	D	1 U	1 U	2 U	**0.5** JB	5 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	1 U	NA	NA	NA	10 U
FMW-1	FMW-1	Apr-90	F	1 U	1 U	2 U	**1.1** JB	5 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	1 U	NA	NA	NA	NA
FMW-2	FMW-2	Apr-90	F	1 U	1 U	2 U	**0.8** JB	5 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	1 U	NA	NA	NA	NA
FMW-3	FMW-3	Apr-90	F	1 U	1 U	2 U	**1** JB	5 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	1 U	NA	NA	NA	NA
HC-1	HC-1	Nov-88	D	1 U	1 U	3 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3 U	1 U	1 U	1 U	NA	NA	NA	NA
HC-2	HC-2	Nov-88	F	1 U	1 U	3 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3 U	1 U	1 U	1 U	NA	NA	NA	NA
HC-4	HC-4	Nov-88	D	1 U	1 U	3 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3 U	1 U	1 U	1 U	NA	NA	NA	NA
MW-1 (1988)	MW-1	Nov-88	F	1 U	1 U	3 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3 U	1 U	1 U	1 U	NA	NA	NA	NA
MW-1 (1994)	MW-1	Jul-94	F	NA	NA	NA	10 U	10 U	NA	NA	NA	NA	2.5 U	2.5 U	2.5 U	0.5 U	NA	2.5 U	**0.55**	NA	0.5 U	NA	1 U	50 U	**530**	**760**	NA
MW-2	MW-2	Jul-94	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA	NA	0.5 U	NA	0.5 U	NA	1 U	**100** G-1	**2,800**	**2,300**	NA
MW-3	MW-3	Jul-94	F	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA	NA	0.5 U	NA	0.5 U	NA	1 U	50 U	**490**	750 U	NA
SLR-1	SLR1-082511	Aug-11	F	0.8 U	0.36 U	1 U	**4.7** Ic	**23**	0.36 U	0.6 U	0.4 U	0.5 U	0.58 U	0.7 U	0.58 U	0.35 U	0.57 U	0.23 U	0.35 U	0.3 U	0.2 U	0.32 U	0.62 UJ	74.4 U	120 U	84.8 UJ	NA
SLR-2	SLR2-082511	Aug-11	F	0.8 U	0.36 U	1 U	4.7 U	**5.6**	0.36 U	0.6 U	0.4 U	0.5 U	0.58 U	0.7 U	0.58 U	0.35 U	0.57 U	0.23 U	0.35 U	0.3 U	0.2 U	0.32 U	0.62 UJ	74.4 U	120 U	84.8 UJ	NA
SLR-3	SLR3-082511	Aug-11	F	0.8 U	0.36 U	1 U	4.7 U	**15**	0.36 U	0.6 U	0.4 U	0.5 U	0.58 U	0.7 U	0.58 U	0.35 U	0.57 U	0.23 U	0.35 U	0.3 U	0.2 U	0.32 U	**0.6** J	74.4 U	120 U	84.8 UJ	NA
SLR-6	SLR6-082511	Aug-11	F	0.8 U	0.36 U	1 U	4.7 U	5.5 U	0.36 U	0.6 U	0.4 U	0.5 U	0.58 U	0.7 U	0.58 U	0.35 U	0.57 U	**1.2**	0.35 U	0.3 U	0.2 U	0.32 U	0.62 UJ	74.4 U	120 U	84.8 UJ	NA
SLR-7	SLR7-082511	Aug-11	F	0.8 U	0.36 U	1 U	4.7 U	**14**	0.36 U	0.6 U	0.4 U	0.5 U	0.58 U	0.7 U	0.58 U	0.35 U	0.57 U	0.23 U	0.35 U	0.3 U	0.2 U	0.32 U	0.62 UJ	74.4 U	120 U	84.8 UJ	NA

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-2; PQLs are identified with an A.

[b] = Screening level is based on the presence of benzene. If benzene is not present, then the screening level is 1,000µg/L.

All values in micrograms per liter (µg/L).

VOCs by EPA Methods 8240 or 8260 B. Petroleum hydrocarbons by Ecology Methods WTPH-Dx, NWTPH-Dx, WTPH-G, or NWTPH-Gx.

Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening levels.

* = Most stringent ARAR is consistent across multiple sources.

A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.

U = Chemical not detected at detection limit shown.

J = Laboratory reports indicated that the reported value is an estimate.

B = Laboratory reports indicated possible/probable blank contamination.

G-1 = Laboratory report indicated that sample appears to contain extractable diesel-range organics.

Ic = Laboratory report stated that the detected compound was likely due to laboratory contamination.

ND = Chemical not detected; however, detection limit not available.

NA = Not analyzed.

Table 10
Previous Groundwater Sample Analytical Results - Pesticides
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Sample	Date Collected	Parcel	Pesticides (µg/L)																									
				Lindane		Heptachlor		Aldrin		Heptachlor epoxide		Endosulfan		Dieldrin		4,4 -DDE		Endrin		4,4 -DDD		4,4 -DDT		Methoxychlor		Chlordane		Toxaphene	
Preliminary Groundwater Screening Levels[a]				0.002	A	0.003	A	0.002	A	0.002	A	0.0087	AV*	0.004	A	0.005	A	0.004	A	0.004	A	0.007	A	--		0.003	A	0.003	A
Laboratory PQLs				0.002		0.003		0.002		0.002		0.002		0.004		0.005		0.004		0.004		0.007		0.024		0.003		0.003	
HC-1	HC-1	Nov-88	D	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.5	U	0.5	U	1	U
HC-2	HC-2	Nov-88	F	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.5	U	0.5	U	1	U
HC-4	HC-4	Nov-88	D	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.5	U	0.5	U	1	U
MW-1 (1988)	MW-1	Nov-88	F	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.5	U	0.5	U	1	U

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-2; PQLs are identified with an A.

All values in micrograms per liter (µg/L).

Pesticides by EPA Method 8080.

Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening levels.
and are above the PQLs.

* = Most stringent ARAR is consistent across multiple sources.

A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.

U = Chemical not detected at detection limit shown.

Table 11
Previous Catch Basin Solids Sample Analytical Results - PAHs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Sample	Year Collected	Parcel	PAHs (mg/kg)																
				Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Methylnaphthalene, 2-	Naphthalene	Phenanthrene	Pyrene
Preliminary Storm Water Catch Basin Solids Screening Levels[a] (DW)				**0.50 C***	**0.56 AH**	**0.96 C***	**0.67 C***	**0.067 A**	**0.067 A**	**0.067 A**	**0.067 A**	**0.067 A**	**0.067 A**	**1.70 C***	**0.54 C***	**0.067 A**	**0.67 C***	**2.10 C***	**1.50 C***	**2.60 C***
Laboratory PQLs				**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**
DP6CB1	STORM-5	2009	D	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	**0.084**	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	**0.2**
DP3CB5	STORM-13	2009	D	0.031 U	0.031 U	**0.76**	**0.16**	**0.13**	**0.28**	**0.17**	**0.17**	**0.41**	0.031 U	**0.42**	0.031 U	0.031 U	**0.058**	0.031 U	**0.72**	**0.86**
DP4CB3	STORM-14	2009	D	0.045 U	0.045 U	**1.4**	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	**0.25**	0.045 U	**0.47**	0.045 U	0.045 U	0.072 U	**0.18**	**0.61**	**0.88**
DP5CB1 and DP3CB1	CB123-071908	2008	D	NA	0.42 U	**2.8**	**0.29 J**	**1.6**	**0.83**	**1.1**	**1.4**	**2.8**	0.42 U	**11**	NA	**0.23 J**	**0.57**	**0.36 J**	**11**	**5.6**
DP4CB3	CB37	2004	D	**0.17**	0.14 U	**0.82**	0.14 U	**0.61**	**0.20**	**0.48**	**0.32**	**1.0**	0.14 U	**3.60**	**0.35**	0.14 U	NA	0.14 U	**3.0**	**2.60**

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-3; PQLs are identified with an A.
SMS criteria presented for dry weight concentrations. Catch basin solids will be tested for total organic carbon and will also be compared to SMS organic carbon-normalized criteria.
All values in milligrams per kilogram (mg/kg).
Polycyclic aromatic hydrocarbons (PAHs) by EPA Methods 8310 or SW 8270D.
Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening level.
Analytical results are dry weight.
* = Most stringent ARAR is consistent across multiple sources.
A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.
U = Chemical not detected at detection limit shown.
NA = Not analyzed.

Table 12
Previous Catch Basin Solids Sample Analytical Results - Metals
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Sample	Year Collected	Parcel	Metals (mg/kg)																			
				Arsenic, Inorganic		Barium		Cadmium		Chromium, Total		Copper		Lead		Mercury		Selenium		Silver		Zinc	
Preliminary Storm Water Catch Basin Solids Screening Levels[a] (DW)				7.3	BA	540	AM	3.7	AM	35.6	BA	310	AM	40	AM	0.41	C*	3.0	AI	6.1	C*	410	C*
Laboratory PQLs				0.20		0.50		0.20		0.50		0.50		1.0		0.05		0.50		0.20		4.0	
DP6CB1	STORM-5	2009	D	**4.4**		**160**		**1.4**		**37**		NA		**110**		**0.052**		2.9	U	0.72	U	NA	
DP3CB5	STORM-13	2009	D	**7.6**		**230**		**1.5**		**81**		NA		**280**		**0.047**		3.1	U	0.78	U	NA	
DP4CB3	STORM-14	2009	D	**14**		**170**		**1.6**		**65**		NA		**310**		**0.1**		2.2	U	1.1	U	NA	
DP5CB1 and DP3CB1	CB123-071908	2008	D	**20**		NA		NA		NA		**175**		**99**		0.07	U	NA		NA		**1,950**	
DP4CB3	CB37	2004	D	20	U	NA		NA		NA		**173**		**250**		**0.08**		NA		NA		**1,220**	

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, the PQL, or the background concentration (if available), whichever is highest. The basis for each value is identified in Appendix D, Table D-3; PQLs are identified with an A, and background values are identified with a BA.

SMS criteria presented for dry weight concentrations. Catch basin solids will be tested for total organic carbon and will also be compared to SMS organic carbon-normalized criteria.

All values in milligrams per kilogram (mg/kg).

Metals analyzed by EPA Method 6010B, 7471, or 7470.

Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening level.

Analytical results are dry weight.

* = Most stringent ARAR is consistent across multiple sources.

A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.

BA = Background concentration selected as preliminary screening level because most stringent potential ARAR and PQL are both below background.

U = Analyte not detected at detection limit shown.

NA = Not analyzed.

Table 13
Previous Catch Basin Solids Sample Analytical Results - Petroleum Hydrocarbons and VOCs
8th Avenue Terminals, Inc. Site
Seattle, Washington

				VOCs (µg/kg)																				Petroleum Hydrocarbons (mg/kg)		
Station	Sample	Year Collected	Parcel	Acetone	Benzene	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	1,1 - Dichloroethane	1,2 -Dichloroethane	1,1 -Dichloroethylene	Ethylbenzene	Methylene Chloride	Styrene	Trichloroethylene	1,1,1, -Trichloroethane	1,1,2 -Trichloroethane	Tetrachloroethylene	Toluene	Total Xylenes	Vinyl Chloride	Gasoline-Range Organics	Diesel-Range Organics	Heavy Oil-Range Organics
Preliminary Storm Water Catch Basin Solids Screening Levels[a] (DW)				--	--	--	--	--	--	--	--	--	--	**1.0 A**	--	--	**1.0 A**	--	--	**1.0 A**	--	**3.0 A**	--	--	--	--
Laboratory PQLs				**5.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**2.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**1.0**	**3.0**	**1.0**	**5.0**	**5.0**	**10**
DP6CB1	STORM-5	2009	D	**270**	**1.6**	1.4 U	1.4 U	7.2 U	7.2 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	7.2 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	7.2 U	4.3 U	1.4 U	0.14 U	**82**	**490**
DP3CB5	STORM-13	2009	D	**800**	**3.1**	1.6 U	1.6 U	7.8 U	7.8 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	7.8 U	**1.9**	1.6 U	1.6 U	1.6 U	1.6 U	7.8 U	**9.5**	1.6 U	**0.39**	**81**	**760**
DP4CB3	STORM-14	2009	D	**1,100**	**4.0**	2.7 U	2.7 U	13 U	13 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	13 U	2.9 U	2.7 U	2.7 U	2.7 U	2.7 U	13 U	**12**	2.7 U	**0.79**	**130**	**990**
DP5CB1 and DP3CB1	CB123-071908	2008	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**810**	**1600**
PDP4CB3	CB37	2004	D	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**180**	**650**

Notes:

[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-3; PQLs are identified with an A.

SMS criteria presented for dry weight concentrations. Catch basin solids will be tested for total organic carbon and will also be compared to SMS organic carbon-normalized criteria.

All petroleum hydrocarbon values in milligrams per kilogram (mg/kg) and all VOC values in micrograms per kilogram (µg/kg).

Petroleum hydrocarbons by Ecology Method NWTPH-Dx or NWTPH-Gx. VOCs by EPA Method 8260B.

Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening level.

Analytical results are dry weight.

A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.

U = Chemical not detected at detection limit shown.

NA = Not analyzed.

Table 14
Previous Catch Basin Solids Sample Analytical Results - Phenols, Phthalates and PCBs
8th Avenue Terminals, Inc. Site
Seattle, Washington

Station	Sample	Year Collected	Parcel	Phenols (mg/kg)						Phthalates (mg/kg)						PCBs (mg/kg)								
				Phenol	2-Methylphenol	4-Methylphenol	2,4-Dimethylphenol	Benzoic Acid	Pentachlorophenol	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Di-n-butyl phthalate	Diethyl phthalate	Dimethyl phthalate	Di-n-octyl phthalate	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs (U=1/2 MRL)	Total PCBs (U=0)
Preliminary Storm Water Catch Basin Solids Screening Levels[a] (DW)				**0.42 C***	**0.067 A**	**0.67 C***	**0.067 A**	**0.67 A**	**0.36 C**	**1.3 C***	**0.067 A**	**1.4 C***	**0.20 C***	**0.071 C***	**6.2 C***	--	--	--	--	--	--	--	**12 C***	**12 C***
Laboratory PQLs				**0.067**	**0.067**	**0.067**	**0.067**	**0.67**	**0.33**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.067**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	--	--
DP5CB1 and DP3CB1	CB123-071908	2008	D	0.42 U	0.42 U	NA	4.2 U	4.2 U	2.1 U	**1.7** B	**2.4**	0.42 U	0.42 U	0.42 U	0.42 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.03 U	0.079 U	0.1 U	0.0 U
DP4CB3	CB37	2004	D	NA	NA	NA	NA	NA	NA	**1.6**	**1.3**	0.14 U	0.14 U	**0.28**	0.14 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.07 U	0.0 U

Notes:

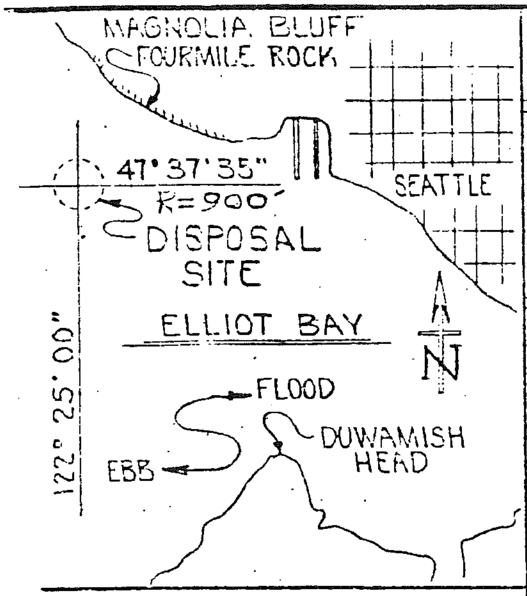
[a] = Preliminary screening levels are based on the most stringent potential ARARs for the site, or the PQL, whichever is higher. The basis for each value is identified in Appendix D, Table D-3; PQLs are identified with an A.

SMS criteria presented for dry weight concentrations. Catch basin solids will be tested for total organic carbon and will also be compared to SMS organic carbon-normalized criteria.
All values in milligrams per kilogram (mg/kg).
Phenols and phthalates by EPA Methods SW 8270D.
Polychlorinated biphenyls (PCBs) by EPA Method SW8080.
Values in bold present detected concentrations and those highlighted values indicate detected above the proposed preliminary screening level.
Analytical results are dry weight.
* = Most stringent ARAR is consistent across multiple sources.
A = PQL selected as preliminary screening level because most stringent potential ARAR is below the PQL.
U = Chemical not detected at detection limit shown.
B = Laboratory report indicated chemical detected in associated blank; presence in sample may be attributed to field/lab contamination.
NA = Not analyzed.

