

PRELIMINARY INVESTIGATION DATA REPORT

DUWAMISH SHIPYARD, INC. (SITE #1429) SEATTLE, WASHINGTON

Prepared for

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

Prepared by

Anchor Environmental, L.L.C.
1423 Third Avenue, Suite 300
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Table of Contents

1	INTRODUCTION.....	1
2	PROPERTY BACKGROUND.....	2
2.1	Property Description and Use.....	2
2.1.1	Property Ownership History.....	2
2.1.2	DSI Ship Repair Activities.....	3
2.1.3	Environmental Controls.....	4
2.2	Independent Remedial Actions.....	4
2.2.1	1986 Leaded Gasoline UST Closure.....	4
2.2.2	2000 Diesel and Gasoline UST Excavations.....	5
2.2.3	1993 Independent Remedial Action.....	5
3	FIELD INVESTIGATION AND SAMPLING.....	7
3.1	Borehole Drilling Method.....	7
3.2	Borehole Sampling.....	8
3.2.1	Soil Sampling.....	8
3.2.2	Borehole Groundwater Sampling.....	8
3.3	Borehole Decommissioning.....	9
3.4	Catch Basin Solids Sampling.....	9
3.5	Monitoring Well Groundwater Sampling.....	9
3.5.1	Well Development.....	10
3.5.2	Water Level Monitoring.....	10
3.5.3	Groundwater Sample Collection.....	10
3.6	Surveying.....	11
3.7	Deviations from the Work Plan.....	11
4	CHEMICAL ANALYSES.....	12
4.1	Comparison of Results to MTCA Cleanup Levels.....	12
4.2	Comparison of Results to SMS and Marine Surface Water Criteria.....	13
5	REFERENCES.....	14

List of Tables

Table 1	Summary of Confirmation Sampling Exceedances
Table 2	Summary of Sample Coordinates and Intervals
Table 3	Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels
Table 4	Summary of Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels
Table 5	Summary of Analytical Results for Selected Soil Samples (Organic Carbon Normalized) and Comparison with Washington Sediment Management Standards

Table of Contents

Table 6 Summary of Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria

List of Figures

- Figure 1 Vicinity Map
- Figure 2 Historic Property Boundaries
- Figure 3 Existing Stormwater System and Independent Remedial Action Areas
- Figure 4 Preliminary Investigation Sample Location Map

List of Appendices

- Appendix A Exploratory Boring Logs
- Appendix B Field Documentation Notes
- Appendix C Chain of Custody Forms
- Appendix D Data Validation Review Report

List of Attachments

- Attachment 1 CD-ROM of Analytical Data Reports

1 INTRODUCTION

As required by the Washington Department of Ecology (Ecology) in its letters dated July 10, 2006 (Ecology 2006a) and August 3, 2006 (Ecology 2006b), this *Preliminary Investigation Data Report* (Data Report) provides the results of an investigation to determine the nature and extent of soil and groundwater contamination at the Duwamish Shipyard, Inc., (DSI) property (Property). Ecology approved the *Preliminary Investigation Work Plan* (Work Plan; Anchor 2006) on September 25, 2006 and fieldwork commenced on September 27, 2006. All samples were submitted for analytical testing by September 29, 2006. This submittal met Ecology's initial deadline of October 20, 2006.

This report presents the results of the sampling and analysis program as described in the Work Plan. The remainder of the report is organized as follows:

- Section 2 – Property Background
- Section 3 – Field Investigation and Sampling
- Section 4 – Chemical Analyses
- Section 5 – References

2 PROPERTY BACKGROUND

2.1 Property Description and Use

The Property occupies approximately 5 upland acres on the west bank of the Lower Duwamish Waterway (LDW) and is located at 5658 West Marginal Way SW in Seattle, Washington (Figure 1). The Property is either paved or covered with concrete-floored buildings. The Property is bordered to the north by the Alaska Marine Lines (AML) container facility and to the south by the Glacier Northwest Seattle Cement Facility. DSI also leases a graving dock from AML located directly adjacent to the northern DSI/AML property boundary. West Marginal Way is located immediately west of DSI, and AML owns additional staging property across this roadway. The Property is located in a highly industrialized area and is currently zoned for General Industrial (IG1 U/85) use. The eastern property boundary abuts the LDW. The LDW was placed by EPA on the National Priorities List (NPL or Superfund) in September 2001. The preliminary boundaries of the LDW Superfund Site extend from the Turning Basin downstream to Harbor Island. The Property is located within this initial delineation (approximately between River Miles 1.3 and 1.4). In addition, the Property is listed on Ecology's Contaminated Sediment Sites List, which was first published in 1996.

2.1.1 Property Ownership History

DSI purchased the original property as a tax title purchase from King County in May 1941. It then purchased a submerged parcel from Commercial Waterway District #1 in 1960, which was a mooring area for logs and vessels. In 1964, DSI exchanged the large southern portion of this submerged parcel with the Port of Seattle (Port) for land adjacent to DSI's southern boundary in order to allow the Port to develop a cement terminal. This parcel of land along the southern boundary was owned by the United States government prior to the Port and was leased and operated by Reichhold, Inc., between 1945 and 1961 for the manufacturing of various resins and formaldehyde products. The following year, DSI purchased the parcel to the west of DSI's original tract from General Construction Company. This was part of a larger parcel later sold to AML in 1999. Figure 2 shows the historic property boundaries.

2.1.2 DSI Ship Repair Activities

DSI engages in the repair and maintenance of floating vessels and equipment, including tug boats, barges, dredges, fishing vessels, small passenger vessels, and other types of commercial vessels. It provides services to approximately 60 to 65 vessels per year. The hulls of the vessels repaired are generally constructed of steel and, infrequently, aluminum or fiberglass. DSI's ship repair services include machine and electrical work, carpentry, steel fabrication, pipe-fitting, sand blasting, pressure washing, and painting. The haul-out facilities at the Property include two steel drydocks (owned by DSI) and a graving dock (leased from AML).

The two steel drydocks are located along the shoreline, oriented generally in a north-south direction. Both drydocks have been updated to provide containment for pressure wash wastewater. Wastewater flows to one end of the drydock, where it is captured in a collection sump and pumped onshore to a Delta Pollution Control flocculation pretreatment system prior to discharge to the King County sanitary sewer.

The AML graving dock is 410 feet long and 138 feet wide. Repairs in the graving dock take place below the surface level of the river. Vessels are floated into the graving dock, then the tide gates are shut and the water is pumped out to create a dry work environment. Pumps are used to continuously keep the concrete floor of the dock dry due to leaking from the tide gates. DSI has installed a containment system to separate pressure wash water from the water that seeps in through the tide gate.

Originally, DSI only had a marine railway for docking vessels. The majority of the vessels were wooden fish boats. Boats would be pulled up on the railway and could be sidetracked onto timbers on the shore. DSI frequently sidetracked boats in the fall, worked on them over the winter, and launched them in the spring. The work consisted mainly of wooden hull repairs and painting. DSI ended the sidetracking process in the late 1950s.

DSI acquired its first floating drydock in 1967. The floating drydock is a small, steel dock that is still in use by DSI. It acquired a second, larger wood drydock in approximately 1969. After this time, most of the vessel dockings were made on the

drydocks. DSI sold the large wooden drydock in 1990 and replaced it with the current 1,000-ton steel drydock. Most of the vessels that DSI currently repairs are of steel construction. Occasionally, DSI will work on aluminum hulls or fiberglass, but it no longer works on wooden vessels.

2.1.3 Environmental Controls

The stormwater system servicing the Property consists of 10 catch basins that convey water from the paved parking areas and active industrial areas to a 10-inch-diameter trunk line. This line then discharges to a sump located adjacent to the former marine railway. Stormwater enters the sump and is pumped through a centrifugal separator to remove grit prior to discharge via outfall (as shown on Figure 3). Incident rainfall is the only source of stormwater to the Property, as surface drainages are not allowed to enter the Property. The catch basins that receive runoff have been fitted with catch basin inserts and oil sorbent pillows. The system was constructed in the mid-1970s and is currently operated under National Pollutant Discharge Elimination System (NPDES) Permit No. WA-003093-7. This permit also regulates potential stormwater discharges from operations on the AML graving dock and the two movable drydocks used for repair of various vessels.

2.2 Independent Remedial Actions

The purpose of this section is to summarize the past remedial actions that have been performed at the Property, including the decommissioning of two underground storage tanks (USTs) and one independent remedial action. The locations of these projects are shown on Figure 3.

2.2.1 1986 Leaded Gasoline UST Closure

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

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

2.2.2 2000 Diesel and Gasoline UST Excavations

In 2000, four USTs containing diesel fuel and unleaded gasoline were excavated and removed. Those four USTs were installed between 1968 and 1979. The excavation was performed by Quality Tank Service, Inc., a certified UST decommissioning contractor. The excavation was also supervised by Roy Kuroiwa, a professional engineer registered in the State of Washington. During the initial excavation, 60 cubic yards (cy) of soil were excavated with the USTs, prior to collection of bottom and sidewall soil samples. Seven of the initial confirmation samples contained concentrations of total petroleum hydrocarbons (TPH; diesel [TPH-Dx] and gasoline [TPH-G] range) and benzene above Model Toxics Control Act (MTCA) Method A industrial cleanup levels for soil. An additional 20 cy of soil were excavated from these locations and samples were recollected. Five of the second round of confirmation samples exceeded MTCA industrial cleanup levels. Four of the samples exceeded the TPH-G cleanup level and one exceeded the benzene cleanup level. These data are summarized in Table 1. No groundwater samples were collected as part of the confirmation sampling program.

2.2.3 1993 Independent Remedial Action

During the development of the parcel previously leased to and subsequently purchased by AML (shown as Areas A and B on Figure 2), soil affected by an unknown release of petroleum product was discovered. Historically, this area of the property now owned by AML and formerly owned by DSI was leased by DSI to various entities for storage of used machinery, parking of trucks and trailers, and storage and distribution of lumber. In August 1993, Environmental Services Limited performed a preliminary site assessment consisting of five soil borings, five test pits, and four monitoring wells (the only remaining well, MW4, is shown on Figure 3). The results indicated TPH constituents in soil and groundwater exceeding MTCA industrial cleanup levels. In response, DSI contracted with Hart Crowser, Inc. (HCI), in October 1993 to oversee the excavation of approximately 650 cy of soil.

During excavation of the affected soil, several restrictions (a 26KV buried powerline, a pad-supported power transformer foundation, the graving dock foundation, and the shallow groundwater table) were encountered, preventing completion of excavation of the delineated area. Upon removal, 12 soil confirmation samples were collected from the excavation sidewalls. All of these samples met MTCA industrial cleanup levels for semivolatile organic chemicals (SVOCs) and eight were below MTCA industrial cleanup levels for TPH-G, TPH-Dx, and TPH-O (lubricant oil range). The excavation area was backfilled and capped with asphalt, and an additional monitoring well (shown as MW5 on Figure 3) was installed to assess downgradient groundwater quality.

Groundwater samples were collected from MW4 and MW5 over four events in 1994 (two wet and two dry) and one event in February of 1999. Analysis of the MW4 data, reported by HCL, indicated a 25 percent reduction in TPH concentrations, although they did not meet MTCA groundwater cleanup levels based on Method B for protection of surface water. Groundwater cleanup levels were calculated based on Method B for protection of surface water, and not drinking water standards, because the Property and surrounding properties are industrial and do not serve as a drinking water source. Furthermore, the LDW is not classified for use as a domestic water source. For all five sampling events, MW5 met MTCA groundwater cleanup levels for TPH. Benzene, toluene, ethylbenzene, and xylenes (BTEX) were not found to be above detectable concentrations. No additional soil samples were collected after the remedial action was completed.

3 FIELD INVESTIGATION AND SAMPLING

Based on our review of the available data and field reconnaissance, 12 upland sampling locations were selected as shown on Figure 4. In accordance with the Work Plan, two soil samples and one groundwater sample were collected at each location (for a total of 24 soil and 12 groundwater samples). The wells installed as part of the 1993 Independent Remedial Action were redeveloped and sampled, producing two additional groundwater samples. Finally, solids from each of the catch basins and the stormwater system sump were collected. Table 2 includes a list of all stations and sample identifiers.

This section describes the techniques implemented for drilling test borings, sampling groundwater, and collecting soil and catch basin solids samples. Tasks related to drilling (reconnaissance groundwater sampling during drilling, borehole logging, and soil classification) are also described. The methods outlined in this section conform to requirements in the Washington State Minimum Standards for Construction and Maintenance of Wells, Chapter 173-160 WAC and are in compliance with Ecology MTCA Regulations, Chapter 173-340 WAC.

3.1 Borehole Drilling Method

The borings were advanced by direct push (Geoprobe™) drill rig. Coring commenced at the ground surface with a 5-foot-long, 1.5-inch inside-diameter (ID) core sampler. Continuous samples were collected with the core sampler into disposable, single-use plastic liners. Liners were cut in half lengthwise to remove the soil sample for identification and subsampling.

Between each sample interval, a new liner was placed inside the core sampler. The process was repeated prior to refusal as sufficient water was encountered within two 5-foot sample intervals. Between samples, the core sampler was decontaminated, stored, and handled consistent with the procedures specified in the Work Plan (Anchor 2006).

Each core sample was examined to develop a lithologic boring log. This activity was performed by a geologist licensed in Washington. The samples were described in the field as to their color, structure, texture, mineral composition, moisture, and percent recovery, according to American Society for Testing and Materials (ASTM) Method D-2488, *Standard*

Practice for Description and Identification of Soils (Visual-Manual Procedures). Samples were also examined for evidence of possible contamination, including presence of anthropogenic material, chemical odor, and staining. All observations are noted on the exploratory boring log forms provided in Appendix A.

3.2 Borehole Sampling

This section describes the methods used for soil, groundwater, and catch basin solids sample collection and processing. All field work was performed in accordance with the procedures required in the Work Plan (Anchor 2006).

3.2.1 Soil Sampling

At each borehole location, two soil samples were collected. Soil samples were collected in two intervals above the groundwater table. The upper sample consisted of a 3-foot composite collected from 0 to 3 feet below the existing ground surface. The lower sample consisted of a 2-foot composite collected immediately above the observed water table, generally between 3 and 5 feet below the existing ground surface.

A volatile organic compound (VOC) soil sample from each interval was collected using an Encore sampler kit, following EPA Method 5035A, to ensure minimal volatilization of the VOCs. The remaining soil from each interval was then homogenized and placed into the appropriate sample jar either for archive or additional non-VOC analyses.

3.2.2 Borehole Groundwater Sampling

One groundwater sample was obtained from each direct-push borehole using a 10-foot long polyvinyl chloride (PVC) well screen. The well screen was lowered into the open borehole after soil sampling was complete.

Groundwater samples were collected using a peristaltic pump equipped with new, disposable polyethylene intake tubing. Water samples were drawn through the screen and to the ground surface and discharged directly to sample bottles. VOC and NWTPH-Gx samples were collected first by slowly pumping groundwater directly into laboratory-supplied glass vials so that no head space remained in the vials. All

measurements and samples collected were noted on the field sampling data sheets provided in Appendix B.

For all metals samples, both total and dissolved samples were analyzed. Dissolved metals samples were filtered in the field with a new, disposable 0.45-micron in-line filter as the sample was pumped into the appropriate container. Field water quality parameters (pH, specific conductance, and temperature) were measured by collecting groundwater from the tubing into a clean open mouth container and measuring field water quality parameters using a portable, calibrated meter. Any equipment in contact with samples was properly decontaminated between samples.

3.3 Borehole Decommissioning

Boreholes were decommissioned in accordance with state regulations (Chapter 173-160 WAC). All temporary well materials were removed from the borehole and the boreholes were abandoned by the hole with bentonite chips and hydrating.

3.4 Catch Basin Solids Sampling

Prior to sampling, the thickness of the solid media was determined using a steel rod. If present, samples of solids contained within each catch basin were collected using a stainless steel spoon. The samples were homogenized and placed into the appropriate composite sample jar. Only the sample collected from the basin adjacent to the outfall sump was submitted for analysis. All remaining samples were sent to the analytical laboratory for archiving and preservation at 4° Celsius. As stated in the Work Plan (Anchor 2006), no catch basin water was collected. A summary of the catch basin sampling notes is provided in Appendix B.

3.5 Monitoring Well Groundwater Sampling

After development, one groundwater sample was collected from each of the two monitoring wells installed in 1993 (Hart Crowser 1994). Specific procedures are described in the following sections.

3.5.1 Well Development

The monitoring wells were developed with a combination of surging, bailing, and pumping. Development continued until a minimum of 10 casing volumes of water was removed from the well, the groundwater became clear, and field parameters were stable. After development, groundwater from monitoring well MW-4 was clear and colorless; groundwater from MW-5 was clear and amber in color. Copies of the well development field forms are in Appendix B.

3.5.2 Water Level Monitoring

Depth-to-water (groundwater elevation) was measured with an electronic water-level indicator. Levels were measured to the nearest 0.01 foot from a surveyed mark at the top of the PVC casing. Measurements were recorded immediately on FSDS with the date, time (on a 24-hour clock), reference point, and signature of the person who made the measurements. The water-level indicator was decontaminated in between each well sampling event.

3.5.3 Groundwater Sample Collection

Groundwater sampling was performed in accordance with the methods required in the Work Plan. Purging and sampling were conducted using a peristaltic pump equipped with new, disposable polyethylene intake tubing. Prior to sampling, a minimum of three well casing volumes was purged. After each well casing volume was removed, field water-quality parameters (pH, specific conductance, and temperature) were recorded using a portable, calibrated meter equipped with a flow-through cell. Purging continued until field parameters stabilized to within 10 percent of the previous reading before a sample was collected. Water samples were drawn through the well screen and to the ground surface and discharged directly to sample bottles. VOC and NWTPH-Gx samples were collected first by slowly pumping groundwater directly into laboratory-supplied glass vials so that no head space remained in the vials. All measurements and samples collected were noted on the field sampling data sheets provided in Appendix B.

For all metals samples, both total and dissolved samples were analyzed. Dissolved metals samples were filtered in the field with a new, disposable 0.45-micron in-line filter

as the sample was pumped into the appropriate container. Any equipment in contact with samples was properly decontaminated between samples.

3.6 Surveying

After the field component of the investigation was complete, APS Survey and Mapping, L.L.C. (Issaquah, Washington) performed a survey of the 12 borehole locations. Survey information for the 1993 Independent Remedial Action monitoring wells was previously collected by Jim Hart and Associates (Kirkland, Washington) in 1993. All horizontal coordinates are referenced to Washington State Plane North, NAD-83. All vertical coordinates are referenced to mean lower low water (MLLW).

3.7 Deviations from the Work Plan

During groundwater sampling from the temporary boreholes, PVC well screen, screened over the entire 10-foot interval, was used instead of a wire-wrapped stainless steel well point as noted in the Work Plan. This deviation is not likely to affect sample results. No other deviations from the Work Plan occurred.

4 CHEMICAL ANALYSES

Samples were analyzed for appropriate constituents for groundwater and soil as set forth in MTCA regulations as well as the metals analyte list contained in Ecology's Sediment Management Standards (SMS) (Chapter 173-204 WAC; Ecology 1995). Chemical analysis was performed according to the requirements as outlined in the Work Plan (Anchor 2006), including sample analysis as well as quality assurance/quality control (QA/QC) measures, including calibration, duplicates, blanks, and spikes. Analysis also included a full data review, validation, and verification (presented in Appendix D), and the production of electronic data deliverables.

4.1 Comparison of Results to MTCA Cleanup Levels

Tables 3 and 4 summarize the chemical analytical results for all soil and groundwater samples, respectively, collected during the field investigation. Copies of the chemistry laboratory data package are provided as a CD-ROM attachment to this report. These data were compared to the MTCA Method A industrial cleanup levels to provide an initial assessment of the potential for contaminated soil and groundwater on the Property.

Exceedances of the cleanup levels are noted on the tables. Results were as follows:

- TPH-Gx was detected in five of the 24 soil samples and was non-detect in all groundwater samples, including the monitoring wells. No free product was observed during sampling. These concentrations represent a decrease from those collected during the 2000 UST excavation.
- TPH-Dx was detected in both soil sample intervals at location DSI-06 and was non-detect in all groundwater samples, including the monitoring wells. No free product was observed during sampling.
- Benzene was detected in two surficial soil samples, but was only detected in groundwater at one location (DSI-07).
- These TPH-Gx, TPH-Dx, and benzene concentrations represent a decrease from those collected during the 2000 UST excavation and the last monitoring well sampling event conducted in 1999.
- Arsenic was detected in two soil samples and in nine of the 12 borehole groundwater samples (measured on a total basis).
- In addition to arsenic, cadmium and lead were detected in the subsurface soil sample at DSI-09; however, only lead (measured on a total basis) was detected in borehole groundwater at that location.

- Pesticides were not detected in any of the soil or groundwater samples.
- Polychlorinated biphenyls (PCBs; Aroclors) were not detected in any of the soil or groundwater samples.
- Vinyl chloride was detected in three of the 12 borehole groundwater samples.
- Benzo(a)pyrene was detected in soil and groundwater at sample location (DSI-12).

4.2 Comparison of Results to SMS and Marine Surface Water Criteria

Because the Property is located adjacent to a surface water body (i.e., the Duwamish Waterway), subsets of Tables 3 and 4 were developed for comparison to the SMS and Washington State Marine Surface Water Standards, Chapter 173-201A WAC (Ecology 2006c), and presented in Tables 5 and 6. The catch basin solids data are also presented in Table 5. Please note that the data in this table have been organic carbon normalized, where appropriate, to allow a direct comparison with the SMS Sediment Quality Standards (SQS) and Cleanup Screening Level (CSL) values. Results were as follows:

- The catch basin solids sample showed detects of some metals (copper, mercury, and zinc), one polyaromatic hydrocarbon (PAH; acenaphthene), and two phthalates [butylbenzylphthalate and bis(2-ethylhexyl)phthalate]. No water sample was collected at this location.
- Cadmium, copper, lead, and zinc were detected in the DSI-09 subsurface sample above the SMS SQS and CSL.
- Mercury was detected in the DSI-11 surface sample above the SMS SQS and CSL.
- In the surface and subsurface DSI-12 samples, various PAHs were detected above the SMS SQS and CSL.
- No surface water criteria exceedances were noted for any of the nearshore borehole groundwater samples.