Appendix C

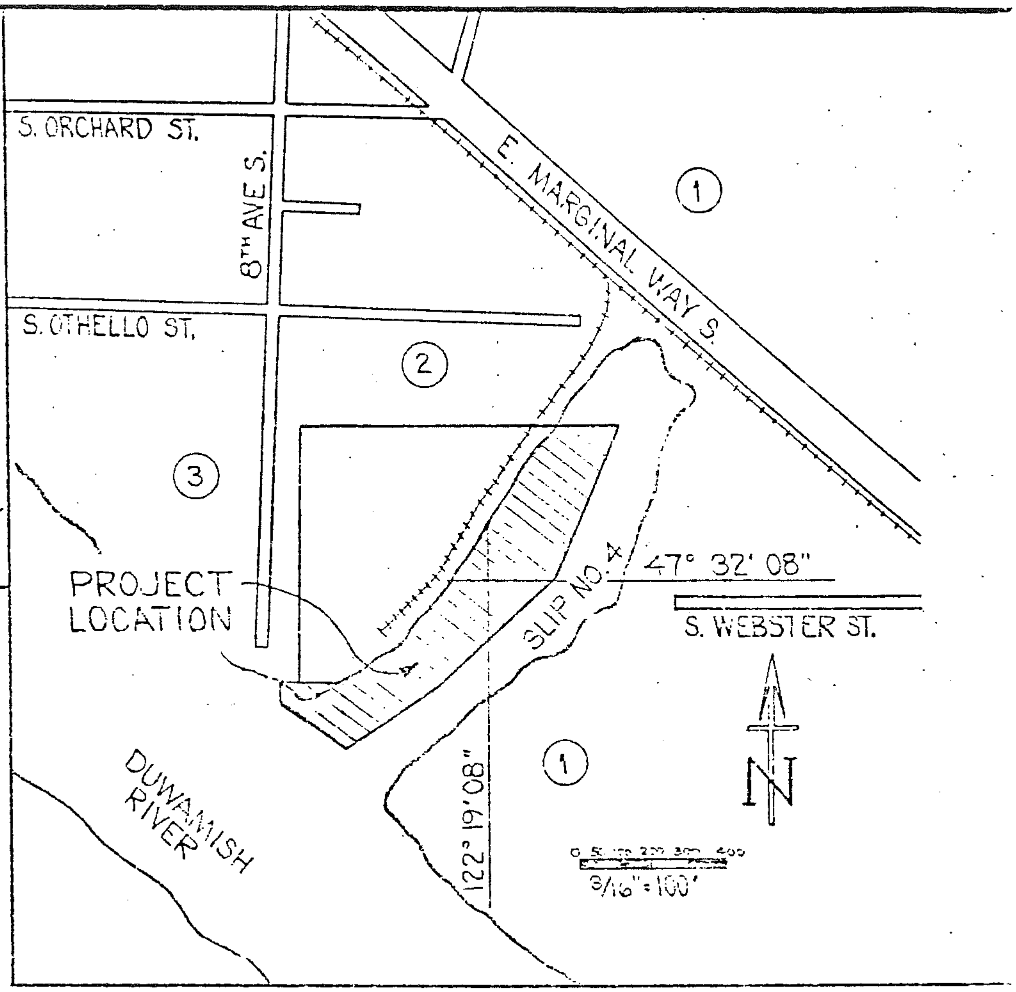
Historical Dredging and Sediment Sampling Documents

Copies of US Army Corps of Engineers Files
Concerning 1981 Dredging of Slip 4,
SLR International Corp.



VICINITY MAP

DISPOSAL SITE



VICINITY MAP

PROJECT LOCATION

NO FEDERAL PIERHEAD LINES ESTABLISHED

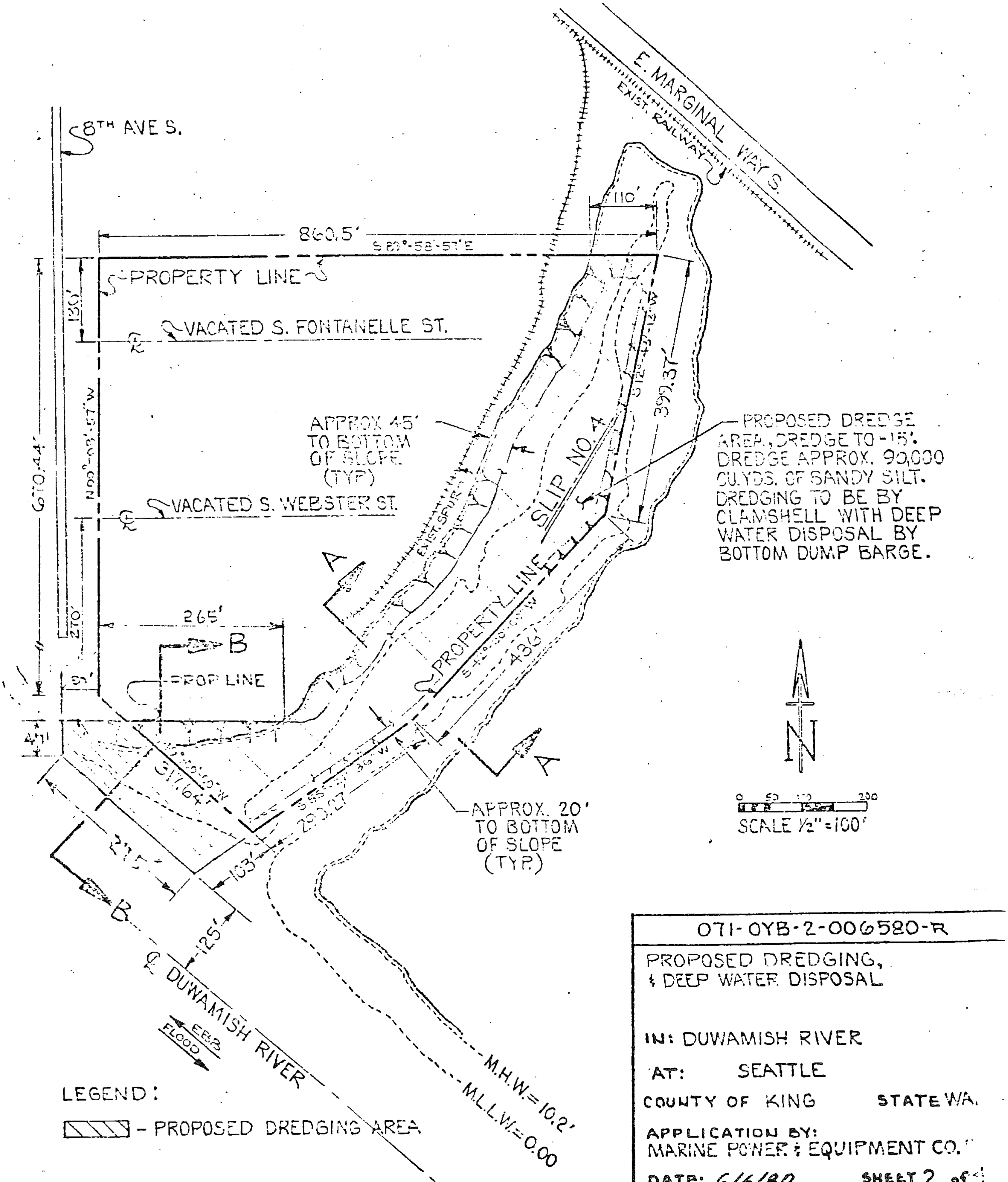
PURPOSE: TO ESTABLISH A SAFE DEPTH FOR COMMERCIAL MARINE TRAFFIC.

DATUM: M.L.L.W.= 0.00 N.O.S.

ADJACENT PROPERTY OWNERS:

1. BOEING AIRCRAFT CO., 7755 E. MARGINAL WAY S. SEATTLE, WA. 98108
2. LAYRITE CONCRETE PRODUCTS CO., 7265 E. MARGINAL WAY S. SEATTLE, WA. 98108
3. PUGET SOUND TRUCK LINES, 3720 AIRPORT WAY S. SEATTLE, WA. 98108

071-0YB-2-006580-R
PROPOSED DREDGING & DEEP WATER DISPOSAL IN DUWAMISH RIVER AT SEATTLE COUNTY OF KING STATE WA.
APPLICATION BY MARINE POWER & EQUIP CO., INC. SHEET 1 OF 4 DATE 6/16/80 REV 1 8/29/80, REV 2 DEC. 80



071-0YB-2-006580-R

PROPOSED DREDGING, & DEEP WATER DISPOSAL

IN: DUWAMISH RIVER

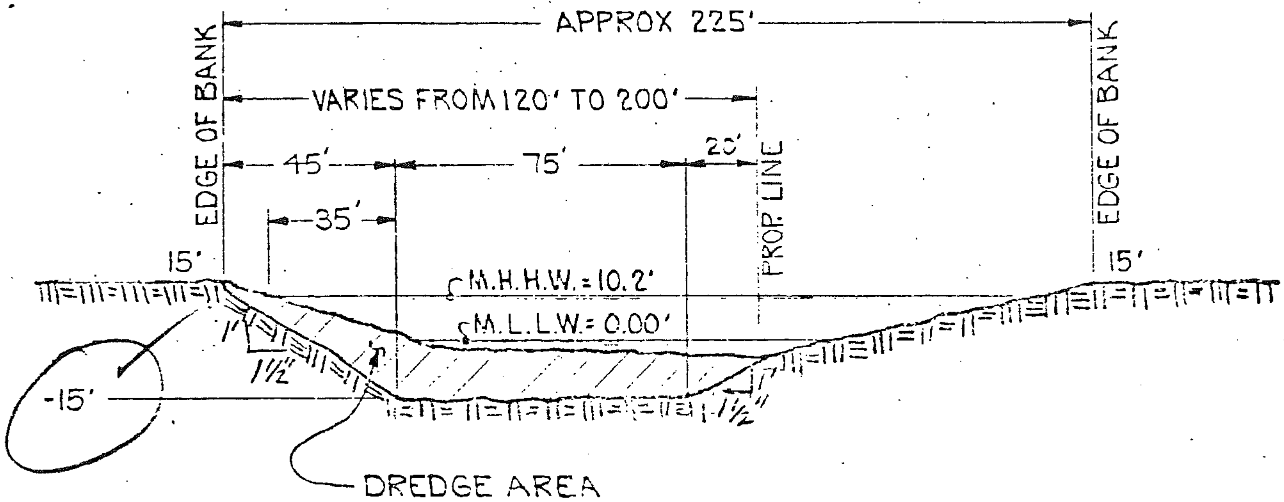
AT: SEATTLE

COUNTY OF KING STATE WA.

APPLICATION BY: MARINE POWER & EQUIPMENT CO.

DATE: 6/6/80 SHEET 2 of 4

REV 1. 8/28/80, 30 Dec 80



SECTION A-A

0 10 25 50 100
SCALE: 1" = 50'-0"

071-0YB-2-006580-R

PROPOSED DREDGING &
DEEP WATER DISPOSAL

IN: DUWAMISH RIVER

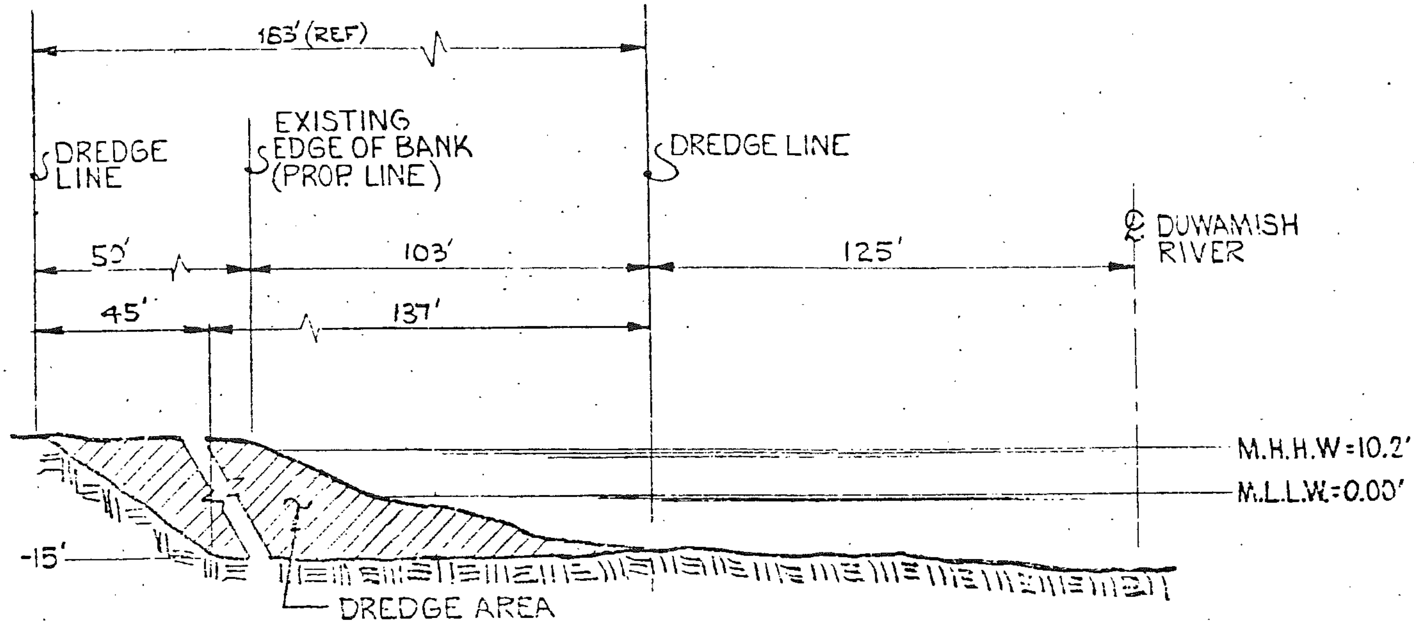
AT: SEATTLE

COUNTY OF KING STATE WA.

APPLICATION BY:
MARINE POWER & EQUIP. CO. INC.

DATE: 6/6/80 SHEET 3 of 4

REV 1 8/28/80, 30 OCT 80



SECTION B-B

0 10 25 50 100

SCALE: 1" = 50'-0"

071-OYB-2-006580-R

PROPOSED DREDGING & DEEP WATER DISPOSAL

IN DUWAMISH RIVER
AT SEATTLE
COUNTY OF KING STATE WA
APPLICATION BY MARINE POWER & EQUIP. CO. INC.
SHEET 4 OF 4 DATE 6/6/80
REV 1 8/25/80, 30 DEC '80

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX C-3755
SEATTLE, WASHINGTON 98124

NPSOP-RF

27 JAN 1981

Marine Power & Equipment Co., Inc.
[illegible]
[illegible]
[illegible]

Reference: [illegible]

Inclosed is a Department of the Army permit which authorizes performance of the work described in your referenced application.

You are cautioned that any change in the location or plans of the work will require submittal of a revised plan to this office for approval prior to accomplishment.

Your attention is drawn to conditions "o" and "n" of the permit which specify the expiration dates for both commencement and completion of the work and that you notify this office of the dates the work is started and completed.

Sincerely yours,

Gerald A Keller

GERALD A. KELLER
Chief, Regulatory Functions Branch

1 Incl
As stated
CF:
Compliance File

Application No. ~~071-OYB-2-006~~

Name of Applicant ~~Marine Power & Equipment Company~~

Effective Date 27 JAN 1981

Expiration Date (If applicable) ~~See General Condition o~~

DEPARTMENT OF THE ARMY
PERMIT

Referring to written request dated ~~1 May 1980~~ for a permit to:

(X) Perform work in or affecting navigable waters of the United States, upon the recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403);

(X) Discharge dredged or fill material into waters of the United States upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 404 of the Federal Water Pollution Control Act (86 Stat. 816, P.L. 92-500);

( ) Transport dredged material for the purpose of dumping it into ocean waters upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat. 1052; P.L. 92-532);

Marine Power & Equipment Company
1441 N. Northlake Way
Seattle, Washington

is hereby authorized by the Secretary of the Army:

to dredge approximately 85,000 cubic yards of sandy silt by clamshell; dredge material to be deposited at deep water site in Elliott Bay (Provide adequate water depth for safe vessel movement)

in Duwamish River

at Seattle, Washington

in accordance with the plans and drawings attached hereto which are incorporated in and made a part of this permit (on drawings: give file number or other definite identification marks.)

071-OYB-2-006580, 4 sheets

subject to the following conditions:

I. General Conditions:

a. That all activities identified and authorized herein shall be consistent with the terms and conditions of this permit; and that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in the modification, suspension or revocation of this permit, in whole or in part, as set forth more specifically in General Conditions j or k hereto, and in the institution of such legal proceedings as the United States Government may consider appropriate, whether or not this permit has been previously modified, suspended or revoked in whole or in part.

EACL 12

b. That all activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States or ocean waters, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibitions, pretreatment standards and management practices established pursuant to the Federal Water Pollution Control Act of 1972 (P.L. 92-500; 86 Stat. 816), the Marine Protection, Research and Sanctuaries Act of 1972 (P.L. 92-532, 86 Stat. 1052), or pursuant to applicable State and local law.

c. That when the activity authorized herein involves a discharge during its construction or operation, of any pollutant (including dredged or fill material), into waters of the United States, the authorized activity shall, if applicable water quality standards are revised or modified during the term of this permit, be modified, if necessary, to conform with such revised or modified water quality standards within 6 months of the effective date of any revision or modification of water quality standards, or as directed by an implementat on plan contained in such revised or modified standards, or within such longer period of time as the District Engineer, in consultation with the Regional Administrator of the Environmental Protection Agency, may determine to be reasonable under the circumstances.

d. That the discharge will not destroy a threatened or endangered species as identified under the Endangered Species Act, or endanger the critical habitat of such species.

e. That the permittee agrees to make every reasonable effort to prosecute the construction or operation of the work authorized herein in a manner so as to minimize any adverse impact on fish, wildlife, and natural environmental values.

f. That the permittee agrees that he will prosecute the construction or work authorized herein in a manner so as to minimize any degradation of water quality.

g. That the permittee shall permit the District Engineer or his authorized representative(s) or designee(s) to make periodic inspections at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

h. That the permittee shall maintain the structure or work authorized herein in good condition and in accordance with the plans and drawings attached hereto.

i. That this permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and that it does not authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations nor does it obviate the requirement to obtain State or local assent required by law for the activity authorized herein.

j. That this permit may be summarily suspended, in whole or in part, upon a finding by the District Engineer that immediate suspension of the activity authorized herein would be in the general public interest. Such suspension shall be effective upon receipt by the permittee of a written notice thereof which shall indicate (1) the extent of the suspension, (2) the reasons for this action, and (3) any corrective or preventative measures to be taken by the permittee which are deemed necessary by the District Engineer to abate imminent hazards to the general public interest. The permittee shall take immediate action to comply with the provisions of this notice. Within ten days following receipt of this notice of suspension, the permittee may request a hearing in order to present information relevant to a decision as to whether his permit should be reinstated, modified or revoked. If a hearing is requested, it shall be conducted pursuant to procedures prescribed by the Chief of Engineers. After completion of the hearing, or within a reasonable time after issuance of the suspension notice to the permittee if no hearing is requested, the permit will either be reinstated, modified or revoked.

k. That this permit may be either modified, suspended or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would otherwise be in the public interest. Any such modification, suspension, or revocation shall become effective 30 days after receipt by the permittee of written notice of such action which shall specify the facts or conduct warranting same unless (1) within the 30-day period the permittee is able to satisfactorily demonstrate that (a) the alleged violation of the terms and the conditions of this permit did not, in fact, occur or (b) the alleged violation was accidental, and the permittee has been operating in compliance with the terms and conditions of the permit and is able to provide satisfactory assurances that future operations shall be in full compliance with the terms and conditions of this permit; or (2) within the aforesaid 30-day period, the permittee requests that a public hearing be held to present oral and written evidence concerning the proposed modification, suspension or revocation. The conduct of this hearing and the procedures for making a final decision either to modify, suspend or revoke this permit in whole or in part shall be pursuant to procedures prescribed by the Chief of Engineers.

l. That in issuing this permit, the Government has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Government may, in addition, institute appropriate legal proceedings.

m. That any modification, suspension, or revocation of this permit shall not be the basis for any claim for damages against the United States.

n. That the permittee shall notify the District Engineer at what time the activity authorized herein will be commenced, as far in advance of the time of commencement as the District Engineer may specify, and of any suspension of work, if for a period of more than one week, resumption of work and its completion.

ENVIRONMENTAL ASSESSMENT
For Work Authorized in Accordance with Section
10 of the River and Harbor Act of March 3, 1899
and Section 404 of the Clean Water Act
Described in Permit Application No. 071-OYB-2-006580
of Marine Power and Equipment Company

1. The work was coordinated with appropriate state and Federal agencies in accordance with procedures specified in 33 CFR, Parts 320-329.

2. The work is to dredge approximately 85,000 cubic yards of sandy silt by clamshell in the Duwamish River at Seattle, Washington. (Deposit dredged material at deep water site in Elliott Bay.)

3. This application has been reviewed in light of comments received from the public and agency coordination. Evaluation by this office considered relevant factors including esthetics, fish and wildlife values, flood damage prevention, land and shoreline management classifications, conservation, navigation, recreation, water supply, water quality, archeological and historic values, economics, ecological and general environmental considerations, endangered species or their critical habitat, energy needs, safety, food production, and general public welfare. This review has not identified any potentially significant adverse effects for action under the terms of the permit application.

4. The work has been considered with respect to Indian Treaty fishing rights, per the decision reached in United States v. Washington, (384 F. Supp. 312, affirmed 520 F. 2d 676, cert. denied 423 U.S. 1086), as modified in Supreme Court's decision of 2 July 1979. I have determined that the work will not significantly interfere with the Indian fishery, including Indian access to usual and accustomed fishing grounds and opportunity to fish in these areas. I have further determined that the work will not significantly interfere with salmonids, their habitat or promote adverse impacts on fishing success in these areas.

5. I have determined that performance of this work, in accordance with the conditions of the permit, will not significantly affect the quality of the human environment. Further, I have determined that the issuance of this particular permit is a Federal action not having a significant impact on the environment and thus have concluded that the preparation of a formal EIS is not required.

21 Jan 81
Date

LEON K. MORASKI
Colonel, Corps of Engineers
District Engineer

FINDINGS OF FACT

Reference: Marine Power and Equipment Company - 071-OYB-2-006580

Concerning issuance of Department of the Army Permit under Section 10 of the River and Harbor Act of March 3, 1899 (30 Stat. 1151; 33 U.S.C. 403) and Section 404 of the Clean Water Act to dredge approximately 85,000 cubic yards of sandy silt by clamshell in the Duwamish River at Seattle, Washington. (Deposit dredged material at deep water site in Elliott Bay.)

1. I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application, as well as the stated views of other interested Federal and non-Federal agencies and the concerned public, relative to the work in navigable waters of the United States.

2. All factors relevant to this work were considered in accordance with our regulations. These factors include, but are not limited to, conservation, economics, esthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use, navigation, recreation, water supply, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

3. The following points are considered pertinent in evaluation of comments received in coordinating the public notice dated 23 June 1980 and drawing revision notice dated 23 September 1980. The revision consisted of modifying the boundary configuration of the proposed dredged area to satisfy a concern expressed by the City of Seattle. On 29 October 1980 the applicant further revised the proposed dredged area boundary configuration to insure dredging operations noninterference with an existing submarine telephone cable.

a. Federal Agencies. The National Oceanic and Atmospheric Administration, the Environmental Protection Agency (EPA) and the Department of the Interior have no objection to the work. EPA, in 10 November 1980 letter, conditioned its nonopposing position advising that the material to be dredged has high concentrations of sulfides. The conditions are:

(1) Loads of dredged material to be dumped at Four Mile Rock Disposal Site will be limited to a volume of 1,000 cubic yards.

(2) In the event of adverse impacts on fisheries resources, due to the nature of the material being dredged, dredging operations will cease and modifications in the dredging procedures to alleviate the problem will be coordinated with EPA.

The applicant, in 3 November 1980 letter to EPA, advised that the conditions outlined in the 10 November 1980 letter will be complied with. The EPA 3 November 1980 letter will be mailed to the permittee as a condition letter.

b. State and Local Agencies. The State of Washington and the City of Seattle, the local governing body, have no objections to the work. The State of Washington, in 22 December 1980 letter, conditioned its nonopposing position with the following requirements:

(1) A water quality modification be obtained from the Department of Ecology prior to commencement of work.

(2) Time Limitation: Construction may be started immediately, and shall be completed by December 31, 1981. A time extension will be considered upon reapplication. However, no dredging shall be accomplished from April 1 to June 15 of any year.

(3) A floating clamshell may be used for dredging. Each pass of the clamshell bucket shall be complete, and there is to be no stockpiling in the water.

(4) Dredging operations shall be conducted at all times in such a manner as to cause little or no disturbance or siltation to the adjacent waters.

(5) Dredged materials shall be deposited at an approved, designated Department of Natural Resources deep water disposal site.

(6) The dredged banks shall be sloped no steeper than 1.5 feet horizontal to each 1.0 foot vertical.

(7) If, at any time, there should be fish in distress, a fish kill, or water quality problems as a result of this project, the dredging operation shall be stopped immediately. The summer and fall may be critical times of low dissolved oxygen.

(8) The following is the limitation of dissolved oxygen:

Allowable dredging - 5.1mg/l D.O. or over
Cease dredging - 5.0mg/l D.O. or under

(9) The applicant will be informed if dissolved oxygen does below 5mg/l.

(10) No petroleum products or other deleterious materials shall be allowed to enter state waters as a result of this project.

(11) Any debris resulting from this project shall be removed from the water and disposed of or placed in such a manner to prevent its being washed back into the water by high water or wave action.

(12) Water quality is not to be degraded to the detriment of fish life as a result of this project. Compliance with the quality limits set forth in the Washington State Water Quality Regulations shall be maintained throughout the life of the project.

(13) These provisions shall be closely followed by the contract(s) and the equipment operator(s) and shall be on the job site at all times.

The State of Washington 22 December 1980 letter will be mailed to the permittee with the permit as a condition letter.

Comments of the state and local governmental agencies are predicated upon the applicant's compliance with the State Shoreline Management Act and applicable local laws, regulations and codes governing this work.

c. Treaty Indians. The Muckleshoot Indian Tribe, in 8 July 1980 letter, recommended that dredging be conducted between 15 June and 15 March of the calendar year and advised that tribal members will be fishing for salmonids at the worksite between July and January of the calendar year. The applicant, in 5 December 1980 letter to the Muckleshoot Indian Tribe, advised that the dredging is planned to be performed between 15 June and 15 March of the calendar year with the estimated performance period being during the month of January 1981. The applicant further advised the Muckleshoot Indian Tribe that the necessary precautions will be taken to insure noninterference with the Tribe's commercial fishing activities. The work has been considered with respect to the decision reached in United States v. Washington, (384 F. Supp. 312, affirmed 520 F. 2d 676, cert. denied 423 U.S. 1086), as modified in Supreme Court's decision of 2 July 1979, and it was found that the project will not adversely affect any treaty rights.

d. Individual or Organized Groups. No individual or organized groups have opposed the work. This work is considered to be in the general public interest.

e. Other Considerations: The work will have no significant adverse effect on items recorded in paragraph 2 above. Particular attention was given to the location and general design to prevent possible obstructions to navigation with respect to both the public use and the neighboring proprietors' access to the Duwamish River.

The work will provide an adequate water depth for safe vessel movement.

f. The work was evaluated in accordance with the objectives of the Environmental Protection Agency's Section 404(b) guidelines, contained in the Clean Water Act (40 CFR 230). The technical evaluation considered the following parameters: physical and chemical-biological interactive effects, water quality impacts, selection of disposal sites, and conditioning of discharges of dredged or fill material. As a result of this evaluation, I have concluded that the discharge will not have significant adverse impacts on the aquatic environment.

4. I find that issuance of this Department of the Army Permit is predicated upon a thorough analysis of the various factors identified herein. The work is deemed to comply with state and local laws, regulations and codes. There are no identified major adverse environmental effects. The work is consonant with National policy, statutes, and administrative directives. The total public interest would best be served by the issuance of a Department of the Army permit.

21 Jan 81
Date

LEON K. MORASKI
Colonel, Corps of Engineers
District Engineer

Marine Power & Equipment
Diesel . . . Marine . . . Electric

1441 North Northlake Way
Seattle, Washington 98103

MElrose 2-1441

December 11, 1980

U.S. Army
Corps of Engineers
Seattle District
P.O. Box C-3755
Seattle, Washington 98124

Attn: Regulatory Functions Branch
Joe Thomer

Re: Permit Application 071-OYB-2-006580

Dear Sir:

The original revision of the subject permit application was in response to concern expressed by Elsie Hulsizer of the City of Seattle, Department of Construction and Land Use. The original plan left a small tip of land sticking out into Slip 4 and she was concerned about erosion of that area.

I agreed to expand the dredging area to cut off that particular tip of land.

After the revision was made I realized that the newly added dredge area was in close proximity to an under water telephone cable which crosses the Duwamish River. To preclude any interference with the subject cable I elected to further revise the dredge area and provided you with the required drawings.

If you have any further questions, please call.

Very truly yours,

MARINE POWER & EQUIPMENT CO., INC.

Bruce H. Klein

RHK:sw

Seattle
Engineering Department
Arthur E. Maronek
Acting Director of Engineering
Charles Royer, Mayor

RE: 071-OYB-2-006580-R
MARINE POWER & EQUIPMENT CO.
23 SEPTEMBER 1980

NOVEMBER 20, 1980

Department of the Army
Seattle District
Corps of Engineers
P. O. Box C-3755
Seattle, Washington 98124

Gentlemen:

The City of Seattle has reviewed the subject Public Notice. Based upon comments which have been received from various City departments, we offer the following statement(s):

→ 1. We have no objection to the proposal as described in the subject Public Notice.

2. The proposal is exempt from the permit requirements of the Shoreline Management Act under the Seattle Shoreline Master Program.

→ 3. The proposal is consistent with the Seattle Shoreline Master Program and Substantial Development Permit No. SMA 80-45 was approved on NOVEMBER 4, 1980.

4. Applicant has applied for a Shorelines Substantial Development Permit. We reserve comments on the proposal until our review of the Shorelines Permit has been completed.

5. Applicant is hereby advised that a Shorelines Substantial Development Permit is required under the Shoreline Management Act of 1971. Application forms are available from the Seattle Department of Construction and Land Use, 503 Municipal Building, Seattle, Washington, 98104. We request that the Department of the Army permit for this proposal be withheld until a Substantial Development Permit is obtained.

6. Other:

Very truly yours,

ARTHUR E. MARONEK
Acting Director of Engineering

By [signature]
R. J. ANDERSON, P. E., Manager
Court & Right of Way Division

MC:rt

cc: Dept. of Construction and Land Use
State Dept. of Ecology

316A

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION X

1200 SIXTH AVENUE

SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF: MS 521

NOV 10 1980

District Engineer
Seattle District, C/E
ATTN: Chief, Reg. Func. Branch
P. O. Box C-3755
Seattle, Washington 98124

RE: 071-OYB-2-006580-R, Marine Power and Equipment Company, Inc., 6/23/80

Dear Sir:

We have completed our review of the above referenced permit application.

Chemical analyses indicate that the material to be dredged has relatively high concentrations of sulfides. However, our agency will have no objection to the issuance of this permit provided the proposed operations are subject to the following conditions:

1) Loads of dredged material to be dumped at 4 Mile Rock disposal site will be limited to a volume of 1,000 cubic yards,

2) In the event of adverse impacts on fisheries resources, due to the nature of the material being dredged, dredging operations will cease and modifications in the dredging procedures to alleviate the problem will be coordinated with our office.

These conditions are needed to maintain water quality and to protect the aquatic resources.

These conditions have been discussed with and agreed to by the applicant. If there are any questions concerning our review of this application please contact James Wood, of my staff, at (206) 442-1352 or FTS 399-1352.