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TABLES

Table 1
Summary of Confirmation Sampling Exceedances

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

mg/kg: milligrams per kilogram

**Table 2
Summary of Sample Coordinates and Intervals**

Station ID	Soil/Catch Basin Sample ID	Sample Interval (feet)		Groundwater Sample ID	Screened Sample Interval (feet)		Northing (feet)	Easting (feet)	Ground Surface Elevation
DSI01	DSI01-SO-A	0	3	DSI01-GW	0	10	204362.38	1267483.65	15.85
	DSI01-SO-B	4	6	-			204362.38	1267483.65	15.85
DSI02	DSI02-SO-A	0	3	DSI02-GW	-	-	204484.72	1267482.28	16.55
	DSI02-SO-B	3	5	-			204484.72	1267482.28	16.55
DSI03	DSI03-SO-A	0	3	DSI03-GW	0	10	204614.54	1267538.20	16.56
	DSI03-SO-B	5	6.5	-			204614.54	1267538.20	16.56
DSI04	DSI04-SO-A	0	3	DSI04-GW	0	10	204577.53	1267677.30	14.95
	DSI04-SO-B	3	5	-			204577.53	1267677.30	14.95
DSI05	DSI05-SO-A	0	3	DSI05-GW	0	10	204414.79	1267664.49	15.38
	DSI05-SO-B	3	5	-			204414.79	1267664.49	15.38
DSI06	DSI06-SO-A	0	3	DSI06-GW	0	10	204403.48	1267832.57	15.38
	DSI06-SO-B	4	6	-			204403.48	1267832.57	15.38
DSI07	DSI07-SO-A	0	3	DSI07-GW	0	10	204440.17	1267843.29	15.30
	DSI07-SO-B	3	5	-			204440.17	1267843.29	15.30
DSI08	DSI08-SO-A	0	3	DSI08-GW	0	10	204599.08	1267815.08	15.08
	DSI08-SO-B	3	5	-			204599.08	1267815.08	15.08
DSI09	DSI09-SO-A	0	3	DSI09-GW	0	10	204599.10	1267972.09	15.10
	DSI09-SO-B	3	5	-			204599.10	1267972.09	15.10
DSI10	DSI10-SO-A	0	3	DSI10-GW	0	10	204456.02	1267928.63	14.96
	DSI10-SO-B	3	5	-			204456.02	1267928.63	14.96
DSI11	DSI11-SO-A	0	3	DSI11-GW	0	10	204358.81	1267970.43	14.74
	DSI11-SO-B	3	5	-			204358.81	1267970.43	14.74
DSI12	DSI12-SO-A	0	3	DSI12-GW	0	10	204269.04	1267970.42	14.38
	DSI12-SO-B	3	5	-			204269.04	1267970.42	14.38
DSI13	DSI13-CB-YYMMDD	-	-	-	-	-	204534.18	1267506.84	15.60
DSI14	DSI14-CB-YYMMDD	-	-	-	-	-	204487.92	1267507.37	15.31
DSI15	DSI15-CB-YYMMDD	-	-	-	-	-	204566.32	1267577.87	14.60
DSI16	DSI16-CB-YYMMDD	-	-	-	-	-	204603.21	1267662.99	14.75
DSI17	DSI17-CB-YYMMDD	-	-	-	-	-	204482.78	1267687.03	14.66
DSI18	DSI18-CB-YYMMDD	-	-	-	-	-	204572.22	1267818.66	14.97
DSI19	DSI19-CB-YYMMDD	-	-	-	-	-	204512.92	1267823.23	14.49
DSI20	DSI20-CB-YYMMDD	-	-	-	-	-	204435.85	1267776.70	14.43
DSI21	DSI21-CB-YYMMDD	-	-	-	-	-	204471.91	1267822.86	15.23
DSI22	DSI22-CB-YYMMDD	0	1.5	-	-	-	204481.19	1268018.19	-
DSI23	DSI23-CB-YYMMDD	-	-	-	-	-	204460.68	1267966.97	14.59
MW-4	-	-	-	MW4-GW-YYMMDD	5	17	204675.26	1267474.81	20.09
MW-5	-	-	-	MW5-GW-YYMMDD	11	16	204585.26	1267494.81	16.49

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

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

**Table 3
Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

Location ID Sample ID Sample Date Depth Interval Sample Matrix Sample Type	MTCA A Industrial	DSI-01	DSI-01	DSI-02	DSI-02	DSI-03	DSI-03	DSI-04	DSI-04	DSI-05	DSI-05	DSI-06	DSI-06	DSI-07	DSI-07
		DSI01-SO-A 9/27/2006 0-3 ft SO N	DSI01-SO-B 9/27/2006 4-6 ft SO N	DSI02-SO-A 9/27/2006 0-3 ft SO N	DSI02-SO-B 9/27/2006 3-5 ft SO N	DSI03-SO-A 9/27/2006 0-3 ft SO N	DSI03-SO-B 9/27/2006 5-6.5 ft SO N	DSI04-SO-A 9/27/2006 0-3 ft SO N	DSI04-SO-B 9/27/2006 3-5 ft SO N	DSI05-SO-A 9/27/2006 0-3 ft SO N	DSI05-SO-B 9/27/2006 3-5 ft SO N	DSI06-SO-A 9/27/2006 0-3 ft SO N	DSI06-SO-B 9/27/2006 4-6 ft SO N	DSI07-SO-A 9/28/2006 0-3 ft SO N	DSI07-SO-B 9/28/2006 3-5 ft SO N
Conventionals (%)															
Total solids	--	88.40	80.20	96.10	78.60	96.10	89.40	74.30	87.60	76.70	88.90	78.40	90.20	74.10	95.50
Total Organic Carbon	--	1.11	0.384	0.305	0.698	0.325	0.781	0.579	0.084	1.07	0.226	1.37	0.308	1.05	0.097
TPH (mg/kg)															
TPH - Gasoline Range	30/100 ⁽¹⁾	5.3 U	6.3 U	4.8 U	22	92	110	20	6.4 U	16	8.4	120	13	74	36
TPH - Diesel Range	2000	65	12	15	66	61	380	40	5.5 U	46	5.7 U	2700	2200	16	20
TPH - Motor Oil Range	2000	140	33	170	130	110	310	100	11 U	160	11 U	260	190	29	18
Metals (mg/kg)															
Arsenic	20	48.1 J	3.5	18.9	5.8	7.1	10.4	6.4	1.1	7.1	1.3	7.0	2.2	4.3 J	1.6
Cadmium	2	0.4	0.2	2 U	0.3	1 U	0.5	0.5	0.2 U	0.6	0.2 U	0.3	0.2 U	0.3 U	0.2 U
Chromium	2000	20.4	15.9	5	21.7	61	34	27.2	10.4	21.1	11.0	20.0	15.2	19.6	25.9
Chromium VI	19	0.125 UJ	0.135 UJ	0.116 UJ	0.140 UJ	0.111 UJ	0.126 UJ	0.151 UJ	0.127 UJ	0.142 UJ	0.127 UJ	0.143 UJ	0.120 UJ	0.150 UJ	0.115 UJ
Copper	--	103 J	20.4	55	33.6	539	238	45.9	9.0	122	11.9	37.1	18.2	52.1 J	10.3
Lead	1000	36 J	6	20 U	32	460	94	14	2 U	78	3	14	6	11 J	3
Mercury	2	0.09	0.05 U	0.05	0.20	0.05 U	0.05 U	0.15	0.04 U	0.27	0.04 U	0.14	0.05 U	0.72 J	0.04 U
Silver	--	0.3 U	0.3 U	3 U	0.4 U	2 U	0.8 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U
Zinc	--	192	36.8	57	57.7	129	160	85.4	21.9	127	26.4	57.5	33.6	53.2	29.1
Pesticides (µg/kg)															
4,4'-DDD	--	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	28	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
4,4'-DDE	--	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
4,4'-DDT	4000	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
Total DDT (U=1/2)	--	4.95 U	4.8 U	4.8 U	4.95 U	4.8 U	4.8 U	4.8 U	4.65 U	31.1	4.8 U	4.8 U	4.95 U	4.8 U	4.8 U
Aldrin	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
alpha-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
beta-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
delta-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
gamma-BHC (Lindane)	10	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
alpha-Chlordane	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
gamma-Chlordane	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
Dieldrin	--	3.3 U	3.2 U	3.2 U	3.3 U	8.5 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
Endosulfan I	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
Endosulfan II	--	3.3 U	3.2 U	3.2 U	3.3 U	9.9 U	7.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
Endosulfan Sulfate	--	3.3 U	3.2 U	3.2 U	3.3 U	15 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
Endrin	--	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
Endrin aldehyde	--	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
Endrin ketone	--	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
Heptachlor	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
Heptachlor Epoxide	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
Methoxychlor	--	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	17 U	16 U	16 U
Toxaphene	--	160 U	160 U	160 U	160 U	160 U	160 U	160 U	160 U	160 U	160 U	160 U	170 U	160 U	160 U
PCBs (µg/kg)															
Aroclor 1016	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	9.8 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
Aroclor 1221	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	9.8 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
Aroclor 1232	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	9.8 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
Aroclor 1242	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	9.8 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
Aroclor 1248	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	9.8 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
Aroclor 1254	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	39 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
Aroclor 1260	--	43 J	10 J	9.7 UJ	9.7 UJ	300 J	94 J	9.6 UJ	9.5 UJ	46 J	9.6 UJ	9.7 UJ	9.7 UJ	9.7 U	9.6 U
Total PCBs (U=1/2)	10000	72.4	39.4	34 U	34 U	444	122	33.6 U	33.2 U	90	33.6 U	34 U	34 U	34 U	33.6 U
SVOCs (µg/kg)															

**Table 3
Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

Location ID	Sample ID	Sample Date	Depth Interval	Sample Matrix	Sample Type	MTCA A Industrial	DSI-01	DSI-01	DSI-02	DSI-02	DSI-03	DSI-03	DSI-04	DSI-04	DSI-05	DSI-05	DSI-06	DSI-06	DSI-07	DSI-07
							DSI01-SO-A 9/27/2006 0-3 ft SO N	DSI01-SO-B 9/27/2006 4-6 ft SO N	DSI02-SO-A 9/27/2006 0-3 ft SO N	DSI02-SO-B 9/27/2006 3-5 ft SO N	DSI03-SO-A 9/27/2006 0-3 ft SO N	DSI03-SO-B 9/27/2006 5-6.5 ft SO N	DSI04-SO-A 9/27/2006 0-3 ft SO N	DSI04-SO-B 9/27/2006 3-5 ft SO N	DSI05-SO-A 9/27/2006 0-3 ft SO N	DSI05-SO-B 9/27/2006 3-5 ft SO N	DSI06-SO-A 9/27/2006 0-3 ft SO N	DSI06-SO-B 9/27/2006 4-6 ft SO N	DSI07-SO-A 9/28/2006 0-3 ft SO N	DSI07-SO-B 9/28/2006 3-5 ft SO N
	1,2,3-Trichlorobenzene	--				--	4.6 U	5.6 U	4.8 U	5.2 U	5.2 U	4.6 U	6.5 U	5.6 U	6.4 UJ	6.4 U	470 U	5.5 U	6.1 U	6.2 U
	1,2,4-Trichlorobenzene	--				--	4.6 U	5.6 U	4.8 U	5.2 U	5.2 U	4.6 U	6.5 U	5.6 U	6.4 UJ	6.4 U	470 U	5.5 U	6.1 U	6.2 U
	1,2,4-Trimethylbenzene	--				--	0.9 U	1.1 U	3.8	100	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	120	1.1 U	3200	51
	1,2-Dichlorobenzene	--				--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,3,5-Trimethylbenzene	--				--	0.9 U	1.1 U	1.2	39	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	80	15
	1,3-Dichlorobenzene	--				--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,4-Dichlorobenzene	--				--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	2,4-Dimethylphenol	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Methylnaphthalene	--				--	19	5.0 U	4.7	98	4.7 U	40	16	5.0 U	26	4.7 U	33	27 U	22	66
	2-Methylphenol	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Methylphenol	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Acenaphthene	--				--	5.8	5.0 U	4.7 U	120	5.6	4.7 U	5.0 U	5.0 U	4.9 U	4.7 U	30 U	27 U	5.0 U	9.9
	Acenaphthylene	--				--	9.1	5.0 U	4.7 U	4.8 U	4.7 U	4.7 U	5.0 U	5.0 U	6.4	4.7 U	30 U	48	5.0 U	5.0 U
	Anthracene	--				--	44	8.4	4.7 U	100	5.1	8.5	5.9	5.0 U	12	4.7 U	30 U	27 U	5.5	7.9
	Benzo(a)anthracene	--				--	64	9.9	4.7 U	110	9.8	11	14	5.0 U	28	4.7 U	30	43	14	6.4
	Benzo(a)pyrene	2000				--	56	9.4	5.7	110	10	12	8.4	5.0 U	29	4.7 U	39	99	11	5.9
	Benzo(b)fluoranthene	--				--	120	15	11	72	12	21	16	5.0 U	48	4.7 U	57	91	16	5.9
	Benzo(g,h,i)perylene	--				--	65	9.4	5.7	38	7.0	5.2	5.0 U	5.0 U	13	4.7 U	30 U	54	9.5	5.0 U
	Benzo(k)fluoranthene	--				--	74	17	9.4	90 J	14	15	13	5.0 U	28	4.7 U	54	94	14	5.0 U
	Benzoic acid	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzyl alcohol	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(2-Ethylhexyl)phthalate	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Butylbenzylphthalate	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chrysene	--				--	130	22	10	140 J	17	31	25	5.0 U	50	4.7 U	78	120	22	6.9
	Dibenzo(a,h)anthracene	--				--	18	5.0 U	4.7 U	12	4.7 U	4.7 U	5.0 U	5.0 U	4.9 U	4.7 U	30 U	27 U	5.0 U	5.0 U
	Dibenzofuran	--				--	12	5.0 U	4.7 U	56	4.7 U	9.4	5.4	5.0 U	16	4.7 U	30 U	27 U	5.0 U	5.0 U
	Diethylphthalate	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Dimethylphthalate	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Di-n-butylphthalate	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Di-n-octylphthalate	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Fluoranthene	--				--	170	36	11	270	26	38	40	5.0 U	96	4.7 U	120	120	45	15
	Fluorene	--				--	11	5.0 U	4.7 U	120	5.1	19	5.0 U	5.0 U	6.9	4.7 U	30 U	27	5.0 U	14
	Hexachlorobenzene	--				--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	Hexachlorobutadiene	--				--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	Hexachloroethane	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Indeno(1,2,3-cd)pyrene	--				--	54	8.9	4.7 U	37	5.6	4.7 U	5.4	5.0 U	13	4.7 U	30 U	48	7.0	5.0 U
	Naphthalene	5000				--	24	5.0	5.2	180	6.5	12	13	5.0 U	53	4.7 U	57	27	69	47
	n-Nitrosodiphenylamine	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pentachlorophenol	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phenanthrene	--				--	68	14	7.6	410 J	27	100	24	5.0 U	91	4.7 U	90	80	25	13
	Phenol	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pyrene	--				--	140	29	10	280	21	37	33	5.0 U	72	4.7 U	160	320	34	21
	Total PAHs (U=1/2)	--				--	1053	194	92	2091	176	319	210	40 U	551	37.6 U	790	1212	282	165
	Volatiles (µg/kg)																			
	1,1,1,2-Tetrachloroethane	--				--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1,1-Trichloroethane	2000				--	13	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1,2,2-Tetrachloroethane	--				--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1,2-Trichloroethane	--				--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1-Dichloroethane	--				--	10	7.9	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1-Dichloroethene	--				--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U

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

Location ID	Sample ID	Sample Date	Depth Interval	Sample Matrix	Sample Type	MTCA A Industrial	DSI-01	DSI-01	DSI-02	DSI-02	DSI-03	DSI-03	DSI-04	DSI-04	DSI-05	DSI-05	DSI-06	DSI-06	DSI-07	DSI-07
							DSI01-SO-A 9/27/2006 0-3 ft SO N	DSI01-SO-B 9/27/2006 4-6 ft SO N	DSI02-SO-A 9/27/2006 0-3 ft SO N	DSI02-SO-B 9/27/2006 3-5 ft SO N	DSI03-SO-A 9/27/2006 0-3 ft SO N	DSI03-SO-B 9/27/2006 5-6.5 ft SO N	DSI04-SO-A 9/27/2006 0-3 ft SO N	DSI04-SO-B 9/27/2006 3-5 ft SO N	DSI05-SO-A 9/27/2006 0-3 ft SO N	DSI05-SO-B 9/27/2006 3-5 ft SO N	DSI06-SO-A 9/27/2006 0-3 ft SO N	DSI06-SO-B 9/27/2006 4-6 ft SO N	DSI07-SO-A 9/28/2006 0-3 ft SO N	DSI07-SO-B 9/28/2006 3-5 ft SO N
	1,1-Dichloropropene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	1,2,3-Trichloropropene	--	1.8 U	2.2 U	1.9 U	2.1 U	2.1 U	1.8 U	2.6 U	2.2 U	2.5 UJ	2.6 U	190 U	2.2 U	2.4 U	2.5 U				
	1,2-Dibromo-3-chloropropene	--	4.6 U	5.6 U	4.8 U	5.2 U	5.2 U	4.6 U	6.5 U	5.6 U	6.4 UJ	6.4 U	470 U	5.5 U	6.1 U	6.2 U				
	1,2-Dibromoethane	5	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	1,2-Dichloroethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	1,2-Dichloropropene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	1,3-Dichloropropene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	2,2-Dichloropropene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	2-Butanone	--	11	12	5.2	18	11	5.2	9.2	5.6 U	6.4 U	10	780	13	27	16				
	2-Chlorotoluene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	2-Hexanone	--	4.6 U	5.6 U	4.8 U	5.2 U	5.2 U	4.6 U	6.5 U	5.6 U	6.4 U	6.4 U	470 U	5.5 U	6.1 U	6.2 U				
	4-Chlorotoluene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	4-Isopropyltoluene	--	0.9 U	1.1 U	1.0 U	6.0	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.3				
	4-Methyl-2-pentanone	--	4.6 U	5.6 U	4.8 U	5.2 U	5.2 U	4.6 U	6.5 U	5.6 U	6.4 U	6.4 U	470 U	5.5 U	6.1 U	6.2 U				
	Acetone	--	77	70	83	160	85	41 U	66	29 U	51 U	90	6500	92	6.1 U	110				
	Benzene	30	0.9 U	1.2	1.0 U	2.0	1.0 U	0.9 U	1.6	1.1 U	1.8	1.3 U	260	1.7	50	6.0				
	Bromobenzene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Bromochloromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Bromodichloromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Bromoform	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Bromomethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Carbon disulfide	--	1.8	11	1.2	4.9	1.4	1.2	8.6	1.1 U	1.3 U	17	93 U	30	3.3	10				
	Carbon tetrachloride	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Chloroethane	--	1.5	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Chloroform	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Chloromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	cis-1,2-Dichloroethene	--	0.9 U	2.2	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	cis-1,3-Dichloropropene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Dibromochloromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Dibromomethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Dichlorodifluoromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Dichloromethane	20	2.1 U	2.6 U	1.9 U	2.1 U	2.1 U	1.8 U	2.6 U	2.2 U	2.5 U	2.6 U	190 U	2.5 U	2.6	2.5 U				
	Ethylbenzene	6000	0.9 U	1.1 U	1.0 U	6.0	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	60	7.4				
	Isopropylbenzene	--	0.9 U	1.1 U	1.0 U	19	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	34	5.0				
	n-Butylbenzene	--	0.9 U	1.1 U	1.0 U	4.4	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	22	20				
	n-Propylbenzene	--	0.9 U	1.1 U	1.0 U	9.9	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	120	28				
	sec-Butylbenzene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	5.4				
	Styrene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	tert-Butylbenzene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	tert-Butylmethylether	100	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Tetrachloroethene	50	3.7	1.3	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Toluene	7000	0.9 U	1.1 U	1.8	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	5.5	1.2 U				
	trans-1,2-Dichloroethene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	trans-1,3-Dichloropropene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Trichloroethene	30	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Trichlorofluoromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	Vinyl chloride	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U				
	m,p-Xylenes	--	0.9 U	1.1 U	3.6	47	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	290	1.5	160	13				
	o-Xylene	--	0.9 U	1.1 U	1.8	26	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	100	1.1 U	5.1	1.2 U				