Sincerely,

Ronald A. Lee

Ronald A. Lee, Chief
Dredge and Fill Permits Section

15 V8:21

cc: USFWS - Olympia
NMFS
WDNR - Attn. Rene Herrera
WDG - Attn. Bob Zeigler
WDE
Applicant

311 C

PLICATION FOR A DEPARTMENT OF THE A... PERMIT
For use of this form, see EP 1145-2-1

The Department of the Army permit program is authorized by Section 10 of the River and Harbor Act of 1899, Section 404 of P. L. 92-500 and Section 103 of P. L. 92-532. These laws require permits authorizing structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Information provided in ENG Form 4345 will be used in evaluating the application for a permit. Information in the application is made a matter of public record through issuance of a public notice. Disclosure of the information requested is voluntary; however, the data requested are necessary in order to communicate with the applicant and to evaluate the permit application. If necessary information is not provided, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and checklist) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

1. Application number (To be assigned by Corps)

071-OYB-2-006580

2. Date

1 MAY 1980
Day Mo. Yr.

3. For Corps use only.

4. Name and address of applicant.

Marine Power & Equipment Co.,Inc.
1441 N. Northlake Way
Seattle, Washington 98103

Telephone no. during business hours
A/C 206) 632-1441
A/C 206) 632-1447

5. Name, address and title of authorized agent.

Bruce H. Klein
Personnel Director
1441 N. Northlake Way
Seattle, Washington 98103

Telephone no. during business hours
A/C 206) 632-1441
A/C 206) 632-1447

6. Describe in detail the proposed activity, its purpose and intended use (private, public, commercial or other) including description of the type of structures, if any to be erected on fills, or pile or float-supported platforms, the type, composition and quantity of materials to be discharged or dumped and means of conveyance, and the source of discharge or fill material. If additional space is needed, use Block 14.

Dredge 85,000 cu. yards of sandy silt by clamshell and deposit at "Four Mile Rock" deep water disposal site by bottom dump barge. The purpose is to provide a safe depth for commercial marine use in Slip 4.

7. Names, addresses and telephone numbers of adjoining property owners, lessees, etc., whose property also adjoins the waterway.

1. Boeing Co. 7755 E. Marginal Way South Seattle, Washington 98108 (773-7790)
2. Layrite Concrete Products Co. 7265 E. Marginal Way S. Seattle,Wa 98108 (762-8681)
3. Puget Sound Truck Lines 3720 Airport Way South Seattle, Wa 98134 (623-1600)

8. Location where proposed activity exists or will occur.

Address:
8th Ave. South and South Fontanelle St.
Street, road or other descriptive location

Seattle
In or near city or town

King | Wash. | 98108
County | State | Zip Code

Tax Assessors Description: (If known)

Map No. ____ Subdiv. No. ____ Lot No. ____

Sec. ____ Twp. ____ Rge. ____

9. Name of waterway at location of the activity.

Duwamish River

Date activity is proposed to commence. As soon as permit is issued

Date activity is expected to be completed Within 5 weeks after start of project

Is any portion of the activity for which authorization is sought now complete? ☐ YES ☒ XX NO

If answer is "Yes" give reasons in the remark section. Month and year the activity was completed ________________. Indicate the existing work on the drawings.

List all approvals or certifications required by other federal, interstate, state or local agencies for any structures, construction, discharges, deposits or other activities described in this application.

Issuing Agency	Type Approval	Identification No.	Date of Application	Date of Approval
City of Seattle	Shoreline Permit			

Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein?

☐ Yes ☒ xxNo (If "Yes" explain in remarks)

Remarks or additional information.

Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

Bruce H. Klein

Signature of Applicant or Authorized Agent

Bruce H. Klein

The application must be signed by the applicant; however, it may be signed by a duly authorized agent (named in Item 5) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request, supplemental information in support of the application.

18 U. S. C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of The United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisioned not more than five years, or both. Do not send a permit processing fee with this application. The appropriate fee will be assessed when a pe[illegible] is issued.

INSPECTION RECORD

FOR

PERMITTED WORK IN NAVIGABLE WATERS
NORTH PACIFIC DIVISION, CORPS OF ENGINEERS

District Seattle

12:30 pm

Permit No. 071-OYB-2-006-596

Date of Inspection 10 April 8[illegible]

Permittee Marine Power & Equipment Co. Inc.

Inspector LARSON, FENSKE

Waterway Duwamish River

Type of Work Dredge

STATUS

Work Completed X Yes ___ No ___ Not Sure

Estimated Percent Complete 100 % ___ Unknown

Work in Progress ___ Yes ✓ No

COMPLIANCE

Completed Entire Scope of Permitted Work X Yes ___ Apparently ___ No

Standard Conditions: ✓ Yes ___ Apparently ___ No ___ Doubtful

Special Conditions: \ Yes ___ Apparently ___ No ___ Doubtful

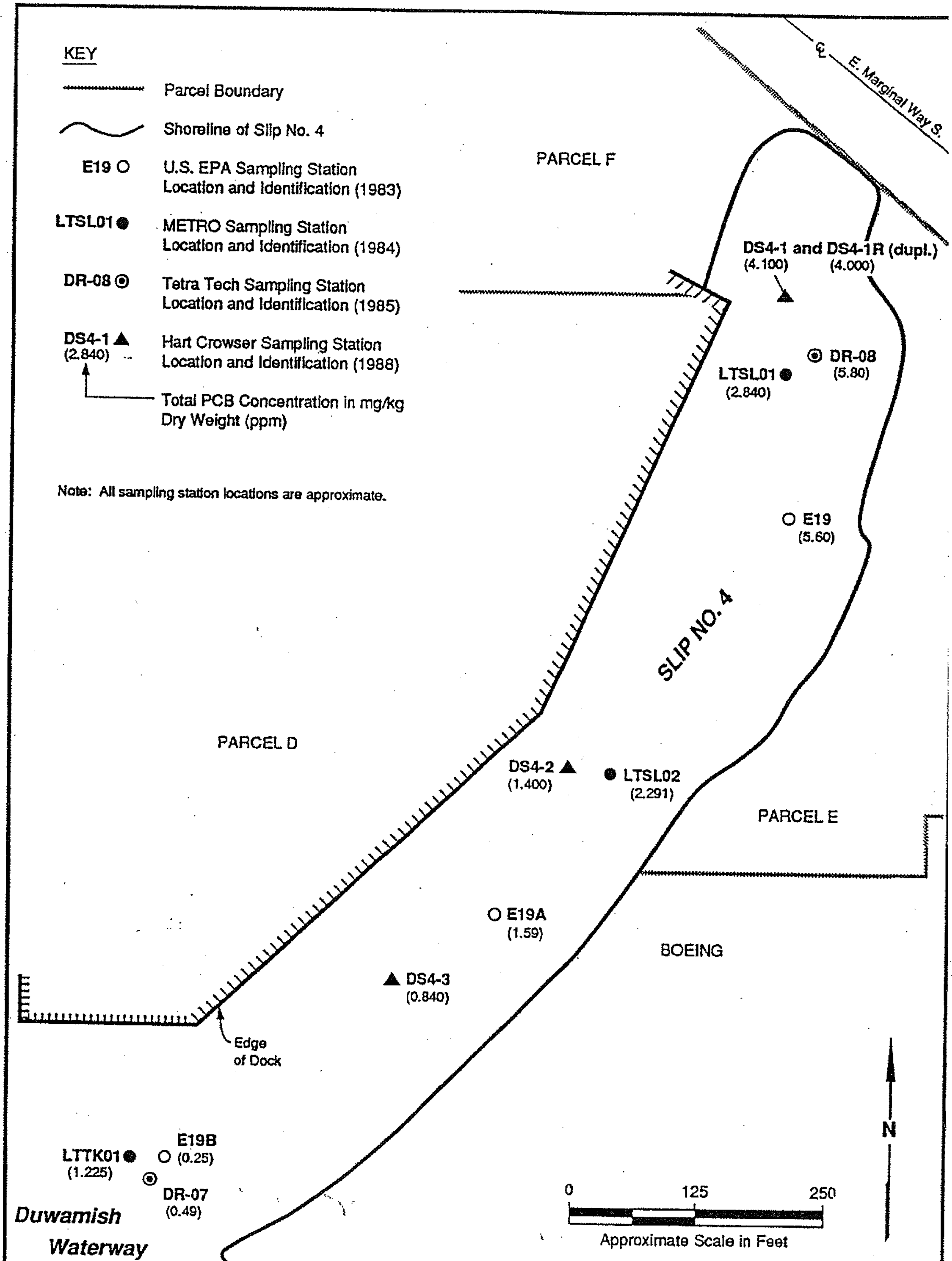
Permit Dwg: \ Yes ___ Apparently ___ No

Comments: WATER Depth WSL 20 ± w GAGE READING +5.8 = −15.2 ← ELEV OF BOTTOM

NPD Form 288(Rev)
May 77

610
607*

Figures of Sediment Sample Locations and Results

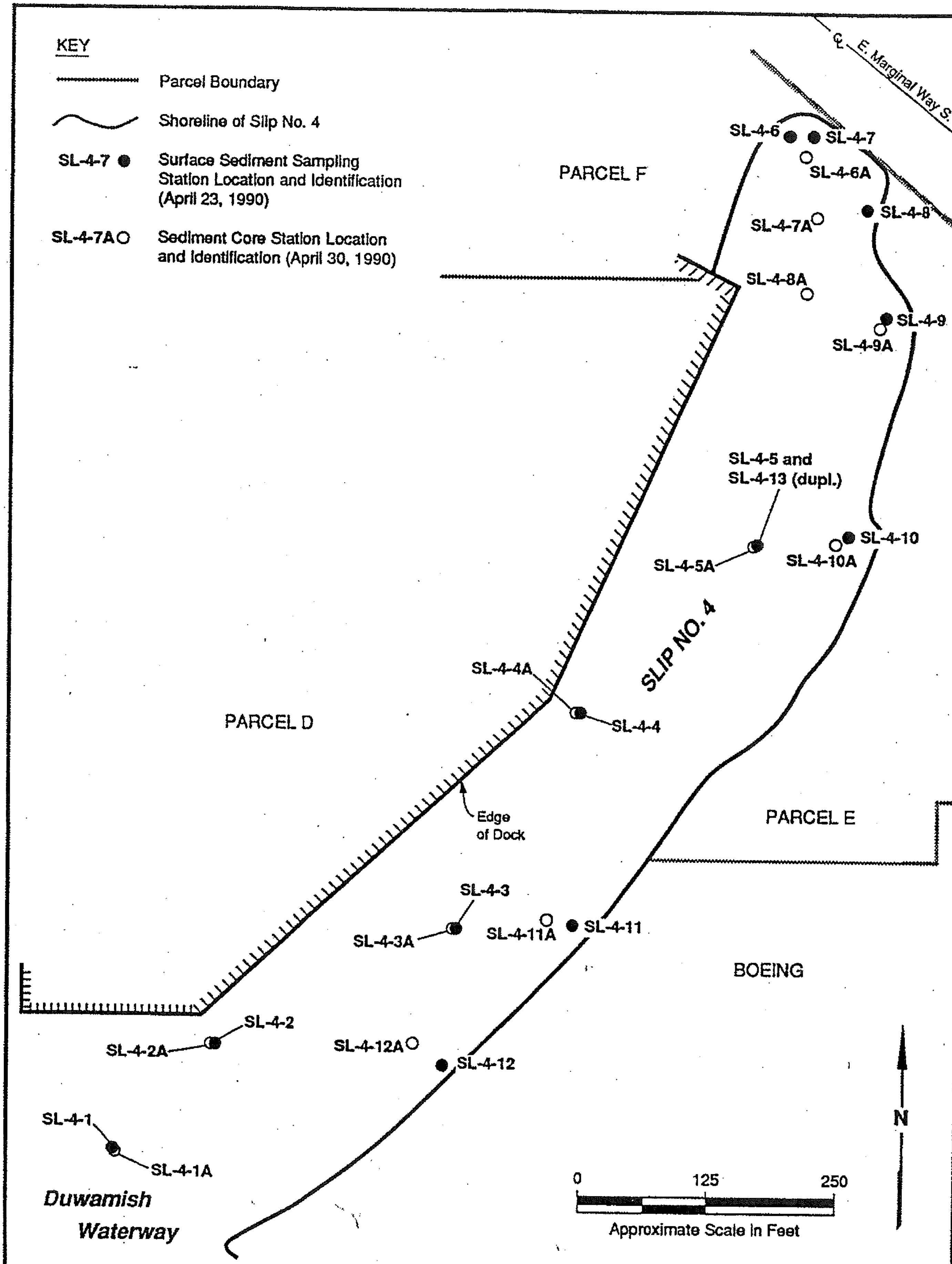


LANDAU ASSOCIATES, INC.

Concentrations of Total PCBs in Surface Sediments at Historical Stations in Slip No. 4

Figure 9-3

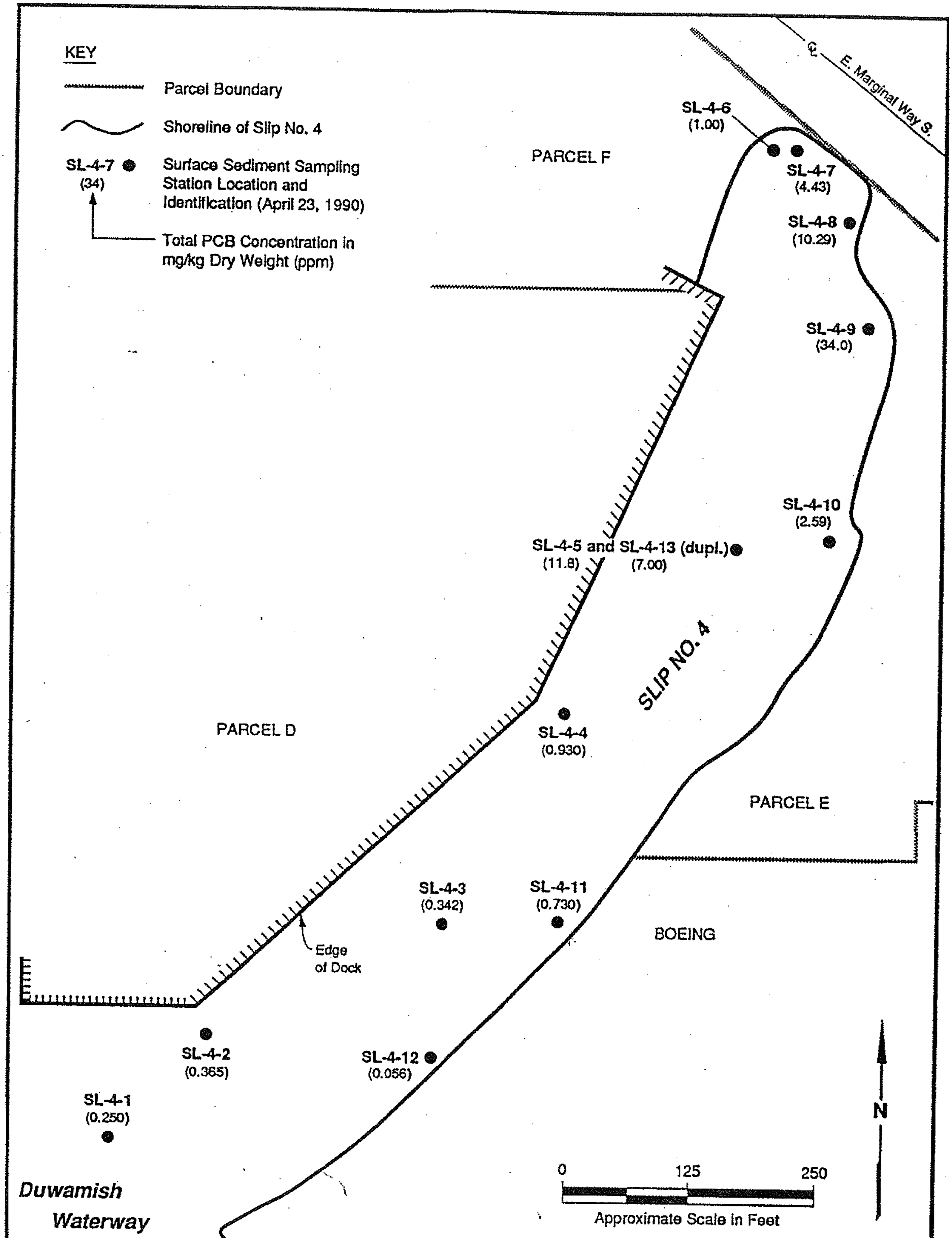
25-52.10 Boeing/First Interstate/Environmental Site Assessment/Final Report 6/8/90