**Table 3
Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

Location ID Sample ID Sample Date Depth Interval Sample Matrix Sample Type	MTCA A Industrial	DSI-08	DSI-08	DSI-09	DSI-09	DSI-10	DSI-10	DSI-11	DSI-11	DSI-12	DSI-12
		DSI08-SO-A 9/28/2006 0-3 ft SO N	DSI08-SO-B 9/28/2006 3-5 ft SO N	DSI09-SO-A 9/28/2006 0-3 ft SO N	DSI09-SO-B 9/28/2006 3-5 ft SO N	DSI10-SO-A 9/28/2006 0-3 ft SO N	DSI10-SO-B 9/28/2006 3-5 ft SO N	DSI11-SO-A 9/28/2006 0-3 ft SO N	DSI11-SO-B 9/28/2006 3-5 ft SO N	DSI12-SO-A 9/28/2006 0-3 ft SO N	DSI12-SO-B 9/28/2006 3-5 ft SO N
Conventionals (%)											
Total solids	--	70.40	92.90	92.60	89.60	69.70	95.30	76.10	93.70	87.70	86.70
Total Organic Carbon	--	0.661	0.133	0.939	2.35	1.30	0.147	1.34	0.099	1.25	1.12
TPH (mg/kg)											
TPH - Gasoline Range	30/100 ⁽¹⁾	8.8 U	6.7 U	14	200	8.3 U	6.0 U	8.0	5.9 U	6.6 U	27
TPH - Diesel Range	2000	6.7 U	5.4 U	42	56	16	5.2 U	120	5.5 U	88	170
TPH - Motor Oil Range	2000	21	11 U	87	110	39	10 U	180	11 U	130	240
Metals (mg/kg)											
Arsenic	20	4.8	0.7	3.7	20.2	6.2	1.9	4.4	1.4	17.1	3.3
Cadmium	2	0.3 U	0.2 U	0.3	8.5	0.3 U	0.2 U	0.3	0.2 U	0.2	0.2 U
Chromium	2000	17.7	9.7	17.4	36	20.2	14.2	17.1	11.4	20.1	15.5
Chromium VI	19	0.160 UJ	0.116 UJ	0.117 UJ	0.124 UJ	0.157 UJ	0.117 UJ	2.05 J	0.120 UJ	0.125 UJ	0.123 UJ
Copper	--	31.0	8.5	65.9	3310	29.0	8.8	49.0	8.4	34.2	18.1
Lead	1000	11	2 U	118	4940	8	11	92	2 U	20	6
Mercury	2	0.10	0.05 U	0.31	0.18	0.11	0.04 U	0.76	0.04 U	0.08	0.05 U
Silver	--	0.4 U	0.3 U	0.3 U	1.2	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U
Zinc	--	52.3	30.5	115	5840	43.7	25.2	78.3	23.0	77.4	36.8
Pesticides (µg/kg)											
4,4'-DDD	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	3.3 U
4,4'-DDE	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	3.3 U
4,4'-DDT	4000	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	12 U
Total DDT (U=1/2)	--	4.8 U	4.8 U	4.8 U	4.95 U	4.95 U	4.95 U	4.8 U	4.95 U	4.95 U	9.3 U
Aldrin	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
alpha-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
beta-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	4.0 U	3.1 U
delta-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
gamma-BHC (Lindane)	10	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
alpha-Chlordane	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
gamma-Chlordane	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
Dieldrin	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	3.3 U
Endosulfan I	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
Endosulfan II	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	3.3 U
Endosulfan Sulfate	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	19 U	21 U
Endrin	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	14 U	17 U
Endrin aldehyde	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	3.3 U
Endrin ketone	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	15 U	16 U
Heptachlor	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
Heptachlor Epoxide	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	3.8 U
Methoxychlor	--	16 U	16 U	16 U	16 U	16 U	17 U	16 U	16 UJ	16 U	16 U
Toxaphene	--	160 U	160 U	160 U	160 U	160 U	170 U	160 U	160 UJ	160 U	160 U
PCBs (µg/kg)											
Aroclor 1016	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
Aroclor 1221	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
Aroclor 1232	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
Aroclor 1242	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
Aroclor 1248	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
Aroclor 1254	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
Aroclor 1260	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	35	9.9 U	29 U	29 U
Total PCBs (U=1/2)	10000	34.3 U	33.2 U	33.6 U	34.3 U	34.3 U	32.9 U	64.4	34.6 U	102 U	102 U
SVOCs (µg/kg)											

**Table 3
Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**


Location ID Sample ID Sample Date Depth Interval Sample Matrix Sample Type	MTCA A Industrial	DSI-08	DSI-08	DSI-09	DSI-09	DSI-10	DSI-10	DSI-11	DSI-11	DSI-12	DSI-12
		DSI08-SO-A 9/28/2006 0-3 ft SO N	DSI08-SO-B 9/28/2006 3-5 ft SO N	DSI09-SO-A 9/28/2006 0-3 ft SO N	DSI09-SO-B 9/28/2006 3-5 ft SO N	DSI10-SO-A 9/28/2006 0-3 ft SO N	DSI10-SO-B 9/28/2006 3-5 ft SO N	DSI11-SO-A 9/28/2006 0-3 ft SO N	DSI11-SO-B 9/28/2006 3-5 ft SO N	DSI12-SO-A 9/28/2006 0-3 ft SO N	DSI12-SO-B 9/28/2006 3-5 ft SO N
1,2,3-Trichlorobenzene	--	6.4 U	5.7 U	5.2 U	5.0 UJ-	6.0 U	5.1 U	5.6 U	5.3 U	4.9 U	5.4 U
1,2,4-Trichlorobenzene	--	6.4 U	5.7 U	5.2 U	5.0 UJ-	6.0 U	5.1 U	5.6 U	5.3 U	4.9 U	5.4 U
1,2,4-Trimethylbenzene	--	1.3 U	1.2 U	1.0 U	1.4 J-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
1,2-Dichlorobenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
1,3,5-Trimethylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
1,3-Dichlorobenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
1,4-Dichlorobenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
2,4-Dimethylphenol	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	5.0	4.9 U	47	34	7.8	5.0 U	19	4.8 U	230	300
2-Methylphenol	--	--	--	--	--	--	--	--	--	--	--
4-Methylphenol	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	--	5.0 U	4.9 U	82	30	4.8 U	5.0 U	6.9	4.8 U	37 U	45
Acenaphthylene	--	5.0 U	4.9 U	14	5.4	4.8 U	5.0 U	14	4.8 U	880	1700
Anthracene	--	5.0 U	4.9 U	87	19	11	5.0 U	18	4.8 U	290	450
Benzo(a)anthracene	--	12	4.9 U	160	27	18	5.0 U	54	4.8 U	1800	3600
Benzo(a)pyrene	2000	12	4.9 U	180	23	15	5.0 U	61	4.8 U	3000	7900
Benzo(b)fluoranthene	--	18	4.9 U	240	35	20	5.0 U	73	4.8 U	1700	3400
Benzo(g,h,i)perylene	--	8.4	4.9 U	110	9.9	6.3	5.0 U	37	4.8 U	1300	2900
Benzo(k)fluoranthene	--	13	4.9 U	230	26	18	5.0 U	67	4.8 U	2100	5600
Benzoic acid	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	--	--	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--
Butylbenzylphthalate	--	--	--	--	--	--	--	--	--	--	--
Chrysene	--	22	4.9 U	280	54	23	5.0 U	87	4.8 U	3000	7500
Dibenzo(a,h)anthracene	--	5.0 U	4.9 U	38	5.0 U	4.8 U	5.0 U	8.4	4.8 U	390	900
Dibenzofuran	--	5.0 U	4.9 U	32	18	6.8	5.0 U	7.9	4.8 U	37 U	38 U
Diethylphthalate	--	--	--	--	--	--	--	--	--	--	--
Dimethylphthalate	--	--	--	--	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--
Di-n-octylphthalate	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	--	37	4.9 U	480	91	61	5.0 U	120	4.8 U	2500	6000
Fluorene	--	5.0 U	4.9 U	88	35	7.3	5.0 U	7.9	4.8 U	67	53
Hexachlorobenzene	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
Hexachlorobutadiene	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
Hexachloroethane	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	7.4	4.9 U	110	9.4	6.3	5.0 U	35	4.8 U	1200	2700
Naphthalene	5000	5.0 U	4.9 U	74	58	7.3	5.0 U	24	4.8 U	340	470
n-Nitrosodiphenylamine	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	26	4.9 U	370	140	27	5.0 U	54	4.8 U	510	640
Phenol	--	--	--	--	--	--	--	--	--	--	--
Pyrene	--	32	4.9 U	400	110	51	5.0 U	120	4.8 U	4000	10000
Total PAHs (U=1/2)	--	203	39.2 U	2943	675	278	40 U	787	38.4 U	23096	53858
Volatiles (µg/kg)											
1,1,1,2-Tetrachloroethane	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
1,1,1-Trichloroethane	2000	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
1,1,2,2-Tetrachloroethane	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
1,1,2-Trichloroethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
1,1-Dichloroethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
1,1-Dichloroethene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U

**Table 3
Summary of Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels**

Location ID	Sample ID	Sample Date	Depth Interval	Sample Matrix	Sample Type	MTCA A Industrial	DSI-08	DSI-08	DSI-09	DSI-09	DSI-10	DSI-10	DSI-11	DSI-11	DSI-12	DSI-12
							DSI08-SO-A 9/28/2006 0-3 ft SO N	DSI08-SO-B 9/28/2006 3-5 ft SO N	DSI09-SO-A 9/28/2006 0-3 ft SO N	DSI09-SO-B 9/28/2006 3-5 ft SO N	DSI10-SO-A 9/28/2006 0-3 ft SO N	DSI10-SO-B 9/28/2006 3-5 ft SO N	DSI11-SO-A 9/28/2006 0-3 ft SO N	DSI11-SO-B 9/28/2006 3-5 ft SO N	DSI12-SO-A 9/28/2006 0-3 ft SO N	DSI12-SO-B 9/28/2006 3-5 ft SO N
	1,1-Dichloropropene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	1,2,3-Trichloropropene	--	2.6 U	2.3 U	2.1 U	2.0 UJ-	2.4 U	2.0 U	2.2 U	2.1 U	2.0 U	2.2 U				
	1,2-Dibromo-3-chloropropene	--	6.4 U	5.7 U	5.2 U	5.0 UJ-	6.0 U	5.1 U	5.6 U	5.3 U	4.9 U	5.4 U				
	1,2-Dibromoethane	5	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	1,2-Dichloroethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	1,2-Dichloropropene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	1,3-Dichloropropene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	2,2-Dichloropropene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	2-Butanone	--	6.6	5.7 U	10	5.0 U	6.5	5.1 U	12	9.4	5.6	5.4 U				
	2-Chlorotoluene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	2-Hexanone	--	6.4 U	5.7 U	5.2 U	5.0 UJ-	6.0 U	5.1 U	5.6 U	5.3 U	4.9 U	5.4 U				
	4-Chlorotoluene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	4-Isopropyltoluene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	4-Methyl-2-pentanone	--	6.4 U	5.7 U	5.2 U	5.0 U	6.0 U	5.1 U	5.6 U	5.3 U	4.9 U	5.4 U				
	Acetone	--	62	49	100	55	55	35 U	96	70	57	45				
	Benzene	30	1.3 U	1.2 U	1.0	1.3	1.2 U	1.0 U	2.3	1.1 U	1.4	3.0				
	Bromobenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Bromochloromethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Bromodichloromethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Bromoform	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Bromomethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Carbon disulfide	--	1.3 U	1.2 U	1.0 U	1.6	1.2 U	1.0	1.9	15	1.0 U	1.1 U				
	Carbon tetrachloride	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Chloroethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Chloroform	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Chloromethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	cis-1,2-Dichloroethene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	cis-1,3-Dichloropropene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Dibromochloromethane	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Dibromomethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Dichlorodifluoromethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Dichloromethane	20	2.8	2.3 U	2.1 U	2.0 U	2.4 U	2.3	2.2 U	2.1 U	2.0 U	2.2 U				
	Ethylbenzene	6000	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Isopropylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	n-Butylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	n-Propylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	sec-Butylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Styrene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	tert-Butylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	tert-Butylmethylether	100	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Tetrachloroethene	50	3.6	1.4	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Toluene	7000	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	3.4				
	trans-1,2-Dichloroethene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	trans-1,3-Dichloropropene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Trichloroethene	30	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Trichlorofluoromethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	Vinyl chloride	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	m,p-Xylenes	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				
	o-Xylene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U				

Table 3
Notes

Qualifiers:

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

Notes:

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

**Table 4
Summary of Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels**

Location ID Sample ID Sample Date Sample Matrix Sample Type	MTCA A Industrial	DSI-01 DSI01-GW 9/27/2006 WG N	DSI-02 DSI02-GW 9/27/2006 WG N	DSI-03 DSI03-GW 9/27/2006 WG N	DSI-04 DSI04-GW 9/27/2006 WG N	DSI-05 DSI05-GW 9/27/2006 WG N	DSI-06 DSI06-GW 9/27/2006 WG N	DSI-07 DSI07-GW 9/28/2006 WG N	DSI-07 DSI07-GW 9/28/2006 WG FD	DSI-08 DSI08-GW 9/28/2006 WG N	DSI-09 DSI09-GW 9/28/2006 WG N	DSI-10 DSI10-GW 9/28/2006 WG N	DSI-11 DSI11-GW 9/28/2006 WG N	DSI-12 DSI12-GW 9/28/2006 WG N	MW-4 MW-4-GW-060929 9/29/2006 WG N	MW-5 MW-5-GW-060929 9/29/2006 WG N	
TPH (mg/L)																	
TPH - Gasoline Range	800/1000 ⁽¹⁾	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	2.0	2.2	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
TPH - Diesel Range	500	0.25 U	0.25 U	0.93	0.25 U	0.25 U	0.25 U	1.9	1.9	0.25 U	0.25 U	0.25 U	3.2	0.63	0.35	0.25 U	0.25 U
TPH - Motor Oil Range	500	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Metals-dissolved (µg/L)																	
Arsenic	--	68.4	2.4	1.5	2.2	0.6	1.8	3.8	4.2	1.4	1.6	0.8	0.8	5.0	1.0	3.4	
Cadmium	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chromium	--	0.5 UJ	0.5 U	2 U	2 U	2 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	1 U	42	
Copper	--	0.5 U	0.5 U	0.8	0.7	0.5 U	0.5 U	0.6	1.1	0.7	0.9	0.5 U	0.5 U	0.5 U	0.5 U	14.3	
Lead	--	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
Mercury	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Silver	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4
Zinc	--	5	4 U	13	4 U	7	5	6	7	4 U	44	7	8	4 U	4	8	
Metals-total (µg/L)																	
Arsenic	5	84.4	16.4	9.5	11.2	2	2.3	9.5	7.2	11.8	2.6	2.4	6.7	32.5	1.0	4.9	
Cadmium	5	0.3	0.3	0.2	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.3	1.6	0.3	0.2 U	0.2 U	
Chromium	50	7	49	38	29	6	2 U	21	14	37	5 U	5	34	20	1 U	54	
Copper	--	18.5	86.7	53	55.6	15.2	7.5	39.1	24	70.4	34.4	26.1	49.2	126	0.5 U	29	
Lead	15	3	11	8	13	6	2	6	5	12	55	14	10	27	1 U	2	
Mercury	2	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.12	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Silver	--	0.2 UJ	0.3	0.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.2	0.2 U	0.2 U	0.2	0.2 U	0.8	
Zinc	--	33	137	147	92	25	9	61	42	103	98	19	154	109	4	14	
Pesticides (µg/L)																	
4,4'-DDD	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDE	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDT	0.3	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Total DDT (U=1/2)	--	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Aldrin	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
alpha-BHC	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
beta-BHC	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
delta-BHC	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
gamma-BHC (Lindane)	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.018 U	0.0050 U	0.0050 U	0.0050 U
alpha-Chlordane	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
gamma-Chlordane	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Dieldrin	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan I	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Endosulfan II	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan Sulfate	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin aldehyde	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin ketone	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Heptachlor	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Heptachlor Epoxide	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Methoxychlor	--	0.054 U	0.056 U	0.055 U	0.054 U	0.053 U	0.055 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Toxaphene	--	0.54 U	0.56 U	0.55 U	0.54 U	0.53 U	0.55 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table 4
Summary of Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels

Location ID Sample ID Sample Date Sample Matrix Sample Type	MTCA A Industrial	DSI-01	DSI-02	DSI-03	DSI-04	DSI-05	DSI-06	DSI-07	DSI-07	DSI-08	DSI-09	DSI-10	DSI-11	DSI-12	MW-4	MW-5
		DSI01-GW 9/27/2006 WG N	DSI02-GW 9/27/2006 WG N	DSI03-GW 9/27/2006 WG N	DSI04-GW 9/27/2006 WG N	DSI05-GW 9/27/2006 WG N	DSI06-GW 9/27/2006 WG N	DSI07-GW 9/28/2006 WG N	DSI07-GW 9/28/2006 WG FD	DSI08-GW 9/28/2006 WG N	DSI09-GW 9/28/2006 WG N	DSI10-GW 9/28/2006 WG N	DSI11-GW 9/28/2006 WG N	DSI12-GW 9/28/2006 WG N	MW-4-GW-060929 9/29/2006 WG N	MW-5-GW-060929 9/29/2006 WG N
PCBs (µg/L)																
Aroclor 1016	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1221	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.080 U	0.080 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1232	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.040 U	0.080 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1242	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1248	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1254	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1260	--	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ
Total PCBs (U=1/2)	0.1	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.11 U	0.13 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
SVOCs (µg/L)																
1,2,3-Trichlorobenzene	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5 U
1,2,4-Trichlorobenzene	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5 U
1,2,4-Trimethylbenzene	--	0.2 U	0.4	0.2 U	0.2 U	0.2 U	0.2 U	24	26	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,2-Dichlorobenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,3,5-Trimethylbenzene	--	0.2 U	0.3	0.2 U	0.2 U	0.2 U	0.2 U	10	12	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,3-Dichlorobenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,4-Dichlorobenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
2-Methylnaphthalene	--	0.10 U	0.07 U	0.11	0.02 U	0.12	0.06 U	32	28	0.06 U	0.08 U	0.06 U	0.07 U	0.47	1.3	0.01 U
Acenaphthene	--	0.07	0.03	0.01	0.01 U	0.06	0.09	0.54	0.53	0.01 J	0.05	0.11	0.22	2.2	2.9	0.01 U
Acenaphthylene	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 J	0.06	0.06	0.01 U	0.01 U	0.01 U	0.02	1.8	0.08	0.01 U
Anthracene	--	0.02	0.01 J	0.02	0.01 U	0.01 J	0.01 J	0.03	0.03	0.01 J	0.02	0.01 U	0.01	2.6	0.14	0.01 U
Benzo(a)anthracene	--	0.01 J	0.01 U	0.03	0.01 U	0.01 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01	0.01 U	0.01 U	3.4	0.01 U	0.01 U
Benzo(a)pyrene	0.1	0.01 U	0.01 U	0.02	0.01 U	0.01 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 J	0.01 U	0.01 U	3.5	0.01 U	0.01 U
Benzo(b)fluoranthene	--	0.01 U	0.01 U	0.02	0.01 U	0.01 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 J	0.01 J	0.01 U	2.0	0.01 U	0.01 U
Benzo(g,h,i)perylene	--	0.01 U	0.01 U	0.01 J	0.01 U	0.01 J	0.01 U	0.01 J	0.01 U	0.01 U	0.01 U	0.01 J	0.01 U	1.9	0.01 U	0.01 U
Benzo(k)fluoranthene	--	0.01 U	0.01 U	0.03	0.01 U	0.01 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 J	0.01 J	0.01 U	2.2	0.01 U	0.01 U
Chrysene	--	0.01	0.01 J	0.06	0.01 U	0.02	0.01 J	0.01 J	0.01 J	0.01 J	0.02	0.02	0.01 J	5.0	0.01 U	0.01 U
Dibenzo(a,h)anthracene	--	0.01 U	0.01 U	0.01 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.65	0.01 U	0.01 U
Dibenzofuran	--	0.03	0.01	0.01	0.01 U	0.01 J	0.01 J	0.14	0.14	0.01 J	0.01 J	0.01 U	0.03	0.44	0.13	0.01 U
Fluoranthene	--	0.05	0.02	0.02	0.01	0.02	0.03	0.02	0.02	0.02	0.04	0.01 J	0.03	8.5	0.13	0.01 J
Fluorene	--	0.06	0.03	0.02	0.01 U	0.01	0.03	0.57	0.54	0.01 J	0.03	0.01 J	0.16	3.3	2.0	0.01 J
Hexachlorobenzene	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Hexachlorobutadiene	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	--	--
Indeno(1,2,3-cd)pyrene	--	0.01 U	0.01 U	0.01 J	0.01 U	0.01 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1.5	0.01 U	0.01 U
Naphthalene	160	0.12	0.12	0.13	0.07	0.16	0.15	4.7	4.2	0.08	0.10	0.10	0.20	1.2	8.7	0.01 J
Phenanthrene	--	0.14	0.05	0.06	0.01	0.04	0.04	0.31	0.31	0.03	0.13	0.02	0.04	5.6	0.15	0.02
Pyrene	--	0.04	0.02	0.01	0.01 J	0.02	0.05	0.02	0.02	0.01	0.05	0.01	0.02	11	0.07	0.01 J
Total PAHs (U=1/2)	--	0.55	0.33	0.46	0.16	0.41	0.45	6.3	5.75	0.22	0.5	0.34	0.74	56.4	14.2	0.11
Volatiles (µg/L)																
1,1,1,2-Tetrachloroethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,1,1-Trichloroethane	200	1.0	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,1,2,2-Tetrachloroethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,1,2-Trichloroethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,1-Dichloroethane	--	0.2	0.2 U	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.6 U
1,1-Dichloroethene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,1-Dichloropropene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,2,3-Trichloropropane	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5 U
1,2-Dibromo-3-chloropropane	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5 U
1,2-Dibromoethane	0.01	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,2-Dichloroethane	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,2-Dichloropropane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,3-Dichloropropane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
2,2-Dichloropropane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
2-Butanone	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
2-Chlorotoluene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
2-Hexanone	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	9.0 U
4-Chlorotoluene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U

**Table 4
Summary of Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels**

Location ID Sample ID Sample Date Sample Matrix Sample Type	MTCA A Industrial	DSI-01	DSI-02	DSI-03	DSI-04	DSI-05	DSI-06	DSI-07	DSI-07	DSI-08	DSI-09	DSI-10	DSI-11	DSI-12	MW-4	MW-5
		DSI01-GW 9/27/2006 WG N	DSI02-GW 9/27/2006 WG N	DSI03-GW 9/27/2006 WG N	DSI04-GW 9/27/2006 WG N	DSI05-GW 9/27/2006 WG N	DSI06-GW 9/27/2006 WG N	DSI07-GW 9/28/2006 WG N	DSI07-GW 9/28/2006 WG FD	DSI08-GW 9/28/2006 WG N	DSI09-GW 9/28/2006 WG N	DSI10-GW 9/28/2006 WG N	DSI11-GW 9/28/2006 WG N	DSI12-GW 9/28/2006 WG N	MW-4-GW-060929 9/29/2006 WG N	MW-5-GW-060929 9/29/2006 WG N
4-Isopropyltoluene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
4-Methyl-2-pentanone	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
Acetone	--	5.4	8.0	6.3	3.8	3.0 U	3.8	3.0 U	5.5	4.7	4.7	6.3	6.3	4.1	9.0 U	
Benzene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.6	180	210	0.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Bromobenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Bromochloromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Bromodichloromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Bromoform	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Bromomethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Carbon disulfide	--	0.2	0.6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U	0.2 U	0.6 U
Carbon tetrachloride	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Chloroethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Chloroform	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Chloromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
cis-1,2-Dichloroethene	--	0.5	0.2 U	0.2	0.6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
cis-1,3-Dichloropropene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Dibromochloromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Dibromomethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Dichlorodifluoromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Dichloromethane	5	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3	0.9 U
Ethylbenzene	700	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	10	11	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Isopropylbenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	25	28	0.2 U	0.2 U	0.2 U	0.5	0.5	0.2 U	0.6 U
n-Butylbenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	14	13	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
n-Propylbenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	94	110	0.2 U	0.2 U	0.2 U	0.5	0.5	0.2 U	0.6 U
sec-Butylbenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	8.2	8.5	0.2 U	0.2 U	0.2 U	0.2	0.2	0.2 U	0.6 U
Styrene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
tert-Butylbenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
tert-Butylmethylether	20	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Tetrachloroethene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Toluene	1000	0.5	0.7	0.6	0.5	0.4	0.4	4.4	4.6	0.4	0.4	0.7	0.5	0.4	0.2 U	0.6 U
trans-1,2-Dichloroethene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
trans-1,3-Dichloropropene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Trichloroethene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Trichlorofluoromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Vinyl chloride	0.2	0.2 U	0.2 U	0.2 U	0.6	0.3	0.2 U	0.2 U	0.2 U	0.4	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
m,p-Xylenes	1000	0.4 U	0.5	0.5	0.4 U	0.4 U	0.4	6.4	7.1	0.4 U	0.4 U	0.4 U	0.5	0.5	0.4 U	1.2 U
o-Xylene	--	0.2 U	0.2	0.2	0.2 U	0.2 U	0.2	0.2 U	0.9	0.2 U	0.2 U	0.2 U	0.3	0.3	0.2 U	0.6 U

Qualifiers:

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

Notes:

- No numerical criterion of this type for this chemical
- MTCA Model Toxics Control Act (WAC 173-340)
- HPAH High molecular weight polycyclic aromatic hydrocarbon
- LPAH Low molecular weight polycyclic aromatic hydrocarbon
- mg/L milligrams per liter
- µg/L micrograms per liter
- 1 If benzene is present, the cleanup level is 800 mg/L. If benzene is not present, the cleanup level is 1,000 mg/L.

Table 5
Summary of Analytical Results for Selected Soil Samples (Organic Carbon Normalized) and Comparison with Washington Sediment Management Standards

Location ID	Sample ID	Sample Date	Depth Interval	Sample Matrix	Sample Type	SMS SQS	SMS CSL	DSI-09	DSI-09	DSI-10	DSI-10	DSI-11	DSI-11	DSI-12	DSI-12	DSI-22
								DSI09-SO-A	DSI09-SO-B	DSI10-SO-A	DSI10-SO-B	DSI11-SO-A	DSI11-SO-B	DSI12-SO-A	DSI12-SO-B	DSI22-CB-060929
								9/28/2006	9/28/2006	9/28/2006	9/28/2006	9/28/2006	9/28/2006	9/28/2006	9/28/2006	9/29/2006
								0-3 ft	3-5 ft	0-3 ft	3-5 ft	0-3 ft	3-5 ft	0-3 ft	3-5 ft	
								SO	SO	SO	SO	SO	SO	SO	SO	SE
								N	N	N	N	N	N	N	N	N
Conventionals (%)																
	Total solids	--	--	92.60	89.60	69.70	95.30	76.10	93.70	87.70	86.70	67.00				
	Total Organic Carbon	--	--	0.939	2.35	1.30	0.147	1.34	0.099	1.25	1.12	3.28				
Metals (mg/kg)																
	Arsenic	57	93	3.7	20.2	6.2	1.9	4.4	1.4	17.1	3.3	29.7 J				
	Cadmium	5.1	6.7	0.3	8.5 * #	0.3 U	0.2 U	0.3	0.2 U	0.2	0.2 U	2				
	Chromium	260	270	17.4	36	20.2	14.2	17.1	11.4	20.1	15.5	87				
	Chromium VI			0.117 UJ	0.124 UJ	0.157 UJ	0.117 UJ	2.05 J	0.120 UJ	0.125 UJ	0.123 UJ	--				
	Copper	390	390	65.9	3310 * #	29.0	8.8	49.0	8.4	34.2	18.1	2450 * #				
	Lead	450	530	118	4940 * #	8	11	92	2 U	20	6	350 J				
	Mercury	0.41	0.59	0.31	0.18	0.11	0.04 U	0.76 * #	0.04 U	0.08	0.05 U	1.05 * #				
	Silver	6.1	6.1	0.3 U	1.2	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U	2 U				
	Zinc	410	960	115	5840 * #	43.7	25.2	78.3	23.0	77.4	36.8	2600 * #				
PCBs (mg/kg-OC)																
	Total PCBs (SMS)	12	65	1.02 U	0.417 U	0.754 U	6.39 U	2.61	10 U	2.32 U	2.59 U	11.9 U				
LPAH (mg/kg-OC)																
	Naphthalene	99	170	7.88	2.47	0.562	3.4 U	1.79	4.85 U	27.2	42	12.5				
	Acenaphthylene	66	66	1.49	0.23	0.369 U	3.4 U	1.04	4.85 U	70.4 * #	152 * #	1.8 U				
	Acenaphthene	16	57	8.73	1.28	0.369 U	3.4 U	0.515	4.85 U	2.96 U	4.02	22.6 J *				
	Fluorene	23	79	9.37	1.49	0.562	3.4 U	0.59	4.85 U	5.36	4.73	17.7				
	Phenanthrene	100	480	39.4	5.96	2.08	3.4 U	4.03	4.85 U	40.8	57.1	67.1				
	Anthracene	220	1200	9.27	0.809	0.846	3.4 U	1.34	4.85 U	23.2	40.2	13.4				
	2-Methylnaphthalene	38	64	5.01	1.45	0.6	3.4 U	1.42	4.85 U	18.4	26.8	4.88				
	Total LPAH (SMS)	370	780	76.1	12.2	4.05	3.4 U	9.33	4.85 U	167	300	133				
HPAH (mg/kg-OC)																
	Fluoranthene	160	1200	51.1	3.87	4.69	3.4 U	8.96	4.85 U	200 *	536 *	97.6				
	Pyrene	1000	1400	42.6	4.68	3.92	3.4 U	8.96	4.85 U	320	893	79.3 J				
	Benzo(a)anthracene	110	270	17	1.15	1.38	3.4 U	4.03	4.85 U	144 *	321 * #	14.6				
	Chrysene	110	460	29.8	2.3	1.77	3.4 U	6.49	4.85 U	240 *	670 * #	39.6				
	Benzo(a)pyrene	99	210	19.2	0.979	1.15	3.4 U	4.55	4.85 U	240 * #	705 * #	21				
	Indeno(1,2,3-cd)pyrene	34	88	11.7	0.4	0.485	3.4 U	2.61	4.85 U	96 * #	241 * #	8.54				
	Dibenzo(a,h)anthracene	12	33	4.05	0.213 U	0.369 U	3.4 U	0.627	4.85 U	31.2 *	80.4 * #	2.44				
	Benzo(g,h,i)perylene	31	78	11.7	0.421	0.485	3.4 U	2.76	4.85 U	104 * #	259 * #	9.76				
	Total benzofluoranthenes (SMS)	230	450	50.1	2.6	2.92	3.4 U	10.4	4.85 U	304 *	804 * #	50.9				
	Total HPAH (SMS)	960	5300	237	16.4	16.8	3.4 U	49.4	4.85 U	1679 *	4509 *	324				
Chlorinated Hydrocarbons (mg/kg-OC)																
	1,4-Dichlorobenzene	3.1	9	0.106 U	0.0426 UJ-	0.0923 U	0.68 U	0.0821 U	1.11 U	0.08 U	0.0982 U	1.8 U				
	1,2-Dichlorobenzene	2.3	2.3	0.106 U	0.0426 UJ-	0.0923 U	0.68 U	0.0821 U	1.11 U	0.08 U	0.0982 U	1.8 U				
	1,2,4-Trichlorobenzene	0.81	1.8	0.554 U	0.213 UJ-	0.462 U	3.47 U	0.418 U	5.35 U	0.392 U	0.482 U	1.8 U				
	Hexachlorobenzene	0.38	2.3	0.17 U	0.0681 U	0.123 U	1.16 U	0.119 U	1.62 UJ	0.128 U	0.143 U	1.8 U				
Phthalates (mg/kg-OC)																
	Dimethylphthalate	53	53	NA	NA	NA	NA	NA	NA	NA	NA	1.8 U				
	Diethylphthalate	61	110	NA	NA	NA	NA	NA	NA	NA	NA	1.8 U				
	Di-n-butylphthalate	220	1700	NA	NA	NA	NA	NA	NA	NA	NA	5.49				
	Butylbenzylphthalate	4.9	64	NA	NA	NA	NA	NA	NA	NA	NA	14.3 *				
	bis(2-Ethylhexyl)phthalate	47	78	NA	NA	NA	NA	NA	NA	NA	NA	488 * #				
	Di-n-octylphthalate	58	4500	NA	NA	NA	NA	NA	NA	NA	NA	24.4				
Misc Extractables (mg/kg-OC)																
	Dibenzofuran	15	58	3.41	0.766	0.523	3.4 U	0.59	4.85 U	2.96 U	3.39 U	14.6				
	Hexachlorobutadiene	3.9	6.2	0.17 U	0.0681 U	0.123 U	1.16 U	0.119 U	1.62 UJ	0.128 U	0.143 U	1.8 U				
	n-Nitrosodiphenylamine	11	11	NA	NA	NA	NA	NA	NA	NA	NA	3.96 UJ				

**Table 5
Summary of Analytical Results for Selected Soil Samples (Organic Carbon Normalized) and Comparison with Washington Sediment Management Standards**

Location ID Sample ID Sample Date Depth Interval Sample Matrix Sample Type	SMS SQS	SMS CSL	DSI-09	DSI-09	DSI-10	DSI-10	DSI-11	DSI-11	DSI-12	DSI-12	DSI-22	
			DSI09-SO-A 9/28/2006 0-3 ft SO N	DSI09-SO-B 9/28/2006 3-5 ft SO N	DSI10-SO-A 9/28/2006 0-3 ft SO N	DSI10-SO-B 9/28/2006 3-5 ft SO N	DSI11-SO-A 9/28/2006 0-3 ft SO N	DSI11-SO-B 9/28/2006 3-5 ft SO N	DSI12-SO-A 9/28/2006 0-3 ft SO N	DSI12-SO-B 9/28/2006 3-5 ft SO N	DSI22-CB-060929 9/29/2006 SE N	
Phenols (µg/kg)												
Phenol	420	1200	NA	NA	NA	NA	NA	NA	NA	NA	NA	140 J
2-Methylphenol	63	63	NA	NA	NA	NA	NA	NA	NA	NA	NA	59 U
4-Methylphenol	670	670	NA	NA	NA	NA	NA	NA	NA	NA	NA	96
2,4-Dimethylphenol	29	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	59 U
Pentachlorophenol	360	690	NA	NA	NA	NA	NA	NA	NA	NA	NA	290 UJ
Misc Extractables (µg/kg)												
Benzyl alcohol	57	73	NA	NA	NA	NA	NA	NA	NA	NA	NA	240 U
Benzoic acid	650	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	590 U
Dibenzofuran	--	--	32	18	6.8	5.0 U	7.9	4.8 U	37 U	38 U		480
Hexachloroethane	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	59 U
Hexachlorobutadiene	--	--	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U		59 U
n-Nitrosodiphenylamine	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	130 UJ

Qualifiers:

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

Notes:

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

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

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

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

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

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

Table 6
Summary of Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria

Location ID Sample ID Sample Date Sample Matrix Sample Type	Washington Marine Chronic	Washington Marine Acute	DSI-06 DSI06-GW 9/27/2006 WG N	DSI-07 DSI07-GW 9/28/2006 WG N	DSI-07 DSI57-GW 9/28/2006 WG FD	DSI-08 DSI08-GW 9/28/2006 WG N	DSI-09 DSI09-GW 9/28/2006 WG N	DSI-10 DSI10-GW 9/28/2006 WG N	DSI-11 DSI11-GW 9/28/2006 WG N	DSI-12 DSI12-GW 9/28/2006 WG N
TPH (mg/L)										
TPH - Gasoline Range	--	--	0.25 U	2.0	2.2	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
TPH - Diesel Range	--	--	0.25 U	1.9	1.9	0.25 U	0.25 U	0.25 U	3.2	0.63
TPH - Motor Oil Range	--	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Metals-dissolved (µg/L)										
Arsenic	36	69	1.8	3.8	4.2	1.4	1.6	0.8	0.8	5.0
Cadmium	9.3	42	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chromium	--	--	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U
Copper	3.1	4.8	0.5 U	0.6	1.1	0.7	0.9	0.5 U	0.5 U	0.5 U
Lead	8.1	210	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Mercury	0.025	1.8	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Silver	--	1.9	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Zinc	81	90	5	6	7	4 U	44	7	8	4 U
Metals-total (µg/L)										
Arsenic	--	--	2.3	9.5	7.2	11.8	2.6	2.4	6.7	32.5
Cadmium	--	--	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.3	1.6	0.3
Chromium	--	--	2 U	21	14	37	5 U	5	34	20
Copper	--	--	7.5	39.1	24	70.4	34.4	26.1	49.2	126
Lead	--	--	2	6	5	12	55	14	10	27
Mercury	--	--	0.1 U	0.10 U	0.10 U	0.12	0.10 U	0.10 U	0.10 U	0.12
Silver	--	--	0.2 U	0.2 U	0.2 U	0.4	0.2	0.2 U	0.2 U	0.2
Zinc	--	--	9	61	42	103	98	19	154	109
Pesticides (µg/L)										
4,4'-DDD	0.001	0.13	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDE	0.001	0.13	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDT	0.001	0.13	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Total DDT (U=1/2)	--	--	0.017 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Aldrin	0.0019	0.71	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
alpha-BHC	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
beta-BHC	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
delta-BHC	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
gamma-BHC (Lindane)	--	0.16	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.018 U
alpha-Chlordane	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
gamma-Chlordane	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Dieldrin	0.0019	0.71	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan I	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Endosulfan II	--	--	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan Sulfate	--	--	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin	0.0023	0.037	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin aldehyde	--	--	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin ketone	--	--	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Heptachlor	0.0036	0.053	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Heptachlor Epoxide	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Methoxychlor	--	--	0.055 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Toxaphene	0.0002	0.21	0.55 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
PCBs (µg/L)										
Aroclor 1016	--	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1221	--	--	0.020 U	0.080 U	0.080 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1232	--	--	0.020 U	0.040 U	0.080 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1242	--	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1248	--	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1254	--	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1260	--	--	0.020 UJ	0.020 UJ	0.020 UJ	0.020 U	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ
Total PCBs (U=1/2)	0.03	10	0.07 U	0.11 U	0.13 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
SVOCs (µg/L)										
1,2,3-Trichlorobenzene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	--	--	0.2 U	24	26	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	--	--	0.2 U	10	12	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Methylnaphthalene	--	--	0.06 U	32	28	0.06 U	0.08 U	0.06 U	0.07 U	0.47
Acenaphthene	--	--	0.09	0.54	0.53	0.01 J	0.05	0.11	0.22	2.2
Acenaphthylene	--	--	0.01 J	0.06	0.06	0.01 U	0.01 U	0.01 U	0.02	1.8
Anthracene	--	--	0.01 J	0.03	0.03	0.01 J	0.02	0.01 U	0.01	2.6
Benzo(a)anthracene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01	0.01 U	0.01 U	3.4
Benzo(a)pyrene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 J	0.01 U	0.01 U	3.5
Benzo(b)fluoranthene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 J	0.01 J	0.01 U	2.0
Benzo(g,h,i)perylene	--	--	0.01 U	0.01 J	0.01 U	0.01 U	0.01 U	0.01 J	0.01 U	1.9
Benzo(k)fluoranthene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 J	0.01 J	0.01 U	2.2
Chrysene	--	--	0.01 J	0.01 J	0.01 J	0.01 J	0.02	0.02	0.01 J	5.0
Dibenzo(a,h)anthracene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.65
Dibenzofuran	--	--	0.01 J	0.14	0.14	0.01 J	0.01 J	0.01 U	0.03	0.44
Fluoranthene	--	--	0.03	0.02	0.02	0.02	0.04	0.01 J	0.03	8.5
Fluorene	--	--	0.03	0.57	0.54	0.01 J	0.03	0.01 J	0.16	3.3
Hexachlorobenzene	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Hexachlorobutadiene	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Indeno(1,2,3-cd)pyrene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1.5
Naphthalene	--	--	0.15	4.7	4.2	0.08	0.10	0.10	0.20	1.2
Phenanthrene	--	--	0.04	0.31	0.31	0.03	0.13	0.02	0.04	5.6
Pyrene	--	--	0.05	0.02	0.02	0.01	0.05	0.01	0.02	11
Total PAHs (U=1/2)	--	--	0.45	6.3	5.75	0.22	0.5	0.34	0.74	56.4
Volatiles (µg/L)										
1,1,1,2-Tetrachloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Table 6
Summary of Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria

Location ID Sample ID Sample Date Sample Matrix Sample Type	Washington Marine Chronic	Washington Marine Acute	DSI-06	DSI-07	DSI-07	DSI-08	DSI-09	DSI-10	DSI-11	DSI-12
			DSI06-GW 9/27/2006 WG N	DSI07-GW 9/28/2006 WG N	DSI57-GW 9/28/2006 WG FD	DSI08-GW 9/28/2006 WG N	DSI09-GW 9/28/2006 WG N	DSI10-GW 9/28/2006 WG N	DSI11-GW 9/28/2006 WG N	DSI12-GW 9/28/2006 WG N
1,1,2-Trichloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichloropropane	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichloropropane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,2-Dichloropropane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Butanone	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Hexanone	--	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
4-Chlorotoluene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-Isopropyltoluene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-Methyl-2-pentanone	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	--	--	3.8	3.0 U	3.0 U	5.5	4.7	4.7	6.3	6.3
Benzene	--	--	0.6	180	210	0.3	0.2 U	0.2 U	0.2 U	0.2 U
Bromobenzene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromochloromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromodichloromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromoform	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon disulfide	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U
Carbon tetrachloride	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroform	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromochloromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromomethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichlorodifluoromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichloromethane	--	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Ethylbenzene	--	--	0.2 U	10	11	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Isopropylbenzene	--	--	0.2 U	25	28	0.2 U	0.2 U	0.2 U	0.5	0.5
n-Butylbenzene	--	--	0.2 U	14	13	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
n-Propylbenzene	--	--	0.2 U	94	110	0.2 U	0.2 U	0.2 U	0.5	0.5
sec-Butylbenzene	--	--	0.2 U	8.2	8.5	0.2 U	0.2 U	0.2 U	0.2	0.2
Styrene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-Butylbenzene	--	--	0.2 U	0.2 U	0.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-Butylmethylether	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	--	--	0.4	4.4	4.6	0.4	0.4	0.7	0.5	0.4
trans-1,2-Dichloroethene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichlorofluoromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl chloride	--	--	0.2 U	0.2 U	0.2 U	0.4	0.2 U	0.2 U	0.2 U	0.2 U
m,p-Xylenes	--	--	0.4	6.4	7.1	0.4 U	0.4 U	0.4 U	0.5	0.5
o-Xylene	--	--	0.2	0.2 U	0.9	0.2 U	0.2 U	0.2 U	0.3	0.3

Qualifiers:

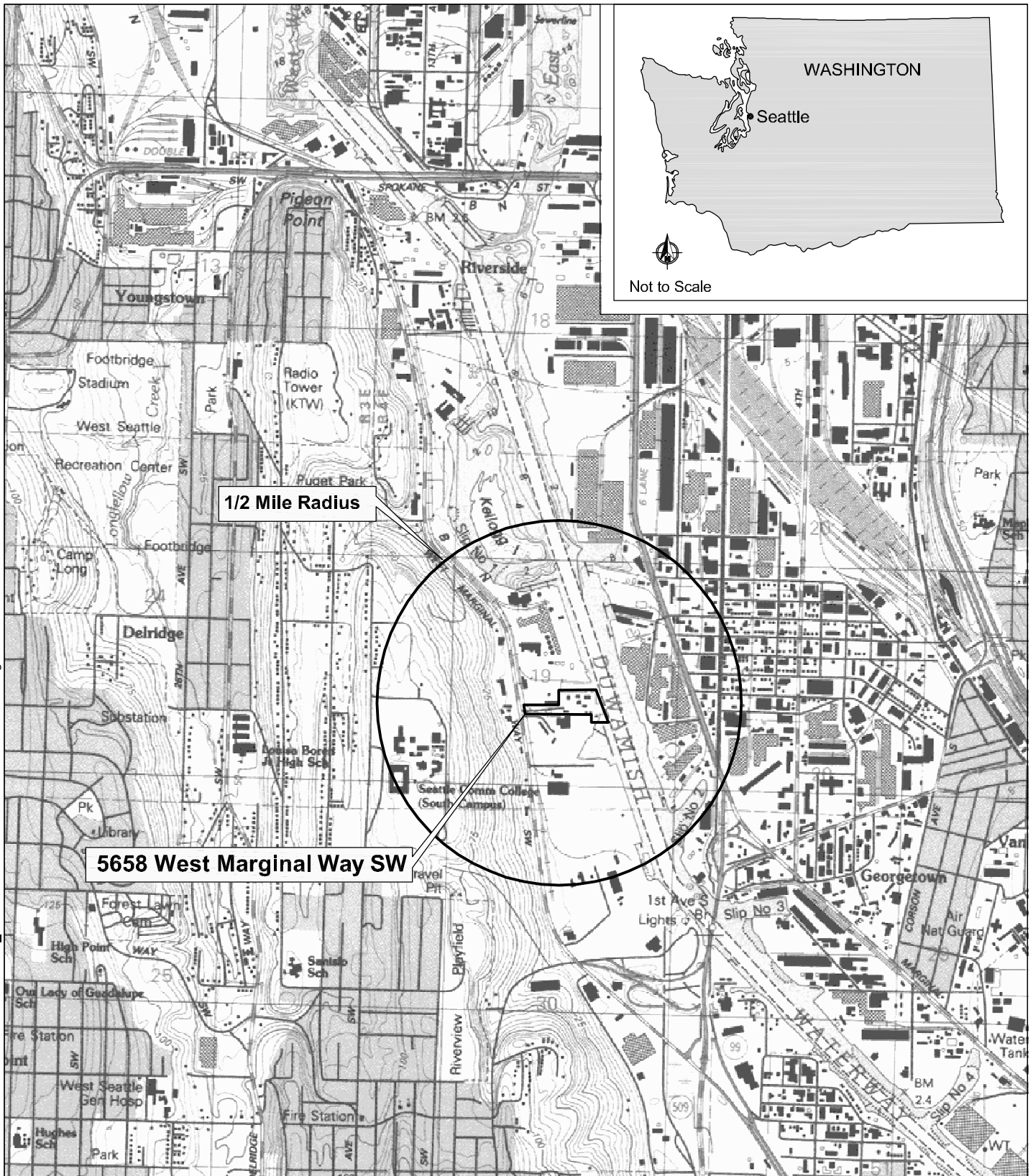
- N normal field sample
- FD field duplicate
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- U The analyte was analyzed for, but not detected above the sample reporting limit.
- Denotes criteria exceedance
- *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