25-52.10 Boeing/First Interstate/Environmental Site Assessment/Final Report 6/8/90

LANDAU ASSOCIATES, INC.	Map Showing Slip No. 4 Shoreline and Locations of Surface Sediment and Sediment Core Stations

Figure 9-1

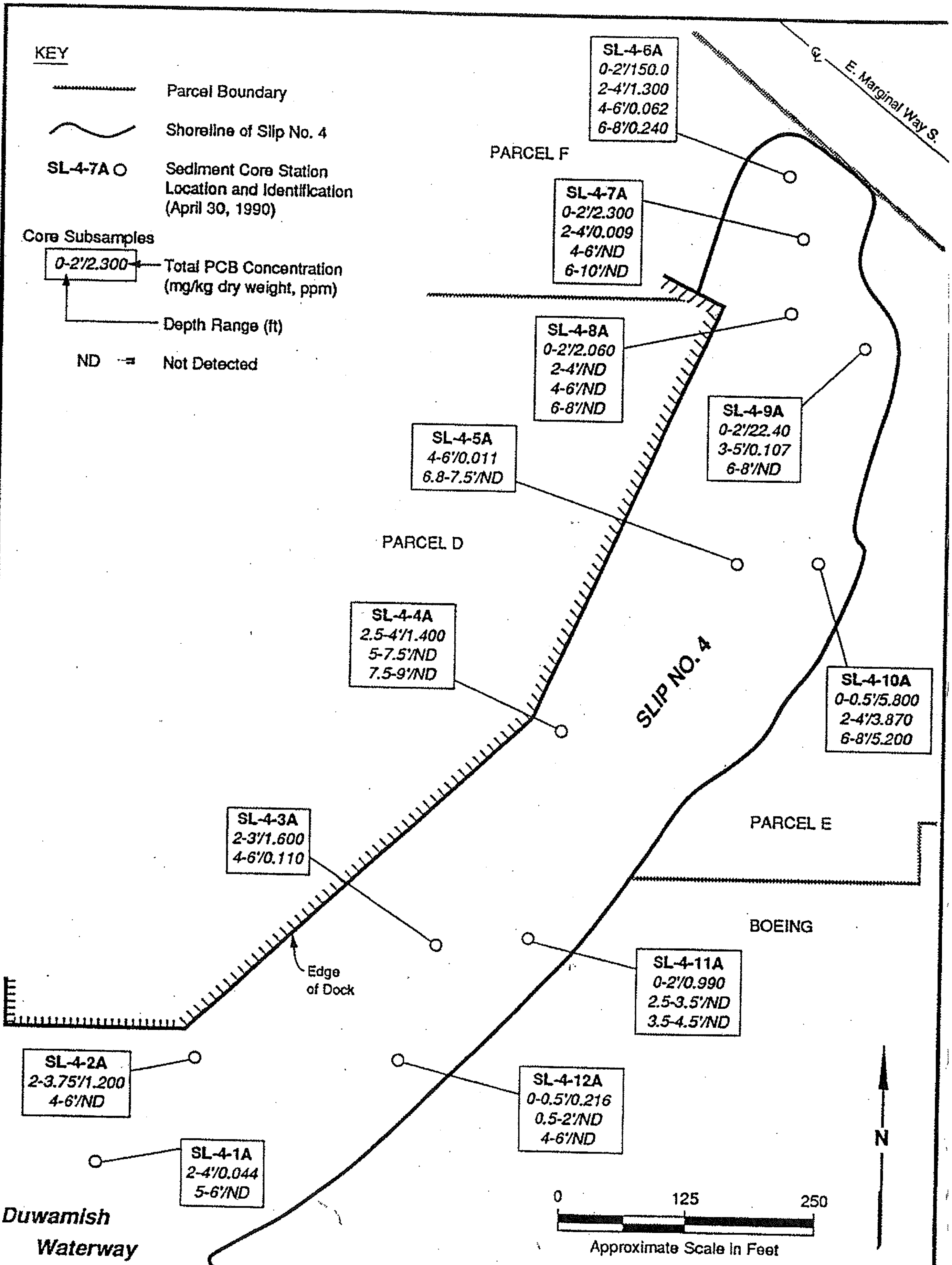


LANDAU ASSOCIATES, INC.

Surface Sediment Stations and Concentrations of Total PCBs in Slip No. 4 Surface Sediments

25-52.10 Boeing/First Interstate/Environmental Site Assessment/Final Report 6/8/90

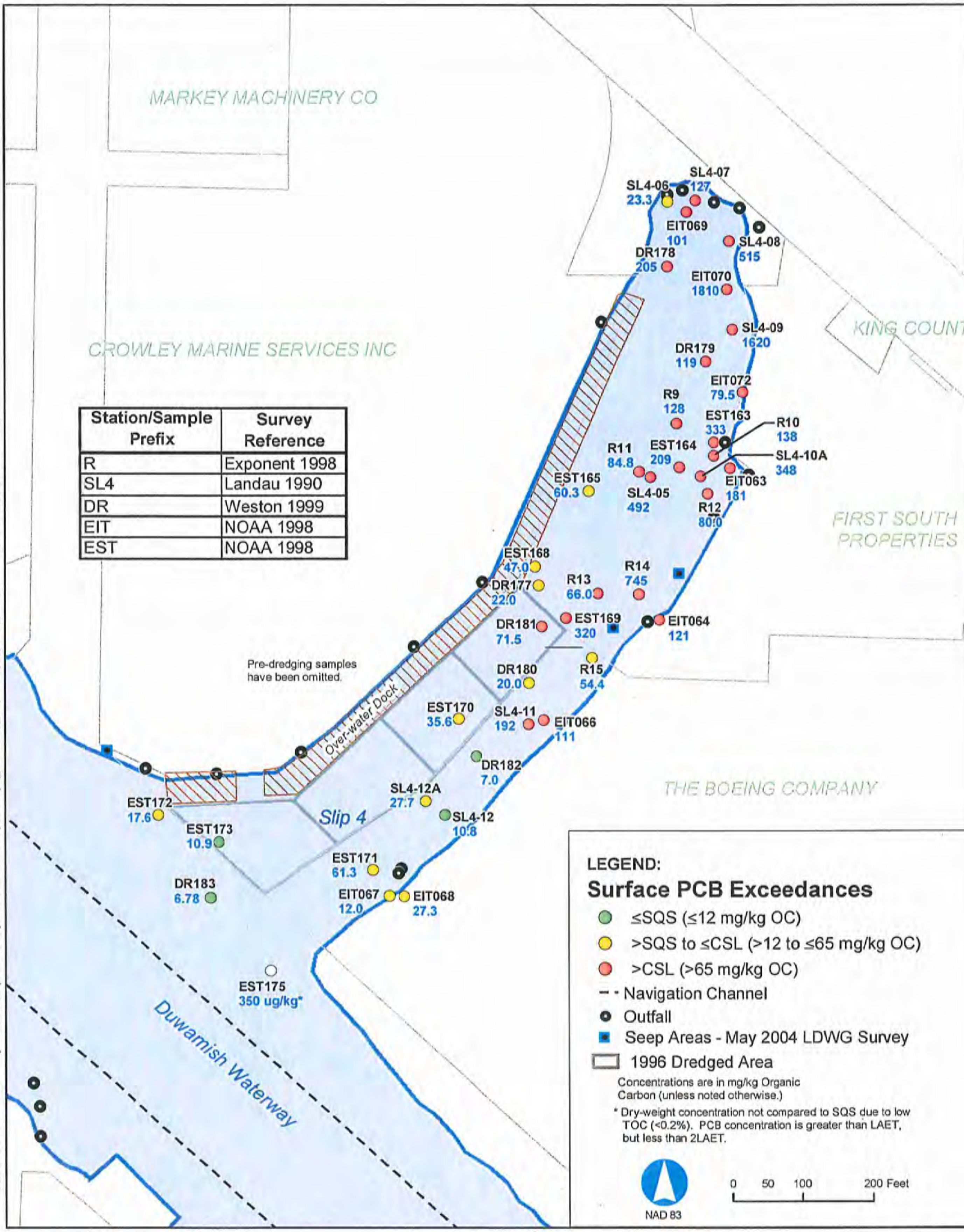
Figure 9-2



LANDAU ASSOCIATES, INC.	Sediment Core Stations and Concentrations of Total PCBs in Core Subsamples in Slip No. 4

Figure 9-4

25-62.10 Boeing/First Interstate/Environmental Site Assessment/Final Report 6/8/90



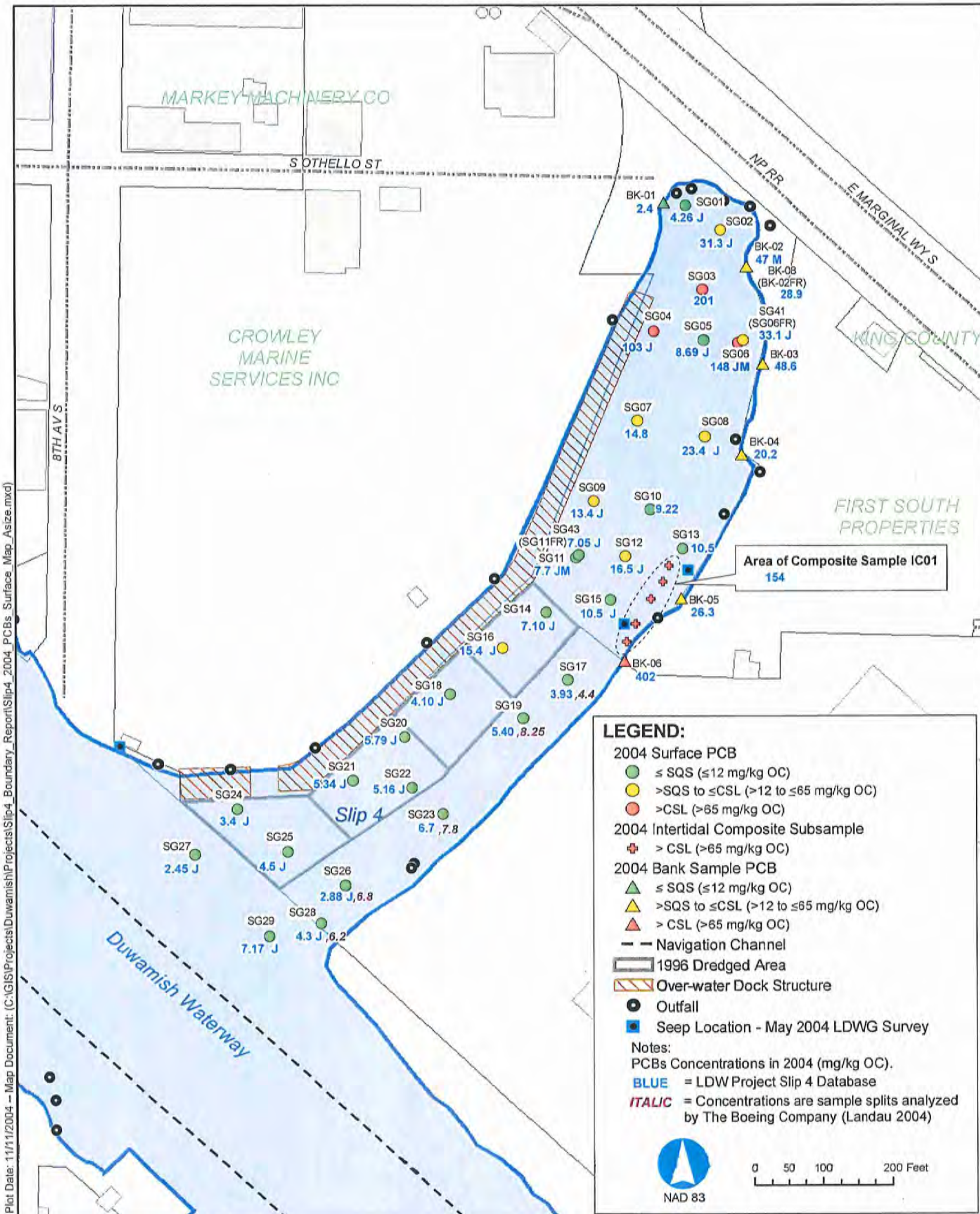
Station/Sample Prefix	Survey Reference
R	Exponent 1998
SL4	Landau 1990
DR	Weston 1999
EIT	NOAA 1998
EST	NOAA 1998

Plot Date: 01/03/2005 – Map Document: (C:\GIS\Projects\Duwamish\Projects\Slip4_2004_PCB_Boundary_Report\Slip4_2004_PCB_Historic_Surface_Map_Asize.mxd)

integral consulting inc.

Map Feature Sources:
King County GIS, Seattle Public Utilities, USACE, Ecology, Windward Environmental, David Evans, Inc., and others.
Sediment Chemistry:
Lower Duwamish Project Database and 2004 Slip 4 Survey PCB analysis results.

Figure 2.
PCB Concentrations in Surface Sediments Collected in 1990-1998.

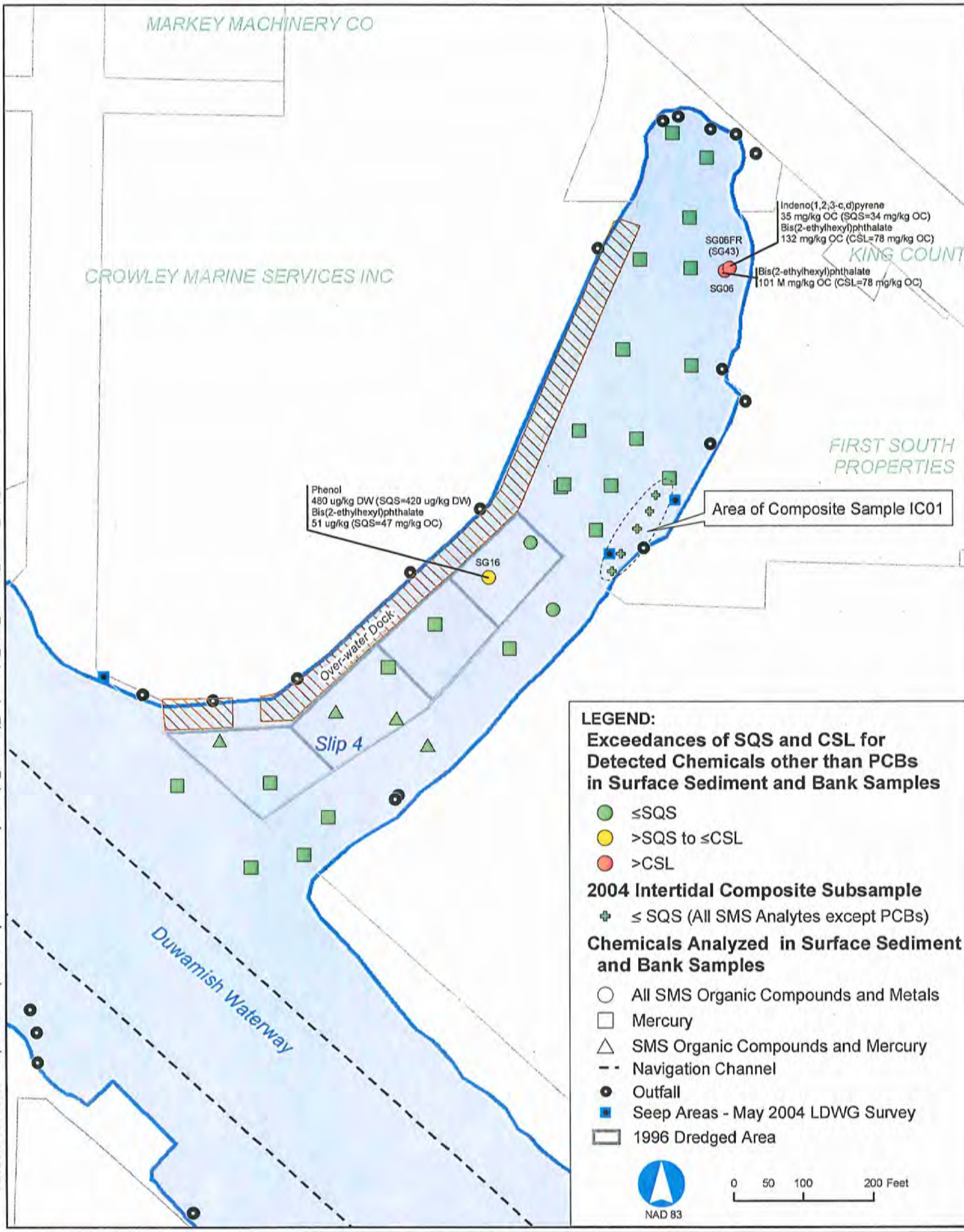


integral consulting inc.

Map Feature Sources:
King County GIS, Seattle Public Utilities, USACE, Ecology, Windward Environmental, David Evans, Inc., and others.
Station locations: Lower Duwamish Project Database and 2004 Slip 4 FSP Navigation Table.

Qualifiers:
J=Estimated
M=Mean of field duplicate (i.e., split)
FR=Field replicate

Figure 3.
PCB Concentrations in Surface Sediment and Bank Samples Collected in 2004



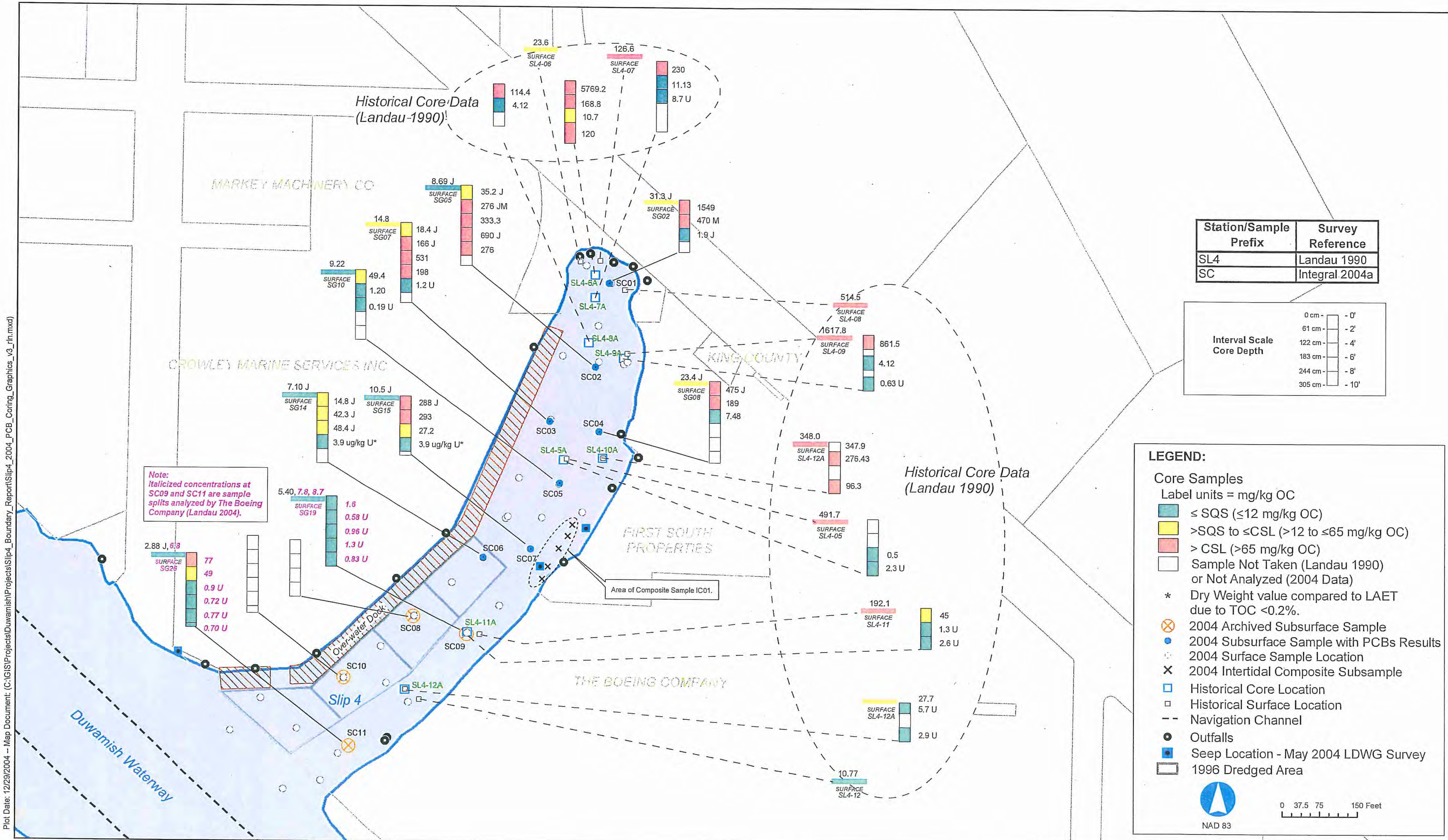
Plot Date: 01/03/2005 – Map Document: (C:\GIS\Projects\Duwamish\Projects\Slip4_Boundary_Report\Slip4_2004_Non-PCB_Surface_Map_Asize2.mxd)

integral consulting inc.

Map Feature Sources:
King County GIS, Seattle Public Utilities, USACE, Ecology, Windward Environmental, David Evans, Inc., and others.
Sediment Chemistry:
Lower Duwamish Project Database and 2004 Slip 4 Survey PCB analysis results.

M=Mean of Field Duplicate (i.e., split)
FR=Field Replicate

Figure 4.
Exceedances of SQS and CSL for Detected Chemicals other than PCBs in Surface Sediment and Bank Samples Collected in 2004



Plot Date: 12/29/2004 – Map Document: (C:\GIS\Projects\Duwamish\Projects\Slip4_Boundary_Report\Slip4_2004_PCB_Coring_Graphics_v3_rh.mxd)

integral consulting inc.

Map Feature Sources:
King County GIS, Seattle Public Utilities, USACE, Ecology, Windward Environmental, David Evans, Inc., and others.
Sediment Chemistry:
Lower Duwamish Project Database and 2004 Slip 4 Survey
PCB analysis results, The Boeing Company.

U=Undetected
J=Estimated
M=Mean of field duplicates (i.e., split)

Figure 5.
Historical and 2004 PCB Concentrations in Subsurface Sediments in Slip 4.

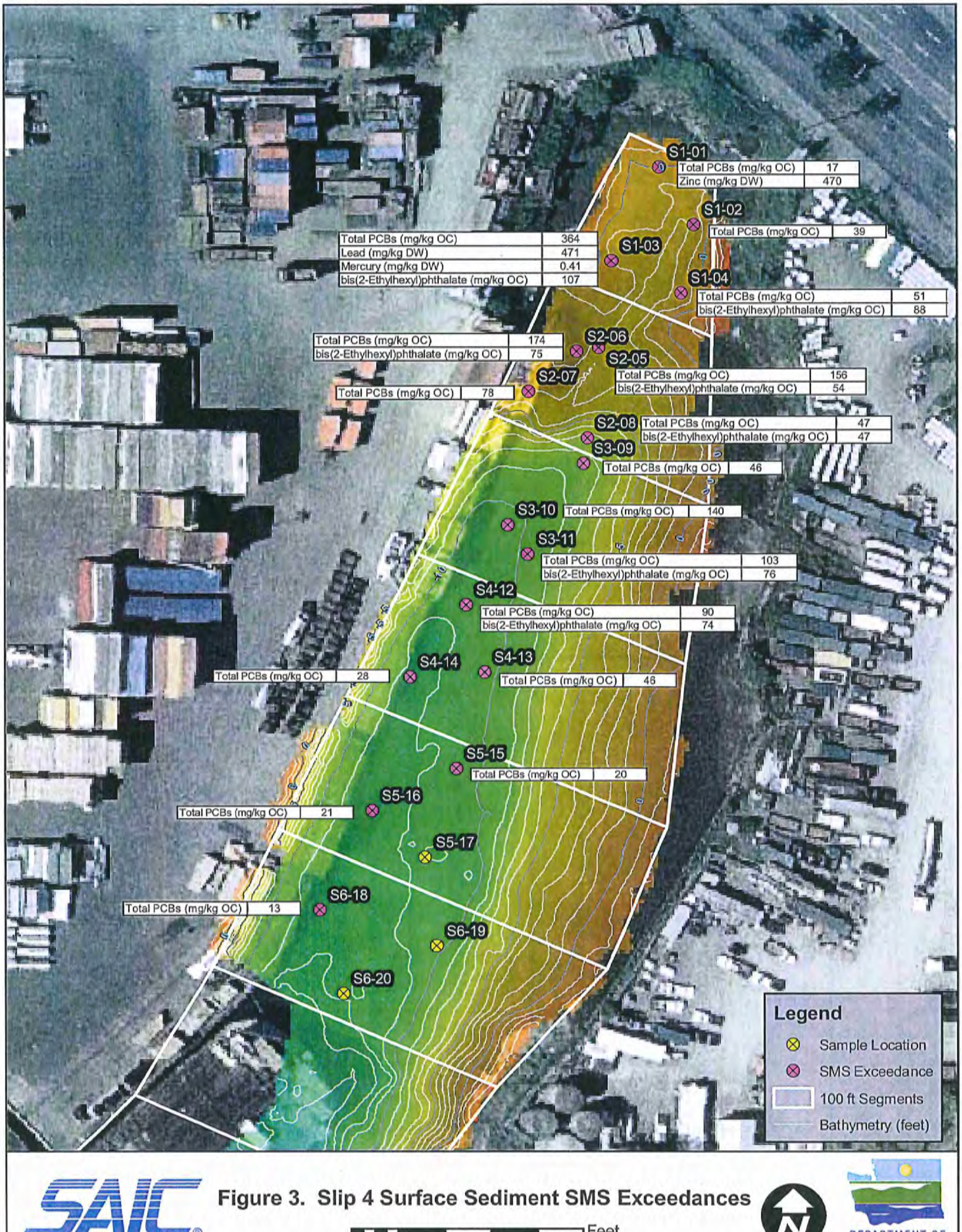


Figure 3. Slip 4 Surface Sediment SMS Exceedances

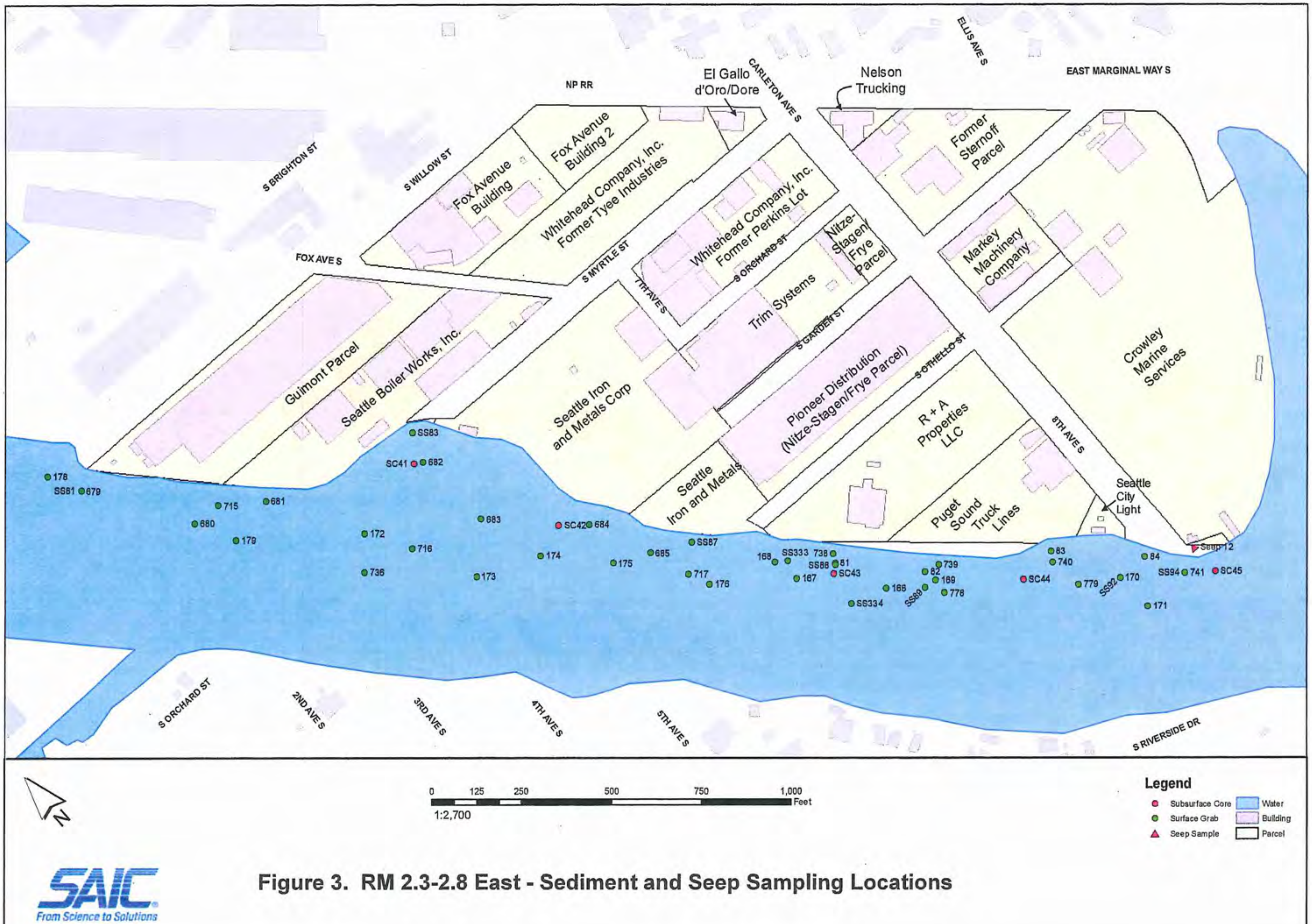


Figure 3. RM 2.3-2.8 East - Sediment and Seep Sampling Locations

Appendix D

Final Quality Assurance Project Plan

Quality Assurance Project Plan
Remedial Investigation

October 2012

Crowley Marine Services 8th Avenue S. Site
8th Avenue Terminals, Inc.
7400 8th Avenue South
Seattle, Washington 98108

Table of Contents

List of Tables

Section 1: Introduction

The purpose of this Quality Assurance Project Plan (QAPP) is to identify the quality assurance and quality control (QA/QC) protocols necessary to achieve the project-specific data quality objectives for sample collection and analysis during the remedial investigation at the 8th Avenue Terminals, Inc. site. The objectives for the investigation activities as well as the background, project description, project organization and schedule, and sampling procedures are described in the Final Remedial Investigation/Feasibility Study Work Plan (Work Plan).

Section 2: Quality Objectives

The data quality objectives (DQOs) for this project are to describe and implement field and laboratory procedures that ensure: 1) data will be representative of actual environmental conditions, and 2) data are of known and acceptable quality. Measurements will be made to yield accurate and precise results representative of the media and conditions measured. Data will be calculated and reported in units consistent with those used by regulatory agencies to allow for comparability of data.

Accuracy, precision, completeness, representativeness, comparability, and sensitivity are terms used to describe the quality of analytical data. Routine procedures for measuring precision and accuracy include use of quality control samples (i.e., replicate analyses, check or laboratory control samples, matrix spikes, and procedural blanks). These indictors of data quality are discussed below.

2.1 Precision

Precision is an appraisal of the reproducibility of a set of measurements. Precision can be better defined as the variability of a group of measurements compared to their average value. Variability for environmental monitoring programs contains both an analytical component and a field component.

Analytical precision will be evaluated by the analyses of matrix spike duplicate and laboratory duplicate samples, which can be mathematically expressed as the relative percent difference (RPD) between duplicate sample analyses. RPD is calculated using the following equation:

$$RPD = \frac{C_1 - C_2}{\overline{C}} \; x \; 100$$

where:

C1 = First concentration value or recovery value measured for a variable

C2 = Second concentration value or recovery value measured for a variable

The frequency of the performance of matrix spike duplicate and laboratory duplicate samples, where applicable, is usually one per batch (which typically consists of up to 20 samples) for each sample matrix received.

Field duplicate samples will be submitted blind to the laboratory as a means to determine field variability. Frequency of field duplicate samples is discussed in Section 4.2.

Precision quantities will be calculated for analyses with method reporting limits of the same order of magnitude and with detected concentrations greater than or equal to five times the method reporting limits. In instances where no criteria have been established (e.g., field duplicates), relative percent difference project goals will be 50 percent for well-homogenized soil samples and 30 percent for water samples.