Notes:

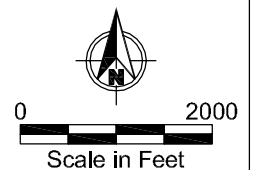
- No numerical criterion of this type for this chemical
- NA Sample not analyzed for this chemical
- mg/L milligrams per liter
- µg/L micrograms per liter

FIGURES

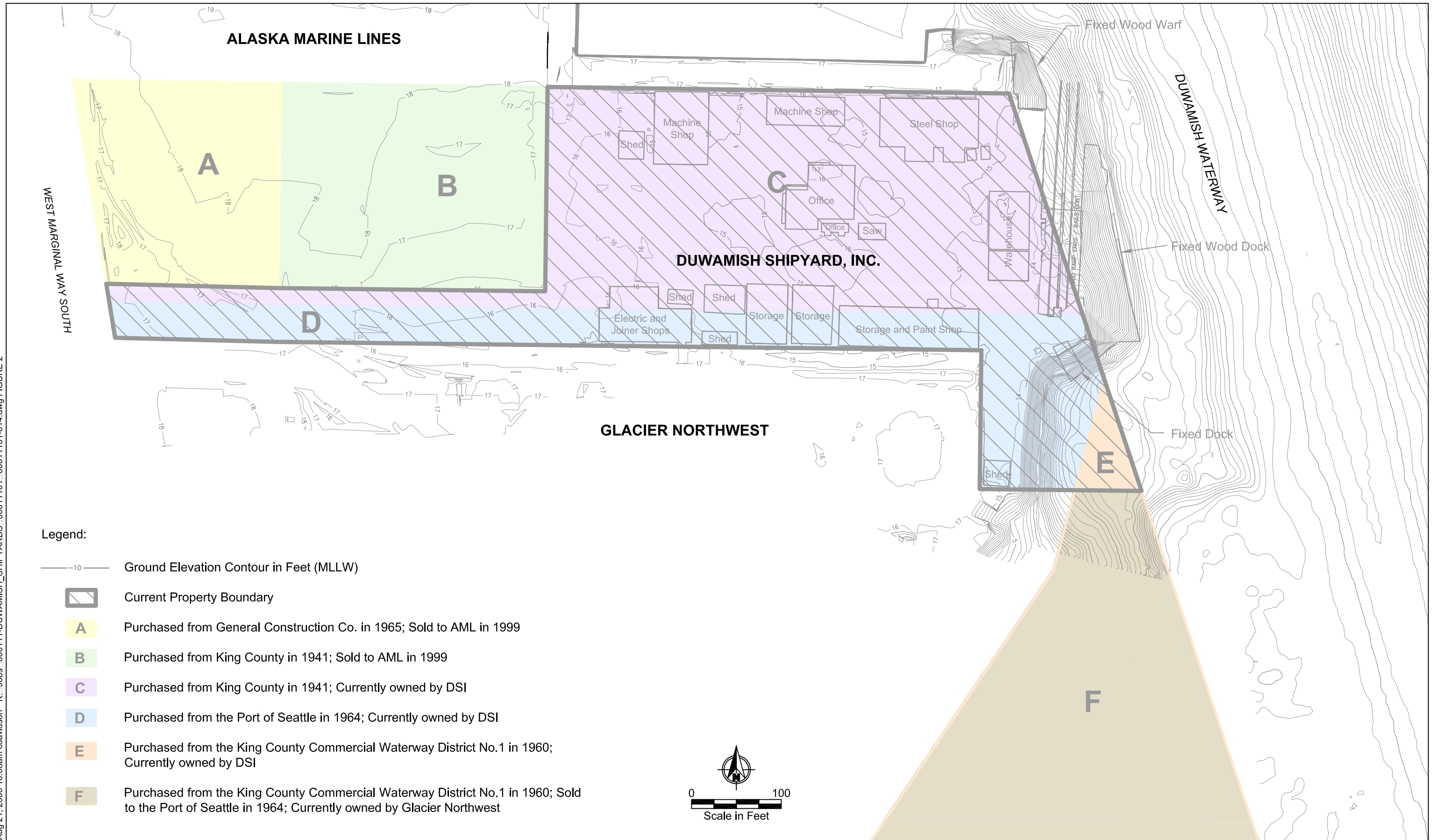
Jul 31, 2006 9:33am dholmer K:\Jobs\000111-DUWAMISH_SHIPYARDS\00011101_00011101-001.dwg FIGURE 1







Note: Base map prepared from Terrain Navigator Pro USGS
7.5 minute quadrangle map of Seattle South, Washington.



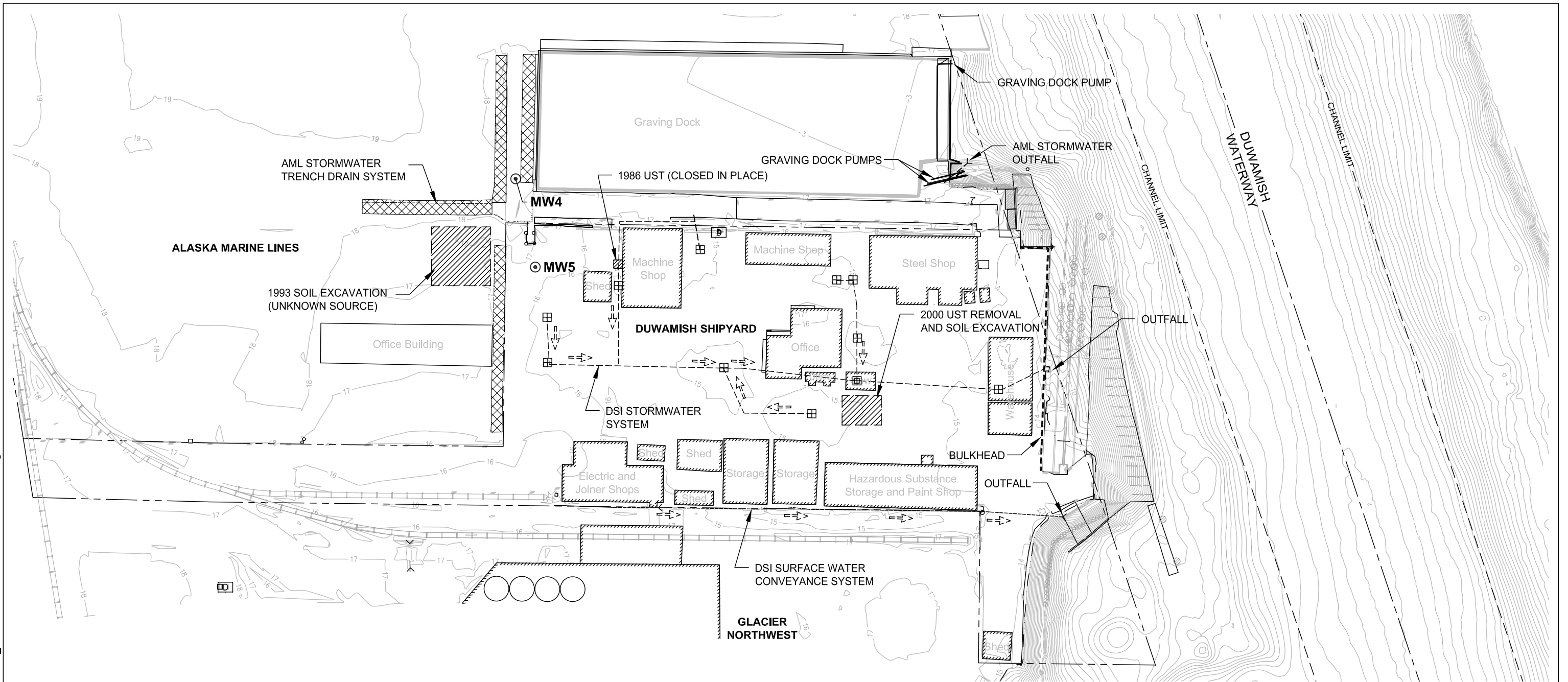
Aug 21, 2006 10:06am ctdavidson K:\Jobs\000111-DUWAMISH_SHIPYARDS\00011101\00011101-014.dwg FIGURE 2



Legend:

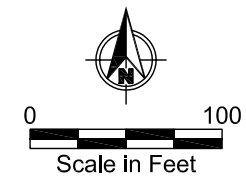
-  Ground Elevation Contour in Feet (MLLW)
-  Current Property Boundary
-  **A** Purchased from General Construction Co. in 1965; Sold to AML in 1999
-  **B** Purchased from King County in 1941; Sold to AML in 1999
-  **C** Purchased from King County in 1941; Currently owned by DSI
-  **D** Purchased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

Dec 15, 2006 11:42am hlevasseur K:\Jobs\000111-DUWAMISH_SHIPYARDS\00011101\00011101-017.dwg FIGURE 3



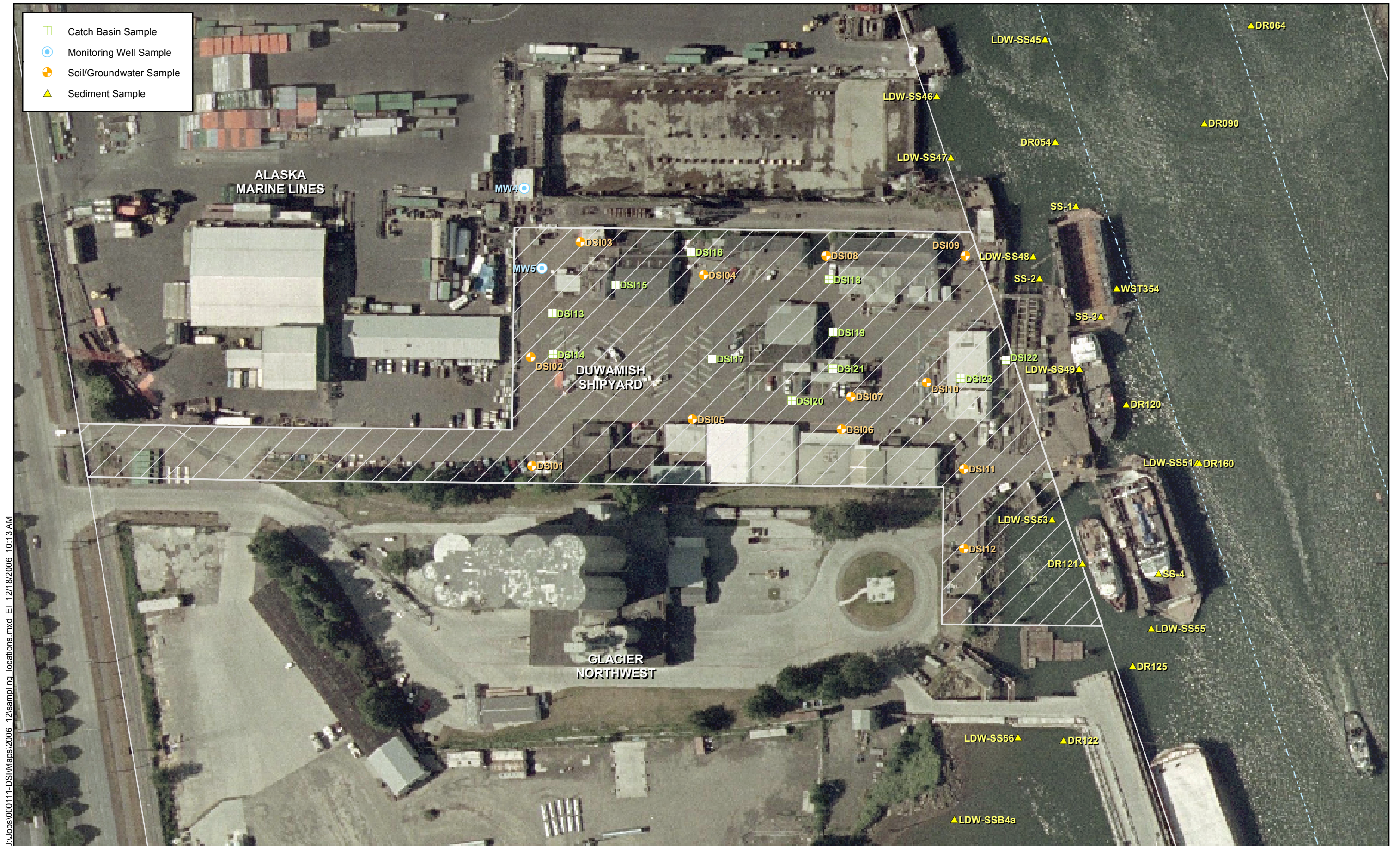
Legend:

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



Notes:

1. Location of underground structures has not been field verified with subsurface techniques such as cameras.
2. Horizontal Datum: Washington State Plane, North, NAD-83 (Feet).
3. Vertical Datum: MLLW (Feet).



J:\Jobs\000111-DSI\Maps\2006_12\sampling_locations.mxd EI_12/18/2006 10:13 AM

APPENDIX A
EXPLORATORY BORING LOGS



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI01
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/27/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/27/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	11:30	DSI01-SO-A	4.0		1		0.0 to 0.5 feet: ASPHALT
					2	SM	0.5 to 1.0 feet: GRAVEL BASE FILL
					3		1.0 to 3.0 feet: SILTY SAND (SM); gray; 60 percent fine sand; 40 percent nonplastic fines; moist.
					4	ML	3.0 to 3.5 feet: GRAVELLY SILT (ML); gray; 60 to 70 percent nonplastic to low plasticity fines; 30 to 40 percent fine to medium gravel, subrounded to well rounded; moist.
	11:40	DSI01-SO-B	5.0		5	SP	3.5 to 5.5 feet: SAND (SP); dark gray; fine sand; trace fines; laminated; moist.
					6	ML	5.5 to 6.0 feet: SILT (ML); dark gray; low to medium plasticity fines; 5 to 10 percent fine to coarse sand, angular; moist.
					7		6.0 to 9.0 feet: SAND (SP); dark gray; fine to medium sand; trace nonplastic fines; wet.
					8	SP	
					9		
	12:10	DSI01-GW			10	ML	9.0 to 10.0 feet: SILT (ML); light brown; low to medium plasticity fines; trace fine wood fragments and root hairs; black laminations; wet.
				11		Boring terminated at 10 feet.	
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI02
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/27/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/27/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	10:20	DSI02-SO-A	4.0	1	ML	0.0 to 0.5 feet: ASPHALT	
				2		0.5 to 1.0 feet: GRAVEL BASE FILL	
			3	1.0 to 3.0 feet: CONCRETE			
	10:30	DSI02-SO-B	4.0	4	SP	3.0 to 4.5 feet: SILT (ML); dark gray to black; low to medium plasticity fines; trace charred wood; moist.	
				5		4.5 to 8.0 feet: SAND (SP); dark gray; fine to medium sand; trace fine, subrounded gravel; moist. @ 5.0 feet: WET	
				6	SM	8.0 to 10.0 feet: SILTY SAND (SP); dark gray; fine sand; 20 percent low plasticity fines; wet.	
				7			
				8			
				9			
	11:15	DSI02-GW			10		
			11		Boring terminated at 10 feet.		
			12				
			13				
			14				
			15				
			16				
			17				
			18				
			19				
			20				

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI03
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/27/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/27/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	9:20	DSI03-SO-A	4.0		1		0.0 to 0.5 feet: ASPHALT
					2	SP	0.5 to 1.5 feet: GRAVEL BASE FILL
				3	ML	1.5 to 2.0 feet: GRAVELLY SAND (SP); light brown; 70 percent fine to medium sand; 30 percent fine gravel, subangular to well rounded; moist.	
				4		2.0 to 3.0 feet: SILT (ML); rust brown; medium plasticity fines; 2-inch thick wood chunk; 10 percent fine gravel; moist.	
				5		3.0 to 8.0 feet: SAND (SP); grayish brown; fine to medium sand; 20 to 30 percent low plasticity fines; moist.	
	9:30	DSI03-SO-B	5.0		6	SP	@ 6.5 feet: WET
					7		
					8		
					9	SM	8.0 to 10.0 feet: SILTY SAND (SP); dark gray; fine sand; 20 percent low plasticity fines; wet.
	10:00	DSI03-GW			10		
				11		Boring terminated at 10 feet.	
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI04
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/27/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/27/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	12:30	DSI04-SO-A	4.0		1		0.0 to 0.5 feet: ASPHALT
					2	ML	0.5 to 1.0 feet: GRAVEL BASE FILL
	12:40	DSI04-SO-B	4.0		3		1.0 to 3.0 feet: SILT (ML); dark gray; low to medium plasticity fines; moist.
					4	SP	3.0 to 8.0 feet: SAND (SP); brown; fine to medium sand; trace fines; moist to wet. @ 5.0 feet: WET; color change to grayish brown
					5		
					6		
					7		
					8		
					9	ML	8.0 to 9.0 feet: SILT WITH SAND (ML); grayish brown; medium plasticity fines; 20 to 30 percent fine sand; wet.
	13:10	DSI04-GW			10	OH	9.0 to 10.0 feet: ORGANIC SILT (OH); light brown; medium to high plasticity fines; 20 percent root hairs, grass, and reeds; moist.
						11	Boring terminated at 10 feet.
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI05
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/27/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/27/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	13:15	DSI05-SO-A	4.0	1	ML	0.0 to 0.5 feet: ASPHALT	
				2		0.5 to 1.0 feet: GRAVEL BASE FILL	
	13:30	DSI05-SO-B	4.0	3	SP - SM	1.0 to 3.0 feet: SILT (ML); gray; medium to high plasticity fines; moist.	
				4		3.0 to 9.0 feet: SAND WITH SILT (SP-SM); grayish brown; fine sand; 10 to 15 percent nonplastic to low plasticity fines; moist to wet.	
				5		@ 5.0 feet: WET	
				6			
				7			
				8			
				9			
				10			
13:45	DSI05-GW		10	OH	9.0 to 10.0 feet: ORGANIC SILT (OH); light brown with black laminations and fissures; medium to high plasticity fines; 20 percent root hairs, grass, and reeds; moist.		
			11		Boring terminated at 10 feet.		
			12				
			13				
			14				
			15				
			16				
			17				
			18				
			19				
			20				

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI06
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/27/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/27/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring	
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION	
Bentonite	14:05	DSI06-SO-A	4.0	1	ML	1	0.0 to 0.5 feet: ASPHALT	
				2		2	0.5 to 1.0 feet: GRAVEL BASE FILL	
				3		3	1.0 to 3.0 feet: SILT (ML); gray; medium to high plasticity fines; moist.	
				4		4	3.0 to 8.0 feet: SAND (SP); grayish brown; fine to medium sand; trace nonplastic to low plasticity fines; moist.	
	14:20	DSI06-SO-B		5		5	SP	@ 6.0 feet: WET
				6		6		
				7		7		
				8		8		
				9		9		
	14:45	DSI06-GW		10		10	OH	8.0 to 10.0 feet: ORGANIC SILT (OH); light brown with black laminations and fissures; medium to high plasticity fines; 10 to 15 percent root hairs, grass, and reeds; moist.
			11			Boring terminated at 10 feet.		
			12					
			13					
			14					
			15					
			16					
			17					
			18					
			19					
			20					

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI07
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/28/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/28/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	8:10	DSI07-SO-A	4.0		1		0.0 to 0.5 feet: ASPHALT
					2	ML	0.5 to 1.0 feet: GRAVEL BASE FILL
				3		1.0 to 3.0 feet: SILT (ML); gray; low to medium plasticity fines; moist.	
	8:20	DSI07-SO-B	4.0		4		3.0 to 7.0 feet: SAND (SP); dark grayish brown; fine to medium sand; trace nonplastic to low plasticity fines; petroleum hydrocarbon-like odor; moist.
					5	SP	@ 5.0 feet: WET
					6		@ 6.0 feet: 2-inch thick wood chunk
					7		
				8	SM	7.0 to 8.0 feet: SILTY SAND (SM); gray; 70 percent fine sand; 30 percent nonplastic to low plasticity fines; slight petroleum hydrocarbon-like odor; wet.	
				9	OH	8.0 to 10.0 feet: ORGANIC SILT (OH); light brown with black laminations and fissures; medium to high plasticity fines; 30 percent root hairs, grass, and reeds; moist.	
	9:00	DSI07-GW			10		@ 9.7 feet: 2-inch thick fine sand lense with roots, reeds, and grass.
				11			
				12		Boring terminated at 10 feet.	
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI08
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/28/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/28/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	9:20	DSI08-SO-A	4.0		1		0.0 to 0.5 feet: ASPHALT
					2	SM	0.5 to 1.0 feet: GRAVEL BASE FILL
	9:30	DSI08-SO-B	4.0		3		1.0 to 2.5 feet: SILTY SAND (SM); light brown; 50 to 60 percent fine sand; 40 to 50 percent medium to high plasticity fines; rust-colored sandy laminations; moist. 2.5 to 7.0 feet: SAND (SP); dark grayish brown; fine to medium sand; trace nonplastic to low plasticity fines; < 5 percent fine to medium, subrounded to well rounded gravel; moist. @ 5.0 feet: WET
					4		
					5	SP	
					6		
			4.0		7		7.0 to 8.0 feet: SILTY SAND (SM); gray; 70 to 80 percent fine sand; 20 to 30 percent nonplastic to low plasticity fines; wet.
					8	SM	
					9	OH	
		9:50	DSI08-GW			10		8.0 to 10.0 feet: ORGANIC SILT (OH); light brown with black laminations and fissures; medium to high plasticity fines; 20 percent root hairs, grass, and reeds; moist.
					11		Boring terminated at 10 feet.
					12		
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI09
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/28/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/28/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	10:10	DSI09-SO-A	4.0	X	1		0.0 to 0.5 feet: ASPHALT
						2	
					3	SP	1.0 to 3.5 feet: SAND (SP); grayish brown; fine to medium sand; ; moist.
	10:20	DSI09-SO-B			4	SW-SM	
					5		3.5 to 4.0 feet: SILTY SAND (SW-SM); brown, black, and gray; fine to coarse sand; 20 to 30 percent low to medium plasticity fines; 2-inch thick wood chunk; brass screw; moist.
			4.0	X	6	SP	4.0 to 8.0 feet: SAND (SP); grayish brown; fine to medium sand; trace nonplastic to low plasticity fines; moist. @ 5.0 feet: WET
					7		
					8		
					9	OH	
		10:40	DSI09-GW			10	
					11		Boring terminated at 10 feet.
					12		
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI10
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/28/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/28/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	11:00	DSI10-SO-A	4.0		1		0.0 to 0.5 feet: ASPHALT
					2	SM	0.5 to 1.0 feet: GRAVEL BASE FILL
	11:10	DSI10-SO-B		3		1.0 to 3.0 feet: SILTY SAND (SM); gray; 70 percent fine sand; 30 percent medium plasticity fines; rust-colored sandy laminations; moist.	
				4	SP	3.0 to 6.0 feet: SAND (SP); grayish brown; fine to medium sand; trace nonplastic to low plasticity fines; moist.	
				5		@ 5.0 feet: WET	
			4.0	6		6.0 to 8.0 feet: SAND WITH SILT (SP-SM); grayish brown; fine sand; 10 to 15 percent nonplastic to low plasticity fines; wet.	
				7	SP-SM		
				8		8.0 to 10.0 feet: ORGANIC SILT (OH); light brown with black laminations and fissures; medium to high plasticity fines; root hairs, grass, and reeds increasing with depth (8-9 feet 10 to 15 percent organic; 9 to 10 feet 20 to 30 percent organic); moist.	
		11:25	DSI10-GW		9	OH	
					10		
				11			
				12		Boring terminated at 10 feet.	
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI11
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/28/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/28/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	11:45	DSI11-SO-A	3.5	1	SM	0.0 to 0.5 feet: ASPHALT	
				2		0.5 to 1.0 feet: GRAVEL BASE FILL	
	11:50	DSI11-SO-B	4.0	3	SP	1.0 to 3.0 feet: SILTY SAND (SM); gray; 70 percent fine sand; 30 percent medium plasticity fines; moist.	
				4		3.0 to 7.0 feet: SAND (SP); dark grayish brown; fine to medium sand; trace nonplastic to low plasticity fines; moist.	
				5		@ 5.0 feet: WET	
				6			
				7			
				8		7.0 to 8.0 feet: SAND WITH SILT (SP-SM); dark grayish brown; fine sand; 10 to 15 percent nonplastic to low plasticity fines; wet.	
				9		8.0 to 10.0 feet: ORGANIC SILT (OH); light brown with black laminations and fissures; medium to high plasticity fines; 10 to 20 percent root hairs, grass, and reeds; moist.	
	12:10	DSI11-GW		10			
		11		Boring terminated at 10 feet.			
		12					
		13					
		14					
		15					
		16					
		17					
		18					
		19					
		20					

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips



LOG OF EXPLORATORY BORING

CLIENT/PROJECT NAME Duwamish Shipyard, Inc. BORING # DSI12
 PROJECT NUMBER 000111-01 / Task 8 DATE BEGAN 09/28/06
 GEOLOGIST/ENGINEER John Renda DATE COMPLETED 09/28/06
 DRILLING CONTRACTOR Holt Drilling, Inc. / Boart Longyear TOTAL DEPTH 10 feet
 DRILLING METHOD Direct Push / Geoprobe SHEET 1 OF 1
 HOLE DIAMETER 2-inch

WELL OR PIEZOMETER DETAILS	SAMPLING DATA				DEPTH IN FEET	SOIL GROUP SYMBOL (USCS)	Field location of boring
	Sample Time	SAMPLE NUMBER	RECOVERY (feet)	DEPTH SAMPLED			LITHOLOGIC DESCRIPTION
Bentonite	12:30	DSI12-SO-A	3.0	1	SM	0.0 to 0.5 feet: ASPHALT	
				2		0.5 to 1.0 feet: GRAVEL BASE FILL	
	12:40	DSI12-SO-B	3	1.0 to 4.0 feet: SILTY SAND (SM); light brown; 70 percent fine sand; 30 percent medium plasticity fines; rust-colored and dark gray laminations; moist.			
			4				
			5	4.0 to 6.0 feet: SILTY SAND (SM); gray; 70 to 80 percent fine sand; 20 to 30 percent medium plasticity fines; trace fine to medium, subrounded gravel; wet.			
			6				
			7	6.0 to 7.0 feet: SAND (SP); grayish brown; fine to medium sand; wet.			
			8				
			9	7.0 to 10.0 feet: ORGANIC SILT (OH); light brown with black laminations and fissures; medium to high plasticity fines; 30 percent root hairs, grass, and reeds; moist.			
			10				
	13:00	DSI12-GW					
				11		Boring terminated at 10 feet.	
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

Remarks: Water sample collected from terminal depth by placing 1-inch diameter, 10-foot long screen into borehole and pumping with a peristaltic pump. After sampling, all materials were removed from borehole and borehole was backfilled with bentonite chips

APPENDIX B

FIELD DOCUMENTATION NOTES

Field sampling data sheets for Geoprobe™ boring groundwater samples

Monitoring well development forms

Field sampling data sheets for monitoring well groundwater samples

Catch basin summary data sheet

FIELD SAMPLING DATA SHEET



6650 SW Redwood Lane, Suite 110
Portland, OR 97224

Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DSI01

SITE ADDRESS: Seattle, Washington

BLIND ID: DSI01-GW

DUP ID: NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		CLOUDY		RAIN		?		TEMPERATURE: 72 °F		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Circle appropriate unit] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)	
9/27/06	12:11	.	.	4.37	.	.	X 1	
/ /	:	.	.	.	.	.	X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other -

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample) Sample Depth: [if used]

Bottle Type	Date	Time	Method [§]	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	9/27/06	12:10	B	(6) 40 ml	HCl	YES	NO		✓
Amber Glass	9/27/06	12:10	B	(6) 250, 500, 1L	(None) (HCl) (H ₂ SO ₄)	YES	NO		✓
White Poly	/ /	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	9/27/06	12:10	B	(1) 250, 500, 1L	HNO ₃	YES	NO		✓
Red Diss. Poly	9/27/06	12:10	B	(1) 250, 500, 1L	HNO ₃	YES	YES		✓
	/ /	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-Cx)
	AMBER - Glass	(PAHs) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil & Grease) (8081A) (PCBs) (Pesticides)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)

WATER QUALITY DATA Purge Start Time: : Pump/Bailer Inlet Depth:

Meas.	Method [§]	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.	.	.	.	.
3		.	.	.	.	.	.
2		.	.	.	.	.	.
1		.	.	.	.	.	.
0	B	0.54-0.00	6.26	422	17.87-33.8		4.30	cloudy, tan

[Casing] [Select A-G] [Cumulative Totals] [Circle units] [Clarity, Color]

Screened from 0 to 10 feet.

SAMPLER: Kelly R. Titkemeier
(PRINTED NAME)

Kelly R. Titkemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



ANCHOR
ENVIRONMENTAL, L.L.C.

6650 SW Redwood Lane, Suite 110

Portland, OR 97224

Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DSI02

SITE ADDRESS: Seattle, Washington

BLIND ID: DSI02-SW

DUP ID: _____

NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		CLOUDY		RAIN		?		TEMPERATURE: 72 °F °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)							[Product Thickness]	[Water Column]	[Water Column x Gal/ft]
Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW			Volume (gal)
9/27/06	:			X 1
/ /	:			X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875	

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)								Sample Depth:		[N if used]
Bottle Type	Date	Time	Method [§]	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√	
VOA Glass	9/27/06	11:15	B	6 (40 ml)	(HCl)	(YES)	(NO)		✓	
Amber Glass	9/27/06	11:15	B	250, 500, 1L	(None) (HCl) (H ₂ SO ₄)	(YES)	(NO)		✓	
White Poly	/ /	4:15		250, 500, 1L	None	YES	NO	NA		
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO			
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO			
Red Total Poly	9/27/06	11:15	B	1 (250, 500, 1L)	(HNO ₃)	(YES)	(NO)		✓	
Red Diss. Poly	9/27/06	11:15	B	1 (250, 500, 1L)	(HNO ₃)	(YES)	(YES)		✓	
	/ /	:		250, 500, 1L		YES				

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-Gx)
	AMBER - Glass	(PAHs) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil & Grease) (8081A) (PCBs) (Pesticides)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)

WATER QUALITY DATA			Purge Start Time:	Pump/Bailer Inlet Depth:				
Meas.	Method [§]	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.	.	.		.
3		.	.	.	.		.
2		.	.	.	.		.
1		.	.	.	.		.
0	B	0.5L 0.00 KET	.	.	.		.	cloudy tan

[Casing] [Select A-G] [Cumulative Totals] [Circle units] [Clarity, Color]

Screened from 0 to 10 feet.

SAMPLER: Kelly R. Tilkemeier
(PRINTED NAME)

Kelly R. Tilkemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



ANCHOR
ENVIRONMENTAL, L.L.C.

6650 SW Redwood Lane, Suite 110

Portland, OR 97224

Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DSI03

SITE ADDRESS: Seattle, Washington

BLIND ID: DSI03-GW

DUP ID:

NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY	
WEATHER:	SUNNY			CLOUDY	RAIN			?	TEMPERATURE: <u>70</u> °C			

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

(Circle appropriate unit)
[Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)	
9/27/06	10:05	.	.	5.5	.	.	X 1	
/ /	:	.	.	.	.	.	X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[√ if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	9/27/06	10:00	B	<u>6</u> <u>40 ml</u>	<u>HCl</u>	<u>YES</u>	<u>NO</u>		✓
Amber Glass	9/27/06	10:00	B	<u>250, 500, 1L</u>	<u>(None)</u> (HCl) (H ₂ SO ₄)	<u>YES</u>	<u>NO</u>		✓
White Poly	/ /	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	9/27/06	10:00	B	<u>1</u> <u>250, 500, 1L</u>	<u>HNO₃</u>	<u>YES</u>	<u>NO</u>		✓
Red Diss. Poly	9/27/06	10:00	B	<u>1</u> <u>250, 500, 1L</u>	<u>HNO₃</u>	<u>YES</u>	<u>YES</u>		✓
	/ /	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) <u>(8260B)</u> (BTEX) <u>(NWTPh-Gx)</u>
	AMBER - Glass	<u>(PAHs)</u> (TPH-HCID) <u>(NWTPh-Dx)</u> (TPH-418.1) (Oil & Grease) (8081A) <u>(PCBs)</u> <u>(Pesticides)</u>
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	<u>(As)</u> (Sb) (Ba) (Be) (Ca) <u>(Cd)</u> (Co) <u>(Cr)</u> <u>(Cu)</u> (Fe) <u>(Hg)</u> <u>(Pb)</u> (Mg) (Mn) (Ni) <u>(Ag)</u> (Se) (Tl) (V) <u>(Zn)</u> (Hg) (K) (Na)
	RED DISSOLVED - Poly	<u>(As)</u> (Sb) (Ba) (Be) (Ca) <u>(Cd)</u> (Co) <u>(Cr)</u> <u>(Cu)</u> (Fe) <u>(Hg)</u> <u>(Pb)</u> (Mg) (Mn) (Ni) <u>(Ag)</u> (Se) (Tl) (V) <u>(Zn)</u> (Hg) (K) (Na)

WATER QUALITY DATA

Purge Start Time: :

Pump/Bailer Inlet Depth:

Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.	.	.		.
3		.	.	.	.		.
2		.	.	.	.		.
1		.	.	.	.		.
0	B	<u>1.00 L</u>	<u>6.50</u>	<u>2702</u>	<u>20.30</u>	<u>77.7</u>	<u>3.10</u>	<u>cloudy tan</u>

[Casing] [Select A-G] [Cumulative Totals]

[Circle units]

[Clarity, Color]

Screened from 0 to 10 feet.

SAMPLER:

Kelly R. Titkemeier
(PRINTED NAME)

Kelly R. Titkemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



ANCHOR
ENVIRONMENTAL, L.L.C.

6650 SW Redwood Lane, Suite 110

Portland, OR 97224

Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DSI04

SITE ADDRESS: Seattle, Washington

BLIND ID: DSI04-GW

DUP ID:

NA

WIND FROM:	N	<u>NE</u>	E	SE	S	SW	W	NW	<u>LIGHT</u>	MEDIUM	HEAVY
WEATHER:	<u>SUNNY</u>		CLOUDY		RAIN		?		TEMPERATURE: <u>67.2</u> °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

[Circle appropriate units]

[Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)	
9/27/06	13:11	.	.	4.27	.	.	X 1	
1/1	:	.	.	.	.	.	X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[if used]

Bottle Type	Date	Time	Method [§]	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	9/27/06	13:10	B	<u>6</u> <u>40 ml</u>	<u>HCl</u>	<u>YES</u>	<u>NO</u>		✓
Amber Glass	9/27/06	13:10	B	<u>1000</u> <u>250, 500, 1L</u>	<u>(None)</u> (HCl) (H ₂ SO ₄)	<u>YES</u>	<u>NO</u>		✓
White Poly	1/1	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	1/1	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	1/1	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	9/27/06	13:10	B	<u>1</u> <u>250, 500, 1L</u>	<u>HNO₃</u>	<u>YES</u>	<u>NO</u>		✓
Red Diss. Poly	9/27/06	13:10	B	<u>1</u> <u>250, 500, 1L</u>	<u>HNO₃</u>	<u>YES</u>	<u>YES</u>		✓
	1/1	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) <u>(8260B)</u> (BTEX) <u>(NWTPH-Gx)</u>
	AMBER - Glass	<u>(PAHs)</u> (TPH-HClD) <u>(NWTPH-Dx)</u> (TPH-418.1) (Oil & Grease) (8081A) <u>(PCBs)</u> <u>(Pesticides)</u>
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	<u>(As)</u> (Sb) (Ba) (Be) (Ca) <u>(Cd)</u> (Co) <u>(Cr)</u> <u>(Cu)</u> (Fe) <u>(Hg)</u> <u>(Pb)</u> (Mg) (Mn) (Ni) <u>(Ag)</u> (Se) (Tl) (V) <u>(Zn)</u> (K) (Na)
	RED DISSOLVED - Poly	<u>(As)</u> (Sb) (Ba) (Be) (Ca) <u>(Cd)</u> (Co) <u>(Cr)</u> <u>(Cu)</u> (Fe) <u>(Hg)</u> <u>(Pb)</u> (Mg) (Mn) (Ni) <u>(Ag)</u> (Se) (Tl) (V) <u>(Zn)</u> (K) (Na)

WATER QUALITY DATA

Purge Start Time: :

Pump/Bailer Inlet Depth:

Meas.	Method [§]	Purged (gal)	pH	E Cond (µS)	°F Temp (C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.	.	.		.
3		.	.	.	.		.
2		.	.	.	.		.
1		.	.	.	.		.
0	<u>B</u>	<u>0.54-0.00</u>	<u>6.47</u>	<u>512</u>	<u>21.43</u>	<u>-735</u>	<u>3.56</u>	<u>cloudy tan</u>

[Casing] [Select A-G] [Cumulative Totals]

[Circle units]

[Clarity, Color]

Screened from 0 to 10 feet.

SAMPLER:

Kelly R. Titkemeier
(PRINTED NAME)

Kelly R. Titkemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



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Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DSI 05

SITE ADDRESS: Seattle, Washington

BLIND ID: DSI 05-GW

DUP ID:

NA

WIND FROM:	N	<u>NE</u>	E	SE	S	SW	W	NW	<u>LIGHT</u>	MEDIUM	HEAVY	
WEATHER:	<u>SUNNY</u>			CLOUDY			RAIN			?		
										TEMPERATURE:	<u>72</u> °F	°C

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

(Circle appropriate units)
[Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)
<u>9/27/06</u>	<u>13:50</u>	.	.	<u>4.55</u>	.	.	X 1
<u>/ /</u>	:	.	.	.	.	.	X 3

Gal/ft = (dia./2)² x 0.163 1" = 0.041 2" = 0.163 3" = 0.367 4" = 0.653 6" = 1.469 10" = 4.080 12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	<u>9/27/06</u>	<u>13:45</u>	<u>B</u>	<u>(6)</u> <u>40 ml</u>	<u>HCl</u>	<u>YES</u>	<u>NO</u>		<u>✓</u>
Amber Glass	<u>9/27/06</u>	<u>13:45</u>	<u>B</u>	<u>(14)</u> <u>250, 500, 1L</u>	<u>(None)</u> (HCl) (H ₂ SO ₄)	<u>YES</u>	<u>NO</u>		<u>✓</u>
White Poly	<u>/ /</u>	:		<u>250, 500, 1L</u>	<u>None</u>	<u>YES</u>	<u>NO</u>	<u>NA</u>	
Yellow Poly	<u>/ /</u>	:		<u>250, 500, 1L</u>	<u>H₂SO₄</u>	<u>YES</u>	<u>NO</u>		
Green Poly	<u>/ /</u>	:		<u>250, 500, 1L</u>	<u>NaOH</u>	<u>YES</u>	<u>NO</u>		
Red Total Poly	<u>9/27/06</u>	<u>13:45</u>	<u>B</u>	<u>(1)</u> <u>250, 500, 1L</u>	<u>HNO₃</u>	<u>YES</u>	<u>NO</u>		<u>✓</u>
Red Diss. Poly	<u>9/27/06</u>	<u>13:45</u>	<u>B</u>	<u>(1)</u> <u>250, 500, 1L</u>	<u>HNO₃</u>	<u>YES</u>	<u>YES</u>		<u>✓</u>
	<u>/ /</u>	:		<u>250, 500, 1L</u>		<u>YES</u>			

Total Bottles (include duplicate count): (14)

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) <u>(8260B)</u> (BTEX) <u>(NWTPh-Gx)</u>
	AMBER - Glass	<u>(PAHs)</u> (TPH-HCID) <u>(NWTPh-Dx)</u> (TPH-418.1) (Oil & Grease) (8081A) <u>(PCBs)</u> <u>(Pesticides)</u>
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	<u>(As)</u> (Sb) (Ba) (Be) (Ca) <u>(Cd)</u> (Co) <u>(Cr)</u> <u>(Cu)</u> (Fe) <u>(Hg)</u> <u>(Pb)</u> (Mg) (Mn) (Ni) <u>(Ag)</u> (Se) (Tl) (V) <u>(Zn)</u> (K) (Na)
	RED DISSOLVED - Poly	<u>(As)</u> (Sb) (Ba) (Be) (Ca) <u>(Cd)</u> (Co) <u>(Cr)</u> <u>(Cu)</u> (Fe) <u>(Hg)</u> <u>(Pb)</u> (Mg) (Mn) (Ni) <u>(Ag)</u> (Se) (Tl) (V) <u>(Zn)</u> (K) (Na)

WATER QUALITY DATA Purge Start Time: : Pump/Bailer Inlet Depth:

Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.		.		.
3		.	.		.		.
2		.	.		.		.
1		.	.		.		.
0	<u>B</u>	<u>0.50</u> <u>0.00</u>	<u>6.34</u>	<u>534</u>	<u>18.58</u> <u>-86.4</u>		<u>3.33</u>	<u>cloudy tan</u>

[Casing]

[Select A-G]

[Cumulative Totals]

[Circle units]

[Clarity] Color]

Screened from 0 to 10 feet.

SAMPLER:

Kelly R. Titkemeier
(PRINTED NAME)

Kelly R. Titkemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



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Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DSI06

SITE ADDRESS: Seattle, Washington

BLIND ID: DSI06-SW

DUP ID:

NA

WIND FROM:	N	<u>NE</u>	E	SE	S	SW	W	NW	<u>LIGHT</u>	MEDIUM	HEAVY
WEATHER:	<u>SUNNY</u>		CLOUDY		RAIN		?		TEMPERATURE: <u>72</u> °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

(Circle appropriate unit)
[Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)	
<u>9/27/06</u>	<u>14:40</u>	.	.	<u>5.34</u>	.	.	X 1	
<u>1/1</u>	:	.	.	.	.	.	X 3
Gal/ft = (dia./2) ² × 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[if used]

Bottle Type	Date	Time	Method [§]	Amount & Volume mL	Preservative (circle)	Ice	Filter	pH	✓
VOA Glass	<u>9/27/06</u>	<u>14:45</u>	<u>B</u>	<u>(6)</u> <u>(40 ml)</u>	<u>(HCl)</u>	<u>(YES)</u>	<u>(NO)</u>		<u>✓</u>
Amber Glass	<u>9/27/06</u>	<u>14:45</u>	<u>B</u>	<u>(6)</u> <u>250, (500) 1L</u>	<u>(None)</u> (HCl) (H ₂ SO ₄)	<u>(YES)</u>	<u>(NO)</u>		<u>✓</u>
White Poly	<u>1/1</u>	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	<u>1/1</u>	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	<u>1/1</u>	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	<u>9/27/06</u>	<u>14:45</u>	<u>B</u>	<u>(1)</u> <u>250, (500) 1L</u>	<u>(HNO₃)</u>	<u>(YES)</u>	<u>(NO)</u>		<u>✓</u>
Red Diss. Poly	<u>9/27/06</u>	<u>14:45</u>	<u>B</u>	<u>(1)</u> <u>250, (500) 1L</u>	<u>(HNO₃)</u>	<u>(YES)</u>	<u>(YES)</u>		<u>✓</u>
	<u>1/1</u>	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): (14)

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) <u>(8260B)</u> (BTEX) <u>(NWTPH-Gx)</u>
	AMBER - Glass	<u>(PAHs)</u> (TPH-HCID) <u>(NWTPH-Dx)</u> (TPH-418.1) (Oil & Grease) (8081A) <u>(PCBs)</u> <u>(Pesticides)</u>
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	<u>(As)</u> (Sb) (Ba) (Be) (Ca) <u>(Cd)</u> (Co) <u>(Cr)</u> <u>(Cu)</u> (Fe) <u>(Hg)</u> <u>(Pb)</u> (Mg) (Mn) (Ni) <u>(Ag)</u> (Se) (Ti) (V) <u>(Zn)</u> (Hg) (K) (Na)
	RED DISSOLVED - Poly	<u>(As)</u> (Sb) (Ba) (Be) (Ca) <u>(Cd)</u> (Co) <u>(Cr)</u> <u>(Cu)</u> (Fe) <u>(Hg)</u> <u>(Pb)</u> (Mg) (Mn) (Ni) <u>(Ag)</u> (Se) (Ti) (V) <u>(Zn)</u> (Hg) (K) (Na)

WATER QUALITY DATA

Purge Start Time: :

Pump/Bailer Inlet Depth:

Meas.	Method [§]	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.	.	.	.	.
3		.	.	.	.	.	.
2		.	.	.	.	.	.
1		.	.	.	.	.	.
0	<u>B</u>	<u>0.00</u>	<u>6.20</u>	<u>487</u>	<u>18.20</u>	<u>55.8</u>	<u>5.26</u>	<u>cloudy, tan</u>

[Casing] [Select A-G] [Cumulative Totals]

[Circle units]

[Clarity, Color]

Screened from 0 to 10 feet.