2.2 Bias and Accuracy

Bias is the systematic or persistent distortion of a measurement process that causes error in one direction. Accuracy refers to how close a measurement is to the true value. Bias and accuracy will be evaluated by the analysis of matrix spike samples and laboratory control samples and can be mathematically expressed as the percent recovery of an analyte that has been used to fortify a field sample or clean laboratory matrix sample at a known concentration prior to analysis. The percent recovery (R) for a matrix spike sample is calculated as follows:

$$R = \frac{(\mathrm{SSR - SR})}{\mathrm{SA}} * 100$$

Where:

SSR = Spiked sample result

SR = Sample result

SA = Spike added.

The following calculation is used to determine R for a laboratory control sample or reference material:

$$R = \frac{RM}{RC} * 100$$

Where:

RM = Reference material result

RC = Known reference concentration

Results of matrix spike and laboratory control samples will be evaluated to the laboratory's control limits. Control limits are defined as the mean recovery, plus or minus three standard deviations, of the 20 data points, with the warning limits set as the mean, plus or minus two standard deviations. The laboratory will review the QC samples and surrogate standard recoveries for each analysis to ensure that internal QC data lie within the limits of acceptability. The laboratory will investigate any suspect trends and take appropriate corrective actions

Field blank samples and method blank samples will also be used to evaluate bias of the data. Results for field and method blanks can reflect systematic bias that results from contamination of samples during collection or analysis. Analytes detected in field or method blank samples will be evaluated as potential indicators of bias.

2.3 Representativeness

Representativeness concerns the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Where appropriate, sampling locations will be selected on both systematic and biased (judgmental) sampling bases in an attempt to spatially cover the study area. Sampling locations and methods for selection of those sampling locations are presented in the Work Plan.

2.4 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system. Completeness will be measured for each set of data received by dividing the number of valid measurements actually obtained by the number of valid measurements that were planned. Although 100 percent is the goal for completeness, 90 percent is the minimum acceptable level.

2.5 Comparability

Comparability is a qualitative QA criterion that expresses the confidence in the ability to compare one data set with another. Comparability among data sets is achieved through the use of similar sampling procedures and analytical methods. Sampling procedures will be performed as specified in the Work Plan. Analytical procedures will be conducted according to the methods discussed in this QAPP.

2.6 Sensitivity

Sensitivity is the capability of a method or instrument to discriminate between measurement responses representing different levels of the variable of interest. The method detection limit (MDL) is defined as the statistically calculated minimum amount that can be measured with 99 percent confidence that the reported value is greater than zero. MDLs are specified in the individual methods and are developed by the laboratory for each analyte of interest representing the aqueous and solid matrices within the capability of an analytical method.

The method reporting limit (MRL) or practical quantitation limit (PQL) is the lowest value to which the laboratory will report an unqualified quantitative result for an analyte. The PQL is always greater than the statistically determined MDL. The PQLs required for this project are such that data can be compared to the lowest possible applicable, relevant, and appropriate requirements (ARARs) suitable for the site. PQLs are discussed in greater detail in Section 3.

Section 3: Analytical Procedures

The analytical laboratory(s) selected to analyze samples for this project will be certified by Washington State Department of Ecology (Ecology) for all the analytical methods required for the project. The analytical methods for the analyses, applicable sample containers, and holding times are summarized in Table 1. Target PQLs are summarized in Table 2.

The potentially liable parties (PLPs) shall submit a summary of analytical methods, PQLs and MDLs from their selected laboratories to Ecology for review and approval prior to the start of field sampling activities.

Analysis of the soil, sediment, and/or catch basin solids samples will be performed using the following methods:

- Method NWTPH-Dx: Diesel-range organics (DRO) and heavy oil-range organics (HO) by GC/FID [Ecology 1997]. A silica gel cleanup step will be used on all soil/solids samples.
- Method NWTPH-Gx: Gasoline-range organics (GRO) by GC/FID (Ecology 1997).
- Method 8270D: Semivolatile organic compounds (SVOCs) including polynuclear aromatic hydrocarbons (PAHs) by gas chromatography/mass spectrometry (GC/MS) with select ion monitoring (EPA 2007).
- Method 8082A: Polychlorinated biphenyls (PCBs) by GC/ECD [U.S. Environmental Protection Agency (EPA) 2007].
- Method 6020: Antimony, arsenic, beryllium, barium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc by ICP/MS (EPA 2007).
- Method 7195: Hexavalent chromium by coprecipitation (EPA 2007).
- Method 7471: Mercury by cold vapor (EPA 2007).
- Method 8260C: Volatile organic compounds (VOCs) by GC/MS (EPA 2007).
- Method 8290: Dioxins and furans by high-resolution (HR) GC/MS (EPA 2007).
- Method 9060: Total organic carbon (TOC) by carbonaceous analyzer (EPA 2007).
- ASTM D-422: Grain size by sieve and hydrometer (ASTM 2007).

Analysis of the groundwater and/or storm water samples will be performed using the following methods:

- Method 8270D: SVOCs including PAHs by gas chromatography/mass spectrometry (GC/MS) with select ion monitoring (EPA 2007).
- Method NWTPH-Dx: DRO and HO by GC/FID (Ecology, 1997). A silica gel cleanup step will be used on all water samples.

- Method NWTPH-Gx: GRO by GC/FID (Ecology 1997).
- Method 8260C: VOCs by GC/MS (EPA 20076).
- Method 8082A: PCBs by GC/ECD (EPA 2007).
- Method 200.8: Total and dissolved antimony, arsenic, beryllium, barium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc by ICP/MS (EPA Office of Water 1999).
- Method 1631E: Mercury by cold vapor atomic fluorescence (EPA 2002).
- Method 7196A: Hexavalent chromium by colorimetric method (EPA 2007).
- Method SM2540C/D: Total dissolved solids (TDS) and total suspended solids (TSS) by gravimetric method (American Public Health Association 1998).
- Method SM4500-Cl E: Chloride by auto-ferricyanide method (American Public Health Association 1998).
- Method 9060M: TOC by carbonaceous analyzer (EPA 2007).
- Method 415.3: Dissolved organic carbon (DOC) by TOC instrument system (EPA Office of Water 2009).

Any special analytical method employed will be determined with laboratory concurrence prior to beginning sample analysis. In addition, field parameters will be measured during groundwater sampling as outlined in the Work Plan.

Section 4: Quality Control

QC samples will be assessed for both field and laboratory operations to evaluate overall precision/bias and accuracy throughout the project. Field QC samples will include field duplicate and blank samples. The types and frequency of QC samples are discussed below.

4.1 Laboratory Quality Control

Laboratory QC parameters, criteria, and frequency will be performed in accordance with the analytical methods referenced in Section 3. Comparison of QC sample results against established criteria is performed during the data validation process as described in Section 7.3. Laboratory QC data may include:

- Laboratory control and laboratory duplicate samples
- Matrix spikes and matrix spike duplicate samples
- Laboratory duplicates
- Surrogate standards
- Internal standards
- Method and instrument blanks
- Post-digestion spikes.

The frequency of analysis for laboratory control samples, matrix spike samples, matrix spike duplicate samples, laboratory duplicate samples, and method blank samples will be one for every 20 samples or one per batch, where applicable, or as specified in the analytical methods. Surrogate spikes and internal standards will be added to samples as required by the methods. Laboratory control limits and performance-based criteria presented in the methods will be used to establish the acceptability of the data or the need for re-analysis of a sample. Analytical data will be evaluated by the laboratory based on the following criteria, where applicable:

- Performance of analytical method tests
  - Holding times
  - Matrix spike and matrix spike duplicate results
  - Calibration data using check compound and system performance check with compound analysis results
  - Laboratory blank sample analysis results
  - Interference check sample analysis results
  - Laboratory check sample analysis results

- Comparison of calibration and sample analyses
- Linearity of response and linear range.

- Analytical results of internal standards and the calculation of percent recoveries
- Reporting limits obtained
- Accuracy and precision of matrix spike/matrix spike duplicate analysis
- Comparison of the percentage of missing or undetected substances among duplicate samples.

During data validation, analytical results will be evaluated against the performance criteria noted in this QAPP and the individual analytical methods.

4.2 Field Quality Control Samples

Field duplicate samples are designed to monitor overall sampling and analytical precision. In general, duplicate samples will be collected at a frequency of approximately one duplicate sample per 20 samples or one duplicate sample per batch of samples if less than 20 samples are collected.

Soil and/or sediment field duplicate samples will consist of collecting a sample, homogenizing the sample, and splitting the sample into two equal aliquots. If the sample is to be analyzed for volatile organics the sample will not be homogenized before collection of primary or duplicate sample.

For duplicate water samples, sample containers will be alternately filled. The locations for duplicate sample collection will be determined in the field. Duplicate samples will be treated as separate samples from the originals (assigned unique sample numbers), and not identified to the laboratory as duplicate samples. Field duplicate samples will be documented on the daily field report, in the field logbook, or other appropriate field form.

Trip blank samples will also be collected. Volatile organic samples are susceptible to contamination by diffusion of organic contaminants through the sample vials. Therefore, trip blank samples will be submitted to monitor for possible sampling contamination during shipment if VOC analyses are performed. Trip blank samples will be prepared by the analytical laboratory by filling volatile organic analysis (VOA) vials with organic-free water and shipping the blank samples with the clean sample containers. Trip blank samples will accompany the sample containers through collection and shipment to the laboratory and will be stored with the samples.

Section 5: Data Management

5.1 Documentation and Records

Records will be maintained documenting activities performed and data generated during implementation of the Work Plan. The types of documents that will be generated during implementation of the Work Plan are discussed below.

5.1.1 Field Documentation

Field personnel will document their field activities on either a daily field log or in a field logbook and complete other field forms applicable to the field activities being performed. The daily field logs and field logbooks will document information regarding who was present during field activities (field personnel, subcontractors, visitors), weather conditions, work conducted that day, problems encountered and corrective actions, if any, etc. Field logs will be filed in the project files.

Field logbooks and other types of field forms (e.g., groundwater purge and sample forms, boring log/well construction logs, test pit excavation logs) will be used to record data obtained during various field activities. The individual field personnel will be responsible for maintaining these forms. Field daily logs, field logbooks, and other field forms will then be archived in the project files.

5.1.2 Laboratory Documentation

Records related to sample analysis will be documented by the laboratory. The laboratory will be required to submit data that are supported by sufficient backup information and QC results to enable reviewers to determine the quality of the data. The laboratory will submit the data in electronic and paper format. The paper format (i.e., hard copy) data packages from the laboratory will consist of the following information, where applicable:

- A cover letter for each sample batch will include a summary of any QC, sample, shipment, or analytical problems, and will document internal decisions. Problems will be outlined and final solutions documented. A copy of the signed chain-of-custody form for each batch of samples will be included in the deliverable.
- Sample concentrations will be reported on standard data sheets in proper units and to the appropriate number of significant figures. For undetected values, the lower limit of detection for each compound will be reported separately for each sample. Dates of sample extraction or preparation and analysis will be included.
- Method blank results.
- Surrogate percent recoveries.
- Laboratory duplicate results, where applicable.
- Laboratory control sample results, where applicable, with percent recoveries and spiking concentrations.

- Matrix spike/matrix spike duplicate percent recoveries, with spiking concentrations and calculated relative percent differences.

- A list of the detection limits calculated for laboratory instruments for all analytes.

- Laboratory data qualifier codes appended to analyte concentrations, as appropriate, and a summary of code definitions.

Sample holding times will be calculated by comparing the date of sample collection (shown on the chain-of-custody form) with the date of sample extraction/analysis. Analytical laboratory deliverables will be validated.

The analytical laboratory will routinely archive raw laboratory data, including initial and continuing calibration data, chromatograms, and quantitation reports for at least 5 years.

5.2 Instrument/Equipment Calibration and Frequency

Field instruments will be operated, calibrated, and maintained by qualified personnel, according to manufacturer's guidelines and recommendations. At a minimum, instruments will be calibrated before use each day or more frequently as necessary. Calibration records will be recorded in the daily field log, field logbook, or other appropriate forms.

Laboratory instruments will be calibrated and maintained in accordance with the requirements of analytical methods and normal operating standards associated with good laboratory practices. Calibration requirements are specified in each laboratory's QA manual. Calibration records are documented in laboratory logbooks.

5.3 Instrument/Equipment Testing, Inspection, and Maintenance

Sampling equipment that will be used during field activities is discussed in the Work Plan. Preventive maintenance of equipment is essential if project resources are to provide accurate results and are to be used cost-effectively. Preventive maintenance will take two forms: 1) implementation of a schedule of preventive maintenance activities to reduce downtime and maintain accuracy of measurement systems and 2) availability of critical spare parts and backup systems and equipment.

Qualified operators will perform routine inspections and maintenance for field instruments in accordance with manufacturers' recommendations. Field equipment will be inspected prior to the start of sampling activities. Maintenance activities, if performed, will be documented in the daily field log or field logbook. As most types of field equipment that will be used for this project are standard (i.e., used frequently in environmental sampling), replacement parts are readily available. The field personnel will be responsible for maintaining the field equipment.

The laboratory's QA manual discusses preventive maintenance for laboratory equipment and instruments. Maintenance and inspection records are documented in laboratory logbooks.

Section 6: Audits and Reports

6.1 Performance Evaluation Audits

Performance evaluation audits are an independent means of establishing the quality of measurement data by analysis of samples provided specifically for the evaluation.

During a performance evaluation audit, the performance of the laboratory technicians and the instrumentation or analytical systems on which they work are evaluated. A performance evaluation audit is accomplished by providing performance evaluation samples containing specific pollutants (in appropriate matrices) whose identities and/or concentrations are unknown to the technician. Laboratories participate in both internal and external performance testing to examine the overall laboratory performance as well as to qualify for various federal, state, and independent certification programs.

The laboratory will be responsible for implementing corrective action for analytical procedures. Corrective action procedures are described in the individual methods or are described in the laboratory's QA manual. If QC data are unacceptable, the cause will be determined and corrected. Corrective actions that affect the integrity of the project analytical data will require re-analysis of the affected sample or qualifying of these data in the final data report. If corrective actions are warranted by a laboratory, the laboratory will document and forward the corrective action(s).

6.2 System and Technical Laboratory Audits

System and technical audits are performed by the laboratory QA Manager according to a predetermined schedule and when requested by laboratory management. An independent audit may be conducted should corrective actions be needed during implementation of the Work Plan (e.g., a laboratory repeatedly does not meet QC criteria, or overall performance of the laboratory is questionable). This audit will be project-specific and will focus only on the performance of the laboratory for this project. A laboratory audit report will be prepared, if necessary.

6.3 Field Operations

A readiness review will be conducted prior to initiation of each field task requiring sampling to verify that the necessary preparations have been made for efficient and effective completion of the task-related field activities. The Project Manager will verify that the necessary field equipment has been assembled for the field activity and that the applicable subcontractors, if necessary, have been scheduled. Any deficiencies noted during this readiness review will be corrected prior to initiation of field activities.

Field personnel are required to maintain continual communication with project members during the duration of field activities. Thereby, should issues arise during field activities, corrective actions can be implemented.

Section 7: Data Tracking, Reduction, and Validation

7.1 Sample Data Tracking System

During field activities, field personnel will be responsible for overseeing field measurements and data recording. Information on field forms will be verified that the following conditions have been met:

- Samples are properly documented in daily field logs, field logbooks and/or other field forms appropriate to the field activities being conducted.
- Chain-of-custody forms are complete and accurate.
- Samples collected are properly documented and field forms are completed.
- Samples and analyses specified in the Work Plan have been collected.
- Correct number of field QC samples was collected.

In addition, upon receipt of samples at the laboratory, it will be verified that samples were received at the appropriate temperature and in good condition (i.e., no excessive headspace, broken sample containers, etc.). If a sample does not arrive at the laboratory at the appropriate temperature or the integrity of the sample is in question, the potential implication of the anomaly will be evaluated and a course of action will be determined.

7.2 Data Reduction

Both field and laboratory data will be collected during implementation of the Work Plan. Data obtained during sample collection will be manually entered onto daily field logs, field logs book, and other field forms.

The laboratory will provide analytical data in electronic and/or paper form. Electronic data will be loaded into project databases and verified with the paper copy.

Some data from these sources (such as sample location name and coordinates, water levels, and field parameters) may also be manually entered into project databases or various programs such as computer-aided drafting and design (CADD). Manually entered data will be reviewed by a second individual.