SAMPLER:

Kelly R. Tittkemeier
(PRINTED NAME)

Kelly R. Tittkemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



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PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DSI07

SITE ADDRESS: Seattle, Washington

BLIND ID: DSI07-GW

DUP ID: DSI57-GW NA 0910

WIND FROM:	N	NE	E	SE	S	SW	W	NW	(L) LIGHT	MEDIUM	HEAVY
WEATHER:	(S) SUNNY		CLOUDY		RAIN		?		TEMPERATURE: °F <u>66</u> °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

(Circle appropriate unit)

[Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)
9/28/06	09:11	.	.	5.18	.	.	X 1
/ /	:	.	.	.	.	.	X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080
		12" = 5.875					

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailor (D) PVC/Teflon Bailor (E) Dedicated Bailor (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[if used]

Bottle Type	Date	Time	Method [§]	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	✓
VOA Glass	9/28/06	09:00	B	(6) 40 ml	(HCl)	(YES)	(NO)		✓
Amber Glass	9/28/06	09:00	B	(6) 250, 500, 1L	(None) (HCl) (H ₂ SO ₄)	(YES)	(NO)		✓
White Poly	/ /	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	9/28/06	09:00	B	(1) 250, 500, 1L	(HNO ₃)	(YES)	(NO)		✓
Red Diss. Poly	9/28/06	09:00	B	(1) 250, 500, 1L	(HNO ₃)	(YES)	(YES)		✓
	/ /	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): ~~24~~ 28

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-Gx)
	AMBER - Glass	(PAHs) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil & Grease) (8081A) (PCBs) (Pesticides)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)

WATER QUALITY DATA

Purge Start Time: :

Pump/Bailer Inlet Depth:

Meas.	Method [§]	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.	.	.		.
3		.	.	.	.		.
2		.	.	.	.		.
1		.	.	.	.		.
0	B	0.5L 0.00 gal	6.53	1039	19.72-105.4		3.84	cloudy gray

[Casing] [Select A-G] [Cumulative Totals] [Circle units] [Clarity, Color]

Screened from 0 to 10 feet.
Hydrocarbon-like odor in water noted when sampling VOCs.
Slight sheen noted on surface of purge water.

SAMPLER: Kelly R. Titkemeier
(PRINTED NAME)

Kelly R. Titkemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



ANCHOR
ENVIRONMENTAL, L.L.C.

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Office: (503) 670-1108

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PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DST08

SITE ADDRESS: Seattle, Washington

BLIND ID: DST08-GW

DUP ID:

NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		CLOUDY		RAIN		?		TEMPERATURE: °F <u>68</u> °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

(Circle appropriate units)

[Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)
9/28/06	09:53	.	.	5.10	.	.	X 1
/ /	:	.	.	.	.	.	X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080
		12" = 5.875					

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[√ if used]

Bottle Type	Date	Time	Method [§]	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	9/28/06	09:50	B	(6) 40 ml	(HCl)	(YES)	(NO)		✓
Amber Glass	9/28/06	09:50	B	(6) 4 250, 500, 1L	(None) (HCl) (H ₂ SO ₄)	(YES)	(NO)		✓
White Poly	/ /	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	9/28/06	09:50	B	(1) 250, 500, 1L	(HNO ₃)	(YES)	(NO)		✓
Red Diss. Poly	9/28/06	09:50	B	(1) 250, 500, 1L	(HNO ₃)	(YES)	(YES)		✓
	/ /	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): (14)

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-Gx)
	AMBER - Glass	(PAHs) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil & Grease) (8081A) (PCBs) (Pesticides)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)

WATER QUALITY DATA

Purge Start Time: :

Pump/Bailer Inlet Depth:

Meas.	Method [§]	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.		.		.
3		.	.		.		.
2		.	.		.		.
1		.	.		.		.
0	B	0.00	6.60	778	19.80	-57.5	4.44	cloudy tan

[Casing] [Select A-G] [Cumulative Totals]

[Circle units]

[Clarity, Color]

Screened from 0 to 10 feet.

SAMPLER:

Kelly R. Tittkemeier
(PRINTED NAME)

Kelly R. Tittkemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



ANCHOR
ENVIRONMENTAL, L.L.C.

6650 SW Redwood Lane, Suite 110

Portland, OR 97224

Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DST09

SITE ADDRESS: Seattle, Washington

BLIND ID: DST09-GW

DUP ID:

NA

WIND FROM:	<u>N</u>	<u>NE</u>	E	SE	S	SW	W	NW	<u>LIGHT</u>	MEDIUM	HEAVY
WEATHER:	<u>SUNNY</u>		CLOUDY		RAIN		?		TEMPERATURE: <u>68</u> °F <u>20</u> °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

[Circle appropriate unit]
[Water Column x Gal/Ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)
<u>9/28/06</u>	<u>10:41</u>	.	.	<u>564</u>	.	.	X 1
<u>/ /</u>	<u>:</u>	.	.	.	.	.	X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080
		12" = 5.875					

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailor (D) PVC/Teflon Bailor (E) Dedicated Bailor (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[√ if used]

Bottle Type	Date	Time	Method [§]	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	<u>9/28/06</u>	<u>10:40</u>	<u>B</u>	<u>(6)</u> <u>40 ml</u>	<u>(HCl)</u>	YES	NO		✓
Amber Glass	<u>9/28/06</u>	<u>10:40</u>	<u>B</u>	<u>(6)</u> <u>250, 500, 1L</u>	<u>(None)</u> (HCl) (H ₂ SO ₄)	YES	NO		✓
White Poly	<u>/ /</u>	<u>:</u>		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	<u>/ /</u>	<u>:</u>		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	<u>/ /</u>	<u>:</u>		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	<u>9/28/06</u>	<u>10:40</u>	<u>B</u>	<u>(1)</u> <u>250, 500, 1L</u>	<u>(HNO₃)</u>	YES	NO		✓
Red Diss. Poly	<u>9/28/06</u>	<u>10:40</u>	<u>B</u>	<u>(1)</u> <u>250, 500, 1L</u>	<u>(HNO₃)</u>	YES	YES		✓
	<u>/ /</u>	<u>:</u>		250, 500, 1L		YES			

Total Bottles (include duplicate count): (14)

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) <u>(8260B)</u> (BTEX) <u>(NWTPH-Gx)</u>
	AMBER - Glass	<u>(PAHs)</u> (TPH-HCID) <u>(NWTPH-Dx)</u> (TPH-418.1) (Oil & Grease) (8081A) <u>(PCBs)</u> <u>(Pesticides)</u>
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	<u>(As)</u> <u>(Sb)</u> (Ba) (Be) (Ca) <u>(Cd)</u> (Co) <u>(Cr)</u> <u>(Cu)</u> (Fe) <u>(Hg)</u> <u>(Pb)</u> (Mg) (Mn) (Ni) <u>(Ag)</u> (Se) (Tl) (V) <u>(Zn)</u> (Hg) (K) (Na)
	RED DISSOLVED - Poly	<u>(As)</u> <u>(Sb)</u> (Ba) (Be) (Ca) <u>(Cd)</u> (Co) <u>(Cr)</u> <u>(Cu)</u> (Fe) <u>(Hg)</u> <u>(Pb)</u> (Mg) (Mn) (Ni) <u>(Ag)</u> (Se) (Tl) (V) <u>(Zn)</u> (Hg) (K) (Na)

WATER QUALITY DATA

Purge Start Time: :

Pump/Bailer Inlet Depth:

Meas.	Method [§]	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.		.		.
3		.	.		.		.
2		.	.		.		.
1		.	.		.		.
0	<u>B</u>	<u>0.5L-0.00</u>	<u>6.11</u>	<u>5164</u>	<u>18.09-56.8</u>		<u>4.82</u>	<u>cloudy tan</u>

[Casing] [Select A-G] [Cumulative Totals]

[Circle units]

[Clarity] Color]

Screened from 0 to 10 feet.

SAMPLER:

Kelly R. Titekemeier
(PRINTED NAME)

Kelly R. Titekemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



ANCHOR
ENVIRONMENTAL, L.L.C.

6650 SW Redwood Lane, Suite 110

Portland, OR 97224

Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DSI10

SITE ADDRESS: Seattle, Washington

BLIND ID: DSI10-GW

DUP ID:

NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	(L) LIGHT	MEDIUM	HEAVY
WEATHER:	(S) SUNNY		CLOUDY		RAIN		?		TEMPERATURE: (F) 72 °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

(Circle appropriate units)
[Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)
9/28/06	11:31	.	.	5.05	.	.	X 1
/ /	:	.	.	.	.	.	X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080
		12" = 5.875					

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[if used]

Bottle Type	Date	Time	Method [§]	Amount & Volume mL	Preservative (circle)	Ice	Filter	pH	√
VOA Glass	9/28/06	11:25	B	(6) 40 ml	(HCl)	(YES)	(NO)		✓
Amber Glass	9/28/06	11:25	B	(6) 250, 500, 1L	(None) (HCl) (H ₂ SO ₄)	(YES)	(NO)		✓
White Poly	/ /	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	9/28/06	11:25	B	(1) 250, 500, 1L	(HNO ₃)	(YES)	(NO)		✓
Red Diss. Poly	9/28/06	11:25	B	(1) 250, 500, 1L	(HNO ₃)	(YES)	(YES)		✓
	/ /	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): (14)

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-Gx)
	AMBER - Glass	(PAHs) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil & Grease) (8081A) (PCBs) (Pesticides)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Kjeldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)

WATER QUALITY DATA

Purge Start Time: :

Pump/Bailer Inlet Depth:

Meas.	Method [§]	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.	.	.		.
3		.	.	.	.		.
2		.	.	.	.		.
1		.	.	.	.		.
0	B	0.92000	6.38	547	20.90 - 76.5		4.73	cloudy, tan

[Casing] [Select A-G] [Cumulative Totals]

[Circle units]

[Clarity, Color]

Screened from 0 to 10 feet.

SAMPLER:

Kelly R. Titekemeier
(PRINTED NAME)

Kelly R. Titekemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



ANCHOR
ENVIRONMENTAL, L.L.C.

6650 SW Redwood Lane, Suite 110

Portland, OR 97224

Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DSII

SITE ADDRESS: Seattle, Washington

BLIND ID: DSII-GW

DUP ID:

NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY			CLOUDY		RAIN		?		TEMPERATURE: <u>72</u> °F °C	

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)							[Product Thickness]	[Water Column]	[Circle appropriate units]
Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW			Volume (gal)
9/28/06	12:16	.	.	5.47	.	.			X 1
/ /	:	.	.	.	.	.			X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875	

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)							Sample Depth:			[if used]
Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√	
VOA Glass	9/28/06	12:10	B	(6) 40 ml	HCl	YES	NO		✓	
Amber Glass	9/28/06	12:10	B	(6) 250, 500, 1L	(None) (HCl) (H ₂ SO ₄)	YES	NO		✓	
White Poly	/ /	:		250, 500, 1L	None	YES	NO	NA		
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO			
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO			
Red Total Poly	9/28/06	12:10	B	(1) 250, 500, 1L	HNO ₃	YES	NO		✓	
Red Diss. Poly	9/28/06	12:10	B	(1) 250, 500, 1L	HNO ₃	YES	YES		✓	
	/ /	:		250, 500, 1L		YES				

Total Bottles (include duplicate count): (14)

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-Gx)
	AMBER - Glass	(PAHs) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil & Grease) (8081A) (PCBs) (Pesticides)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)

WATER QUALITY DATA			Purge Start Time:	Pump/Bailer Inlet Depth:				
Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp °C	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.	.	.		.
3		.	.	.	.		.
2		.	.	.	.		.
1		.	.	.	.		.
0	B	0.52 0.00 ret	6.21	747	19.58	-69.2	4.80	cloudy, tan

[Casing] [Select A-G] [Cumulative Totals] [Circle units] [Clarity, Color]

Screened from 0 to 10 feet.

SAMPLER: Kelly R. Titkemeier
(PRINTED NAME)

Kelly R. Titkemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



6650 SW Redwood Lane, Suite 110

Portland, OR 97224

Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: DST12

SITE ADDRESS: Seattle, Washington

BLIND ID: DST12-GW

DUP ID:

NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		CLOUDY		RAIN		?		TEMPERATURE: <u>78</u> °F <u>26</u> °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

(Circle appropriate units)

[Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)
9/28/06	13:03	.	.	4.5	.	.	X 1
/ /	:	.	.	.	.	.	X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080
		12" = 5.875					

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[if used]

Bottle Type	Date	Time	Method [§]	Amount & Volume mL	Preservative (circle)	Ice	Filter	pH	√
VOA Glass	9/28/06	13:00	B	(6) 40 ml	(HCl)	(YES)	(NO)		✓
Amber Glass	9/28/06	13:00	B	(6) 250, 500/1L	(None) (HCl) (H ₂ SO ₄)	(YES)	(NO)		✓
White Poly	/ /	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	9/28/06	13:00	B	(1) 250, 500/1L	(HNO ₃)	(YES)	(NO)		✓
Red Diss. Poly	9/28/06	13:00	B	(1) 250, 500/1L	(HNO ₃)	(YES)	(YES)		✓
	/ /	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): (14)

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-Gx)
	AMBER - Glass	(PAHs) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil & Grease) (8081A) (PCBs) (Pesticides)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)

WATER QUALITY DATA

Purge Start Time: 13:00

Pump/Bailer Inlet Depth:

Meas.	Method [§]	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4								
3								
2								
1								
0	B	<u>0.00</u>	<u>6.60</u>	<u>208</u>	<u>20.22</u> - <u>58.8</u>		<u>4.16</u>	<u>cloudy, tan</u>

[Casing]

[Select A-G]

[Cumulative Totals]

[Circle units]

[Clarity, Color]

Screened from 0 to 10 feet.

SAMPLER:

Kelly R. Titkemeier
(PRINTED NAME)

(SIGNATURE)

Kelly R. Titkemeier

Project No. 000111-01	Date: 9-27-06	Well: MW-4
Site Location: Duwamish Shipyard, Seattle, WA	Initial DTB: 15.20'	Final DTB: 17.60'
Name: Kelly Tikemeier	Initial DTW: 8.94'	Final DTW: 9.18'
Development Method: Surge, p-pump, bail	Pore Volume: 1.02	
Total Water Removed: 16.0 gallons	Casing Diameter: 2"	
Water Contained? NO YES	Meter #: 16903	
Estimate of specific capacity or recharge to well:		

Time	Cum. Vol. Removed	Sand/Silt (ml/1000ml)	Temp.	EC	pH	DTW (TOC)	Appearance/Comments
1600	0	—	—	—	—	8.94	BEGIN SURGING W/ SURGE BLOCK
	0	—	—	—	—		END SURGING KRT
1605	0	—	—	—	—	8.94	surge block will not go further than 2-3 ft.
1608	0	—	—	—	—	8.94	Purge with bailer
1610	2.0	300 ^{KRT}	—	—	—	—	Surge with bailer
1625	2.0	—	—	—	—	—	end surging
1626	2.5	300	19.20	505	6.79	—	cloudy, tan (DO 4.96, ORP -33.1)
1637	5.0	275	—	—	—	9.05	end purging w/ bailer
1657	5.0	—	—	—	—	—	begin p-pumping (1/4" OD polyethylene tubing)
1711	7.5	200	17.85	505	6.67	9.13	cloudy, tan (DO 3.95, ORP -18.4)
1722	9.5	<50	17.87	505	6.57	9.13	clear, colorless (DO 3.39, ORP -20.8)
1734	11.0	<50	17.42	432	6.50	9.13	clear, colorless (DO 2.40, ORP -58.8)
1747	12.5	<50	17.71	370	6.54	9.13	clear, colorless (DO 2.56, ORP -61.7)
1754	13.5	<50	17.75	310	6.56	9.13	clear, colorless (DO 1.76, ORP -65.3)
1802	14.5	<20	17.73	358	6.54	9.13	clear, colorless (DO 2.24, ORP -61.2)
1811	15.5	<20	17.82	352	6.53	9.18	clear, colorless (DO 2.19, ORP -46.3)
1812	16.0	—	—	—	—	—	end p-pumping



Project No. 000111-01	Date: 9-28-06	Well: MW-5
Site Location: Duwamish Shipyard, Seattle, WA	Initial DTB: 15.80	Final DTB: 15.80
Name: Kelly R. Titkemeier	Initial DTW: 10.20	Final DTW: 10.30
Development Method: Surge / p-pump / bail	Pore Volume: 0.92	
Total Water Removed:	Casing Diameter: 2"	
Water Contained? NO YES	Meter #: 16903	
Estimate of specific capacity or recharge to well:		

Time	Cum. Vol. Removed	Sand/Silt (ml/1000ml)	Temp.	EC	pH	DTW (TOC)	Appearance/Comments
1342	0	—	—	—	—	10.20	Sulfur-like odor noted when well cap was removed
1349	0	—	—	—	—	10.20	BEGIN SURGING WITH SURGE BLOCK
1359	0	—	—	—	—	—	END SURGING
1359	0	—	—	—	—	—	install 1/4" od polyethylene tubing KRT
1359	0	—	—	—	—	—	begin p-pumping KRT
1412	0	—	—	—	—	—	BEGIN BAILING W/ BAILER
1414	2.0	300	17.35	1063	6.63	10.48	cloudy, dark brn/gray (DO 4.62, ORP -55.4)
1428	5.5	275	—	—	—	—	cloudy, dark brown/gray
1445	5.5	—	—	—	—	—	install 3/8" od polyethylene tubing
1448	5.5	—	—	—	—	10.06	BEGIN P-PUMPING
1458	6.5	200	16.17	1090	6.51	10.65	cloudy, tan (DO 0.82, ORP -73.7)
1506	7.5	—	—	—	—	—	DRUG ^{KRT} LET RECHARGE → tubing too long, cut off ~3 ft
1517	7.5	200	20.10	1080	6.87	10.21	begin p-pumping (resum) (DO 5.05, ORP -68.3)
1540	8.5	200	17.69	1093	6.79	10.25	cloudy, tan (DO 5.66, ORP -70.4)
1545	8.5	—	—	—	—	—	install 1/4" od polyethylene tubing
1547	8.5	—	—	—	—	—	begin/resume p-pumping
1551	9.5	175	15.99	1000	6.49	10.51	cloudy, tan (DO 1.13, ORP -69.5)
1557	10.5	175	15.70	1098	6.51	10.78	cloudy, tan (DO 0.91, ORP -74.8)
1604	11.5	125	15.68	1100	6.52	10.82	cloudy, amber (DO 0.13, ORP -79.9)
1610	12.5	100	15.64	1100	6.52	10.77	cloudy, amber (DO 0.74, ORP -81.9)
1616	13.5	100	15.66	1099	6.53	10.76	sl. cloudy, amber (DO 0.85, ORP -84.2)



pa

Project No. 000111-01 Date: 9-28-06 Well: MW-5
 Site Location: Duwamish Shipyard, Seattle, WA Initial DTB: 15.80 Final DTB: 15.80
 Name: Kelly T. Kemener Initial DTW: 10.20 Final DTW: 10.30
 Development Method: Surge/bail/p-pump Pore Volume: 0.92
 Total Water Removed: Casing Diameter: 2"
 Water Contained? NO YES Meter #: 16903
 Estimate of specific capacity or recharge to well:

Time	Cum. Vol. Removed	Sand/Silt (ml/1000ml)	Temp.	EC	pH	DTW (TOC)	Appearance/Comments
11:20	14.5	100	15.67	1097	6.53	10.77	sl. cloudy, amber (DO 1.08, ORP -85.3)
11:24	15.5	100	15.68	1097	6.53	10.77	v. sl. cloudy, amber (DO 0.99, ORP -85.7)
11:27	16.5	<100	15.71	1098	6.54	10.80	clear, amber (DO 1.13, ORP -87.7)
11:30	17.5	<100	15.72	1098	6.53	10.82	clear, amber (DO 1.14, ORP -87.8)
11:39	18.5	<50	15.73	1099	6.55	10.78	clear, amber (DO 1.28, ORP -89.2)
11:47	19.5	<20	15.72	1098	6.54	10.76	clear, amber (DO 1.41, ORP -91.1)
11:55	20.5	<10	15.65	1098	6.55	10.77	clear, amber (DO 1.57, ORP -92.0)
11:56	21.0	—	—	—	—	—	end p-pumping

unidentifiable odor from water/well

FIELD SAMPLING DATA SHEET



ANCHOR
ENVIRONMENTAL, L.L.C.