The central data management tool for the laboratory is the laboratory information management system (LIMS). The LIMS is used for sample processing, including sample log-in and tracking, instrument data storage and processing, generating data reports, and verifying results. Data collected from each laboratory instrument, either manually or electronically, are reviewed and confirmed by the analyst prior to reporting. Laboratory records including chain-of-custody forms, bench sheets, and analytical results, whether in electronic or hard copy format, are stored chronologically by batch or project.

7.3 Data Review, Verification, and Validation

Field and laboratory data generated during implementation of the Work Plan will be reviewed, verified, and validated. Field data entered into databases will be verified. Errors identified during the verification of data will be corrected prior to release of the final data.

The laboratory is responsible for verifying analytical results prior to the submittal of the final laboratory data report. Initially, all analytical data generated by the laboratory are verified by the laboratory. During the analysis process, the analyst and the laboratory QA Manager verify that the results have met various performance-based control limits (e.g., surrogate recoveries and continuing calibration). Non-conformance of various method QC requirements and control limits warrants the re-analysis and/or re-extraction of a sample.

Finally, the data will be verified and validated based on the quality objectives specified in this QAPP and performance-based criteria specified in the analytical methods in accordance with applicable portions of EPA's Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review (EPA 2004; 2008). If data do not meet required criteria, they will be flagged with data qualifiers as specified under the action portion of each requirement of the functional guidelines (EPA 2004; 2008).

Data verification and validation will be conducted to assess the laboratory's performance in meeting the quality objectives identified in the QAPP (e.g., reporting limits and control limits) and performance-based criteria specified in the analytical methods. The components to be evaluated during the data validation process are summarized below:

- Holding times
- Method blank results
- Surrogate recovery results for organic analyses
- Laboratory control sample results
- Field duplicate results
- Field blank results
- Laboratory duplicate results, where applicable
- Matrix spike/matrix spike duplicate (MS/MSD) results for all relevant analyses
- Completeness
- Reported detection limits for analyses

If data do not meet the quality objectives and required criteria, they will be flagged with data qualifiers as specified under the action portion of each requirement of the functional guidelines (EPA 2004; 2008). Typical data qualifiers include, but are not limited to, "J," used to indicate an estimated value, "B," used to indicate blank contamination, and "R," used to indicate a rejected value. The findings of the data validation will be presented in the Remedial Investigation Report. Limitations to the usability of the data will also be discussed in the report.

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Tables

TABLE 1: SUMMARY OF SAMPLE CONTAINERS, PRESERVATIVES, AND HOLDING TIMES[(a)]

Analyte	Method	Soil/Sediment			Groundwater/Stormwater		
		Container	Preservative	Holding Time	Container	Preservative	Holding Time
Total/Dissolved Metals	EPA 6020/200.8	4 oz.WMG	Cool≤6ºC	6 Months	500 mL HDPE	HNO_3, Cool≤6ºC	6 Months
Total Mercury	EPA 7471	4 oz.WMG	Cool≤6ºC	28 Days			
Total/Dissolved Mercury	EPA 1631				500 mL fluoropolymer or glass; collection by EPA Method 1669	HCl or BrCl	48 hours/ 28 Days[(b)]
Hexavalent Chromium	EPA 7195/7196	4 oz.WMG	Cool≤6ºC	28 Days	500 mL HDPE	Filter, NaOH, Cool≤6ºC	24 hours/ 28 Days[(c)]
SVOCs/Phenols/PAHs	EPA 8270D-SIM	8 oz.WMG	Cool≤6ºC	14 Days	2-500 mL AG	Cool≤6ºC	7 Days
Gas Range TPH	NWTPH-Gx	2-40 ml vial/ 1-2 oz.WMGS	Cool≤6ºC, 2xMethanol	14 Days	2-40 mL AGV	HCl, Cool≤6ºC	2 Days/ 14 Days[(d)]
Diesel/Oil Range TPH	NWTPH-Dx	8 oz.WMG	Cool≤6ºC	14 Days	2-500 mL AG	Cool≤6ºC	7 Days
Dioxins/Furans	EPA 8290	250 mL AWMG	Frozen	1 year	1 Liter AG	Cool≤4ºC	14 Days
PCB Aroclors	EPA 8082	8 oz.WMG	Cool≤6ºC	14 Days	2-500 mL AG	Cool≤6ºC	7 Days
Total Organic Carbon	EPA 9060 / Plumb 1981	4 oz.WMG	Cool≤4ºC	14 Days	250 mL AG	NH_2SO_4, Cool≤6ºC	28 Days
Dissolved Organic Carbon	EPA 415.3				500 mL HDPE	HNO_3, Cool≤6ºC	48 hours/ 28 Days[(b)]
Grain Size	ASTM D-422	16 oz. WMG	None	6 Months			
Total Suspended Solids	SM 2450D				1,000 ml HDPE	Cool≤6ºC	7 Days
Total Dissolved Solids	SM 2450C				1,000 ml HDPE	Cool≤6ºC	7 Days
Chloride	SM 4500-Cl E				500 mL HDPE	Cool≤6ºC	28 Days
VOCs	EPA 8260C	4-40 mL vial/ 1-2 oz. WMGS	Cool≤6ºC, 2xSodium Bisulfate, 2xMethanol	14 Days	3-40 mLvial; collection by EPA Method 5035	HCl, Cool≤6ºC	2 Days/ 14 Days[(d)]

Notes:
(a) All sampling requirements and holding times to be verified by PLPs prior to any sample collection activities.
(b) Holding time is 48 hours if unpreserved, 28 days otherwise.
(c) Holding time is 24 hours if unpreserved, 28 days otherwise.
(d) Holding time is 2 days if unpreserved, 14 days otherwise.

Abbreviations:
ºC = degrees Celsius
AG = amber glass boston round bottle
AGV = amber glass vial
AWMG = amber wide mouth glass jar
BrCl = bromine monochloride
H_2SO_4 = sulfuric acid
HCl = hydrochloric acid
HDPE = high density polypropylene
HNO_3 = nitric acid
mL = milliliters
oz. = ounce
PCB = polychlorinated biphenyls
SM = Standard Method
TPH = total petroleum hydrocarbons
EPA = United States Environmental Protection Agency
VOCs = volatile organic compounds
SIM = select ion monitoring
SVOCs = semivolatile organic compounds
WMG = wide mouth glass jar
WMGS = wide mouth glass jar with Septa

Grayed cells indicate that analyte will not be sampled for that matrix.

TABLE 2: SUMMARY OF TARGET PQLs[a]

Analyte	Soil / CB Solids / Sediment Target PQL[b] µg/kg	Groundwater / Surfacewater Target PQL[b] µg/L
Metals		
Total/Dissolved Antimony	200	0.2
Total/Dissolved Arsenic	200	0.2
Total/Dissolved Beryllium	200	0.2
Total/Dissolved Barium	500	0.5
Total/Dissolved Cadmium	100	0.1
Total/Dissolved Chromium (total)	500	0.5
Total/Dissolved Chromium (hexavalent)	100	10
Total/Dissolved Copper	500	0.5
Total/Dissolved Lead	100	0.1
Total/Dissolved Mercury	25	0.0005[c]
Total/Dissolved Nickel	500	0.5
Total/Dissolved Selenium	500	0.5
Total/Dissolved Silver	200	0.2
Total/Dissolved Thallium	200	0.2
Total/Dissolved Zinc	4000	4
Volatile Organic Compounds		
1,1,1,2-Tetrachloroethane	1.0	0.2
1,1,1-Trichloroethane	1.0	0.2
1,1,2,2-Tetrachloroethane	1.0	0.2
1,1,2-Trichloro-1,2,2-Trifluoroethane	2.0	0.2
1,1,2-Trichloroethane	1.0	0.2
1,1-Dichloroethane	1.0	0.2
1,1-Dichloroethene	1.0	0.2
1,1-Dichloropropene	1.0	0.2
1,2,3-Trichlorobenzene	5.0	0.5
1,2,3-Trichloropropane	2.0	0.5
1,2,4-Trichlorobenzene	5.0	0.5
1,2,4-Trimethylbenzene	1.0	0.2
1,2-Dibromo-3-Chloropropane	5.0	0.5
1,2-Dibromoethane	1.0	0.2
1,2-Dichlorobenzene	1.0	0.2
1,2-Dichloroethane	1.0	0.2
1,2-Dichloropropane	1.0	0.2
1,3,5-Trimethylbenzene	1.0	0.2
1,3-Dichlorobenzene	1.0	0.2
1,3-Dichloropropane	1.0	0.2
1,4-Dichlorobenzene	1.0	0.2
2,2-Dichloropropane	1.0	0.2
2-Butanone	5.0	5
2-Chloroethyl Vinyl Ether	5.0	1
2-Chlorotoluene	1.0	0.2
2-Hexanone	5.0	5
4-Chlorotoluene	1.0	0.2
4-Isopropyl Toluene	1.0	0.2
4-Methyl-2-Pentanone	5.0	5
Acetone	5.0	5
Acrolein	50	5
Acrylonitrile	5.0	1
Benzene	1.0	0.2
Bromobenzene	1.0	0.2
Bromochloromethane	1.0	0.2
Bromodichloromethane	1.0	0.2
Bromoethane	2.0	0.2

TABLE 2: SUMMARY OF TARGET PQLs[a]

Analyte	Soil / CB Solids / Sediment Target PQL[b] µg/kg	Groundwater / Surfacewater Target PQL[b] µg/L
Volatile Organic Compounds, Cont'd		
Bromoform	1.0	0.2
Bromomethane	1.0	1
Carbon Disulfide	1.0	0.2
Carbon Tetrachloride	1.0	0.2
Chlorobenzene	1.0	0.2
Chlorodibromomethane	1.0	0.2
Chloroethane	1.0	0.2
Chloroform	1.0	0.2
Chloromethane	1.0	0.5
cis-1,2-Dichloroethene	1.0	0.2
cis-1,3-Dichloropropene	1.0	0.2
Dibromomethane	1.0	0.2
Ethyl Benzene	1.0	0.2
Hexachloro-1,3-Butadiene	5.0	0.5
Iodomethane (Methyl Iodide)	1.0	1
Isopropyl Benzene	1.0	0.2
m,p-Xylene	1.0	0.4
Methylene Chloride	2.0	1
Methyl-t-butyl ether (MTBE)	1.0	0.5
Naphthalene	5.0	0.5
n-Butylbenzene	1.0	0.2
n-Propyl Benzene	1.0	0.2
o-Xylene	1.0	0.2
s-Butylbenzene	1.0	0.2
Styrene	1.0	0.2
t-Butylbenzene	1.0	0.2
Tetrachloroethene	1.0	0.2
Toluene	1.0	0.2
trans-1,2-Dichloroethene	1.0	0.2
trans-1,3-Dichloropropene	1.0	0.2
trans-1,4-Dichloro-2-Butene	5.0	1
Trichloroethene	1.0	0.2
Trichlorofluoromethane	1.0	0.2
Vinyl Acetate	5.0	0.2
Vinyl Chloride	1.0	0.2
Semi-Volatile Organic Compounds: Low Level PAHs		
1-Methylnaphthalene	5	0.1
2-Methylnaphthalene	5	0.1
Acenaphthene	5	0.1
Acenaphthylene	5	0.1
Anthracene	5	0.1
Benzo(a)anthracene	5	0.01
Benzo(a)Pyrene	5	0.01
Benzo(g,h,i)Perylene	5	0.1
Benzo(b)fluoranthene	5	0.01
Benzo(k)fluoranthene	5	0.01
Chrysene	5	0.01
Dibenz(a,h)Anthracene	5	0.01
Dibenzofuran	5	0.1
Fluoranthene	5	0.1
Fluorene	5	0.1
Indeno(1,2,3-cd)Pyrene	5	0.01
Naphthalene	5	0.1
Phenanthrene	5	0.1
Pyrene	5	0.1

TABLE 2: SUMMARY OF TARGET PQLs[(a)]

Analyte	Soil / CB Solids / Sediment Target PQL[(b)] µg/kg	Groundwater / Surfacewater Target PQL[(b)] µg/L
Semi-Volatile Organic Compounds (excluding PAHs)		
1,2,4-Trichlorobenzene	5	1
1,2-Dichlorobenzene	5	1
1,3-Dichlorobenzene	5	1
1,4-Dichlorobenzene	5	1
2,2'-oxybis(1-Chloropropane)	20	1
2,3,4,6-Tetrachlorophenol	20	1
2,4,5-Trichlorophenol	100	5
2,4,6-Trichlorophenol	100	3
2,4-Dichlorophenol	20	3
2,4-Dimethylphenol	40	3
2,4-Dinitrophenol	850	20
2,4-Dinitrotoluene	100	3
2,6-Dinitrotoluene	100	3
2-Chloronaphthalene	20	1
2-Chlorophenol	20	1
2-Methylphenol	5	1
2-Nitroaniline	100	3
2-Nitrophenol	100	3
3,3'-Dichlorobenzidine	150	5
3-Nitroaniline	100	3
4,6-Dinitro-2-methylphenol	200	10
4-Bromophenyl-phenylether	20	1
4-Chloro-3-methylphenol	100	3
4-Chloroaniline	270	5
4-Chlorophenyl-phenylether	20	1
4-Methylphenol	10	2
4-Nitroaniline	100	3
4-Nitrophenol	100	10
Benzoic acid	400	20
Benzyl alcohol	20	2
Bis(2-Chloroethoxy)methane	20	1
Bis(2-Chloroethyl)ether	20	1
bis(2-Ethylhexyl)phthalate	25	3
Butylbenzylphthalate	5	1
Carbazole	20	1
Diethylphthalate	5	1
Dimethylphthalate	5	1
Di-n-butylphthalate	20	1
Di-n-octylphthalate	20	1
Hexachlorobenzene	5	1
Hexachlorobutadiene	5	3
Hexachlorocyclopentadiene	400	5
Hexachloroethane	20	2
Isophorone	20	1
Nitrobenzene	20	1
N-Nitroso-di-n-propylamine	25	1
N-Nitrosodiphenylamine	12	3
Pentachlorophenol	50	0.5
Phenol	5	1

TABLE 2: SUMMARY OF TARGET PQLs[a]

Analyte	Soil / CB Solids / Sediment Target PQL[b] µg/kg	Groundwater / Surfacewater Target PQL[b] µg/L
Polychlorinated Biphenyl Aroclors		
Aroclor 1016	4	0.01
Aroclor 1221	4	0.01
Aroclor 1232	4	0.01
Aroclor 1242	4	0.01
Aroclor 1248	4	0.01
Aroclor 1254	4	0.01
Aroclor 1260	4	0.01
Dioxins/Furans[d]		
2,3,7,8-TCDD	5.00E-05	--
1,2,3,7,8-PECDD	5.00E-05	--
1,2,3,4,7,8-HXCDD	5.00E-05	--
1,2,3,6,7,8-HXCDD	5.00E-05	--
1,2,3,7,8,9-HXCDD	5.00E-05	--
1,2,3,4,6,7,8-HPCDD	5.00E-05	--
OCDD	5.00E-05	--
2,3,7,8-TCDF	5.00E-05	--
1,2,3,7,8-PECDF	5.00E-05	--
2,3,4,7,8-PECDF	5.00E-05	--
1,2,3,4,7,8-HXCDF	5.00E-05	--
1,2,3,6,7,8-HXCDF	5.00E-05	--
1,2,3,7,8,9-HXCDF	5.00E-05	--
2,3,4,6,7,8-HXCDF	5.00E-05	--
1,2,3,4,6,7,8-HPCDF	5.00E-05	--
1,2,3,4,7,8,9-HPCDF	5.00E-05	--
OCDF	5.00E-05	--
Total Petroleum Hydrocarbons		
Gas Range	5000	250
Oil Range	10000	200
Diesel Range	5000	100

Notes:
(a) Target PQL values presented in this table are based on LOQ values from Analytical Resources, Inc. (ARI) of Seattle, Washington, unless otherwise noted.
(b) PQLs from selected analytical laboratories to be verified by PLPs and submitted to Ecology for approval prior to start of field sampling activities.
(c) Target PQL based on minimum level of quantitation for EPA Method 1631, Revision E (EPA 2002).
(d) Target PQLs for dioxins/furans are from AXYS Analytical Services, Ltd. of Sydney, B.C.

Abbreviations:
-- = not applicable/available
µg/kg = micrograms per kilogram
µg/L = micrograms per liter
PQL = Practical Quantitation Limit
LOQ - Limit of Quantitation