6650 SW Redwood Lane, Suite 110

Portland, OR 97224

Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: MW-4

SITE ADDRESS: Seattle, Washington

BLIND ID: MW4-GW-060929

DUP ID:

NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		CLOUDY		RAIN		?		TEMPERATURE: °F <u>72</u> °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

(Circle appropriate units)
[Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)
9/29/06	09:06	17.20	/	9.03	/	8.17	X 1 1.33
/ /	:	.	/	.	/	.	X 3 4.00
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080
			12" = 5.875				

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
VOA Glass	9/29/06	09:45	B	(6) (40 ml)	(HCl)	(YES)	(NO)		✓
Amber Glass	9/29/06	09:45	B	(6) (250/500, 1L)	(None) (HCl) (H ₂ SO ₄)	(YES)	(NO)		✓
White Poly	/ /	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	9/29/06	09:45	B	(1) (250/500, 1L)	(HNO ₃)	(YES)	(NO)		✓
Red Diss. Poly	9/29/06	09:45	B	(1) (250/500, 1L)	(HNO ₃)	(YES)	(YES)		✓
	/ /	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): (14)

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-Gx)
	AMBER - Glass	(PAHs) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil & Grease) (8081A) (PCBs) (Pesticides)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)

WATER QUALITY DATA

Purge Start Time: 09:06

Pump/Bailer Inlet Depth:

Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp °C	Other	Diss O ₂ (mg/l)	Water Quality
4	B	5.6	6.49	508	17.64	-87.6	1.18	clear, colorless
3	B	4.2	6.49	509	17.64	-86.6	1.19	clear, colorless
2	B	2.8	6.48	507	17.64	-79.8	1.16	clear, colorless
1	B	1.4	6.45	507	17.59	-65.0	1.00	clear, colorless
0		0.00	.	.	.	.	.

[Casing] [Select A-G] [Cumulative Totals]

[Circle units]

[Clarity, Color]

SAMPLER:

Kelly R. Titkemeier
(PRINTED NAME)

(SIGNATURE)

Kelly R. Titkemeier

FIELD SAMPLING DATA SHEET



6650 SW Redwood Lane, Suite 110

Portland, OR 97224

Office: (503) 670-1108 Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: MW-5

SITE ADDRESS: Seattle, Washington

BLIND ID: MW5-GW-060929

DUP ID: NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	(L) LIGHT	MEDIUM	HEAVY	
WEATHER:	(S) SUNNY		CLOUDY		RAIN			?		TEMPERATURE: (F) 72. °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness] [Water Column]

(Circle appropriate units)
[Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)	
9/29/06	10:50	15.80	/	10.60	/	5.20	X 1 0.85	
/ /	:						X 3 2.54	
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other -

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative (circle)	Ice	Filter	pH	✓
VOA Glass	9/29/06	11:45	B	(6) 40 ml	(HCl)	(YES)	(NO)		✓
Amber Glass	9/29/06	11:45	B	(6) 250, 500 1L	(None) (HCl) (H ₂ SO ₄)	(YES)	(NO)		✓
White Poly	/ /	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	9/29/06	11:45	B	(1) 250, 500 1L	(HNO ₃)	(YES)	(NO)		✓
Red Diss. Poly	9/29/06	11:45	B	(1) 250, 500 1L	(HNO ₃)	(YES)	(YES)		✓
	/ /	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): (14)

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-Gx)
	AMBER - Glass	(PAHs) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil & Grease) (8081A) (PCBs) (Pesticides)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)

WATER QUALITY DATA

Purge Start Time: 10:51

Pump/Bailer Inlet Depth:

Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4	B	3.6	6.51	1119	15.75	-103.6	0.83	sl. cloudy, amber
3	B	2.7	6.51	1118	15.73	-104.6	0.98	sl. cloudy, amber
2	B	1.8	6.52	1119	15.72	-103.6	1.04	cloudy, amber
1	B	0.9	6.51	1118	15.76	-101.8	1.76	cloudy, amber
0		0.00		H	15.72	RT		
[Casing]	[Select A-G]	[Cumulative Totals]			[Circle units]			[Clarity, Color]
5	B	4.5	6.52	1116	15.72	-108.8	0.73	clear, amber

SAMPLER:

Kelly R. Tikkemeier
(PRINTED NAME)

Kelly R. Tikkemeier
(SIGNATURE)

FIELD SAMPLING DATA SHEET



ANCHOR
ENVIRONMENTAL, L.L.C.

6650 SW Redwood Lane, Suite 110

Portland, OR 97224

Office: (503) 670-1108

Fax: (503) 670-1128

PROJECT NAME: Duwamish Shipyard, Inc.

WELL ID: FIELD BLANK

SITE ADDRESS: Seattle, Washington

BLIND ID: MW4-GWFB-060929

DUP ID:

NA

WIND FROM:	N	NE	E	SE	S	SW	W	NW	(L) LIGHT	MEDIUM	HEAVY
WEATHER:	(S) SUNNY		CLOUDY		RAIN		?		TEMPERATURE: (F) 72 °C		

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

[Water Column]

(Circle appropriate unit)
[Water Column x Gal/ft]

Date	Time	DT-Bottom	BT-Product	DT-Water	DTP-DTW	DTB-DTW	Volume (gal)
/ /	:	X 1
/ /	:	X 3
Gal/ft = (dia./2) ² x 0.163		1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080
							12" = 5.875

§ METHODS: (A) Submersible Pump (B) Peristaltic Pump (C) Disposable Bailer (D) PVC/Teflon Bailer (E) Dedicated Bailer (F) Dedicated Pump (G) Other =

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Sample Depth:

[if used]

Bottle Type	Date	Time	Method §	Amount & Volume mL	Preservative (circle)	Ice	Filter	pH	✓
VOA Glass	9/29/06	10:30	B	(6) 40 ml	(HCl)	(YES)	(NO)		✓
Amber Glass	9/29/06	10:30	B	(6) 250, 500, 1L	(None) (HCl) (H ₂ SO ₄)	(YES)	(NO)		✓
White Poly	/ /	:		250, 500, 1L	None	YES	NO	NA	
Yellow Poly	/ /	:		250, 500, 1L	H ₂ SO ₄	YES	NO		
Green Poly	/ /	:		250, 500, 1L	NaOH	YES	NO		
Red Total Poly	9/29/06	10:30	B	(1) 250, 500, 1L	(HNO ₃)	(YES)	(NO)		✓
Red Diss. Poly	9/29/06	10:30	B	(1) 250, 500, 1L	(HNO ₃)	(YES)	(YES)		✓
	/ /	:		250, 500, 1L		YES			

Total Bottles (include duplicate count): (14)

Analysis Allowed per Bottle Type	BOTTLE TYPE	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	VOA - Glass	(8021) (8260B) (BTEX) (NWTPH-Gx)
	AMBER - Glass	(PAHs) (TPH-HCID) (NWTPH-Dx) (TPH-418.1) (Oil & Grease) (8081A) (PCBs) (Pesticides)
	WHITE - Poly	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO ₃ /CO ₃) (Cl) (SO ₄) (NO ₃) (NO ₂) (F)
	YELLOW - Poly	(COD) (TOC) (Total PO ₄) (Total Keldahl Nitrogen) (NH ₃) (NO ₃ /NO ₂)
	GREEN - Poly	(Cyanide)
	RED TOTAL - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	RED DISSOLVED - Poly	(As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Hg) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)

WATER QUALITY DATA Purge Start Time: N/A Pump/Bailer Inlet Depth:

Meas.	Method §	Purged (gal)	pH	E Cond (µS)	°F Temp (°C)	Other	Diss O ₂ (mg/l)	Water Quality
4		.	.		.		.
3		.	.		.		.
2		.	.		.		.
1		.	.		.		.
0	B	0.00	7.06	5	17.43	258.1	10.85	clear, colorless

[Casing] [Select A-G] [Cumulative Totals] [Circle units] [Clarity, Color]

SAMPLER: Kelly R. Titkemeier
(PRINTED NAME)

Kelly R. Titkemeier
(SIGNATURE)

Catch Basin Data 9/29/06

Client/Project Name Duwamish Shipyard, Inc.
 Project Number: 000111-01/ Task 8
 Geologist/Engineer: John Renda

Boring #	Sample Time	CB dimensions (in)	CB depth (in)	CB bottom material	CB pipe configuration	Water Depth (in)	Sediment Depth (in)	Sediment Notes	Observations
DSI 13	800	16X20	16	concrete	outlet 6" from bottom (feeds to DSI 14)	6	1	loose sandy silt with leaves and wood fibers	sheen on water and sediment
DSI 14	830	24X33	40	concrete	18" culvert (east-west)	0	4	silty sand, grayish-brown, moist to wet	--
DSI 15	900	26(circular)	>48 (20" to top of sediment)	unknown (could not penetrate thru full sediment depth)	invert on east side - mouth of invert 16" below top of CB	4	>28	silty sand, grayish-brown, fine gravel, organics, leaves and wood; wet, loose	pushed 28" into sediment w/out refusal
DSI 16	920	30X30	30	concrete	sump pump with outflow pipe to north	4	9	silty sand, grayish-brown, organic debris, sand blast grit	--
DSI 17	940	16X19	36	concrete	east-west 16" pipe; 8" pipe from S-SE	0	1	silty sand, dark-grayish brown; moist to wet	--
DSI 18	950	18X18	35 ^a	dirt	pipes on east, west, and south	0	22 ^a	silty sand, grayish-brown, moist	steel plate on top
DSI 19	1015	26X18	40 ^a	dirt	pipes to north, south, and west	2	8 ^a	silty-sand, organic debris, cigarette butts	--
DSI 20	1050	16X23	20	concrete	pipe on west side (to DSI 17)	1	9	sandy-silt, strong decomposing odor (muck)	Observed a 0.25"-thick oil, free product oil - clear amber, fresh. Approx. 10 gal. of water pumped out and sediment removed
DSI 21	1130	24X28	56	irregular surface - solid, not flat	pipe from north (DSI 19) and pipe running east-west	2	2	silty-sand, wet, grayish-brown	
DSI 22	1215	36X48	77	steel	inflow pipe from south, outflow on north	18	17	high organic sandy-silt, dark-gray to grayish-brown; twigs, wood chips, leaves	sheen on water and sediment
DSI 23	not sampled	24X17	77	wood or metal (not concrete)	pipes west to northeast	3	17	not sampled	not sampled - too deep with onsite equipment

Notes: a = Dirt bottom, contact at sediment/dirt interface not defined.

APPENDIX C
CHAIN OF CUSTODY FORMS

06-17884 to 06-17900

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: JY55 Turn-around Requested:

Page: 1 of 2

ARI Client Company: Anchor Environmental LLC Phone: 206-287-9130

Date: 9/27/06 Ice Present? Y

Client Contact: Rebecca Desrosiers

No. of Coolers: 6 Cooler Temps: 5, 8, 2, 4, 3
1, 4, 1

Client Project Name: Duwamish Shipyard, Inc (DSI)

Analysis Requested

Client Project #: 000111-01 Samplers: John Renda, Kelly Tittkemeier

Sample ID	Date	Time	Matrix	No. Containers	Toc/Ts	VOCs & 608	Pest/PCBs/PAHs	MTPH-G MUTPH-Dx	Total Metals As, Cd, Cr, Cu, Pb, Hg, Ag, Zn	Dissolved Metals As, Cd, Cr, Cu, Pb, Hg, Ag, Zn			Notes/Comments	
DSI 01-SO-A	9/27/06	1130	Soil	9	X	X	X	X	X					
DSI 01-SO-B		1140	Soil	9	X	X	X	X	X					
DSI 01-GW		1210	Water	14		X	X	X	X	X				
DSI 02-SO-A		1020	Soil	9	X	X	X	X	X					
DSI 02-SO-B		1030	Soil	9	X	X	X	X	X					
DSI 02-GW		1115	Water	14		X	X	X	X	X				
DSI 03-SO-A		0920	Soil	9	X	X	X	X	X					
DSI 03-SO-B		0930	Soil	9	X	X	X	X	X					
DSI 03-GW		1000	Water	14		X	X	X	X	X				

Comments/Special Instructions	Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: <u>John J Renda</u>	Printed Name: <u>BOB CONGLETON</u>	Printed Name:	Printed Name:
	Company: <u>Anchor</u>	Company: <u>ARI</u>	Company:	Company:
	Date & Time: <u>9/28/06 0830</u>	Date & Time: <u>9/28/06 830</u>	Date & Time:	Date & Time:



Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: _____ Turn-around Requested: _____

Page: 2 of 2



Analytical Resources, Incorporated
 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)

ARI Client Company: Anchor Environmental LLC Phone: 206-287-9130

Date: 9/27/06 Ice Present? Y

Client Contact: Rebecca Desrosiers

No. of Coolers: 6 Cooler Temps: 5, 8, 0, 4, 3, 1.0, 4, 1

Client Project Name: Duwamish Shipyard, Inc (DSI)

Analysis Requested _____ Notes/Comments _____

Client Project #: 000111-01 Samplers: John Renda, Kelly Tittkemeyer

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested										Notes/Comments
					Toc/TS	VOCs/8260B	PEST/PCBs/PAAH	NWSTPH-G NWSTPH-DX	Total Metals As, Cd, Cr, Cu	Pb, Hg, Ag, Zn	Dissolved Metals As, Cd, Cr, Cu,	Pb, Hg, Ag, Zn	NWSTPH-G		
DSIØ4-SO-A	9/27/06	1230	Soil	9	X	X	X	X	X						
DSIØ4-SO-B		1240	Soil	9	X	X	X	X	X						
DSIØ4-GW		1310	Water	14		X	X	X	X	X					
DSIØ5-SO-A		1315	Soil	9	X	X	X	X	X						
DSIØ5-SO-B		1330	Soil	9	X	X	X	X	X						
DSIØ5-GW		1345	Water	14		X	X	X	X	X					
DSIØ6-SO-A		1405	Soil	9	X	X	X	X	X						
DSIØ6-SO-B		1420	Soil	9	X	X	X	X	X						
DSIØ6-GW		1445	Water	14		X	X	X	X	X					
TB-060927			Water	2		X									

Comments/Special Instructions	Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Relinquished by: (Signature) _____	Received by: (Signature) _____
	Printed Name: <u>John J Renda</u>	Printed Name: <u>Bob Conleyton</u>	Printed Name: _____	Printed Name: _____
	Company: <u>Anchor</u>	Company: <u>ARI</u>	Company: _____	Company: _____
	Date & Time: <u>9/28/06 0830</u>	Date & Time: <u>9/28/06 830</u>	Date & Time: _____	Date & Time: _____

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Cooler Receipt Form



ARI Client: Ancutor Project Name: PSI
COC NO.: NA Delivered By: ARI COURIER
Tracking NO.: NA Date: 9/28/06
ARI Job No.: J455 Lims NO.: 06-17884-0617108

Preliminary Examination Phase:

1. Were intact, properly signed and dated custody seals attached
To the outside of the cooler? YES NO
2. Were custody papers included with the cooler YES NO
3. Were custody papers properly filled out (ink, signed etc.)? YES NO
4. Complete custody forms and attach all shipping documents OK NA

Cooler Accepted BY: Bob Conzetta Date: 9/28/06 Time: 830

Log-IN Phase:

5. Was a temperature blank include in the cooler? YES NO
6. Record Cooler Temperature 0.4, 1.6, 3, 4.0, 5.8 °C
7. What kind of packing material was used? ICE
8. Was sufficient ice used (if appropriate)? YES NO
9. Were all bottles sealed in separate plastic bags? YES NO
10. Did all bottles arrive in good condition (unbroken)? YES NO
11. Were all bottle labels complete and legible? YES NO
12. Did all bottle labels and tags agree with custody papers? YES NO
13. Were all bottles used correct for the requested analyses? YES NO
14. Do any of the analyses (bottles) require preservative?
(If so, Preservation checklist must be attached) YES NO
15. Were all VOA vials free of air bubbles? YES NO
16. Was sufficient amount of sample sent in each bottle? YES NO
17. Notify Project Manager of any discrepancies or concerns OK NA

9/28/06

Cooler Opened By: BC Date: 9/28/06 Time: 830

Explain any discrepancies or negative responses:

Soils logged for hexavalent Chromium per QAPP's bottles received

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 5467	Turn-around Requested:	Page: 1 of 2
ARI Client Company: Anchor Environmental, LLC	Phone: 206-287-9130	Date: 9/28/06
Client Contact: Rebecca Desrosiers		Ice Present?
Client Project Name: Duwamish Shipyard Inc (DSI)		No. of Coolers:
Client Project #: 000111-01	Samplers: John Renda, Kelly Tittkemeier	Cooler Temps:



Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested										Notes/Comments
					TOC/TS	VOCs: 8260B	Pest/PCBs/PAHs	NWTPH-G	NWTPH-Dx	Total Metals: As, Cd, Cr, Cu, Pb, Hg, Ag, Zn	Dissolved Metals: As, Cd, Cr, Cu, Pb, Hg, Ag, Zn	Soil Chloride			
DSI 07-S0-A	9/28/06	0810	Soil	9	X	X	X	X	X	X		X			
DSI 07-S0-B		0820	Soil	9	X	X	X	X	X	X		X			
DSI 07-GW		0900	Water	14		X	X	X	X	X	X				
DSI 08-S0-A		0920	Soil	9	X	X	X	X	X	X		X			
DSI 08-S0-B		0930	Soil	9	X	X	X	X	X	X		X			
DSI 08-GW		0950	Water	14		X	X	X	X	X	X				
DSI 09-S0-A		1010	Soil	9	X	X	X	X	X	X		X			
DSI 09-S0-B		1020	Soil	9	X	X	X	X	X	X		X			
DSI 09-GW		1040	Water	14		X	X	X	X	X	X				
DSI 57-GW		0910	Water	14		X	X	X	X	X	X				

Comments/Special Instructions	Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: John Renda	Printed Name: Bob Congleton	Printed Name:	Printed Name:
	Company: Anchor	Company: ARI	Company:	Company:
	Date & Time: 9/29/06 0830	Date & Time: 9/29/06 130	Date & Time:	Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: _____ Turn-around Requested: _____

Page: 2 of 2



Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Client Company: Anchor Environmental, LLC Phone: 206-287-9130

Date: 9/28/06 Ice Present? _____

Client Contact: Rebecca Desrosiers

No. of Coolers: _____ Cooler Temps: _____

Client Project Name: Duwamish Shipyard, Inc (DSI)

Analysis Requested

Client Project #: 000111-01 Samplers: JOHN RENDA, Kelly Titkemeier

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested										Notes/Comments
					TOC/TS	VOCs 8260B	Pest/PCB/PAHs	NWTPA-G	NWTPA-Dx	Total Metals As, Cd, Cr, Cu, Pb, Hg, Ag, Zn	Dissolved Metals As, Cd, Cr, Cu, Pb, Hg, Ag, Zn	NWTPA-6x	Soil Chromium VI		
DSI 10 DSI 10-SO-A	9/28/06	1100	Soil	9	X	X	X	X	X	X			X		
DSI 10-SO-B		1110	Soil	9	X	X	X	X	X	X			X		
DSI 10-GW		1125	Water	14		X	X	X	X	X	X				
DSI 11-SO-A		1145	Soil	9	X	X	X	X	X	X			X		
DSI 11-SO-B		1150	Soil	9	X	X	X	X	X	X			X		
DSI 11-GW		1210	Water	14		X	X	X	X	X	X				
DSI 12-SO-A		1230	Soil	9	X	X	X	X	X	X			X		
DSI 12-SO-B		1240	Soil	9	X	X	X	X	X	X			X		
DSI 12-GW		1300	Water	14		X	X	X	X	X	X				
TB-060928			Water	2		X						X			

Comments/Special Instructions	Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Relinquished by: (Signature) _____	Received by: (Signature) _____
	Printed Name: <u>JOHN J RENDA</u>	Printed Name: <u>BOB LANGLETON</u>	Printed Name: _____	Printed Name: _____
	Company: <u>Anchor</u>	Company: <u>ARI</u>	Company: _____	Company: _____
	Date & Time: <u>9/29/06 0830</u>	Date & Time: <u>9/29/06 830</u>	Date & Time: _____	Date & Time: _____

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Cooler Receipt Form



ARI Client: Anchor Project Name: Danversish Shepard
COC NO.: NA Delivered By: Hand
Tracking NO.: NA Date: 9/29/06
ARI Job No.: JY67 Lims NO.: 06-17968 to 06-17994

Preliminary Examination Phase:

- 1. Were intact, properly signed and dated custody seals attached
To the outside of the cooler? YES NO
- 2. Were custody papers included with the cooler YES NO
- 3. Were custody papers properly filled out (ink, signed etc.)? YES NO
- 4. Complete custody forms and attach all shipping documents OK NA

Cooler Accepted BY: Bode Conley Date: 9/29/06 Time: 8:30

Log-IN Phase:

- 5. Was a temperature blank include in the cooler? YES NO
- 6. Record Cooler Temperature 5, 5, 3, 1.5, 3, 2 °C
- 7. What kind of packing material was used? ICE
- 8. Was sufficient ice used (if appropriate)? YES NO
- 9. Were all bottles sealed in separate plastic bags? YES NO
- 10. Did all bottles arrive in good condition (unbroken)? YES NO
- 11. Were all bottle labels complete and legible? YES NO
- 12. Did all bottle labels and tags agree with custody papers? YES NO
- 13. Were all bottles used correct for the requested analyses? YES NO
- 14. Do any of the analyses (bottles) require preservative?
(If so, Preservation checklist must be attached) YES NO
- 15. Were all VOA vials free of air bubbles? YES NO
- 16. Was sufficient amount of sample sent in each bottle? YES NO
- 17. Notify Project Manager of any discrepancies or concerns OK NA

9/29/06

Cooler Opened By: BC Date: 9/29/06 Time: 8:30

Explain any discrepancies or negative responses:

Chain of Custody Record & Laboratory Analysis Request

4, 0, 3, 0

ARI Assigned Number: 5488 Turn-around Requested:

Page: 1 of 1



Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Client Company: Anchor Environmental, LLC Phone: 206-287-9130

Date: 9/29/06 Ice Present? Y

Client Contact: Rebecca Desrosiers

No. of Coolers: 2 Cooler Temps: 3.0, 4.0

Client Project Name: Duwamish Shipyard, Inc (DST)

Analysis Requested										Notes/Comments
VOCs 826DB	PEST/PCBs	PAHs	NWTPH-6x	NWTPH-Dx	Total Metals As, Cd, Cr, Cu	Pb, Hg, Ag, Zn	Dissolved Metals As, Cd, Cr, Cu,	Pb, Hg, Ag, Zn		

Client Project #: 000111-01 Samplers: John Renda, Kelly Titkemeier

Sample ID	Date	Time	Matrix	No. Containers	VOCs 826DB	PEST/PCBs	PAHs	NWTPH-6x	NWTPH-Dx	Total Metals As, Cd, Cr, Cu	Pb, Hg, Ag, Zn	Dissolved Metals As, Cd, Cr, Cu,	Pb, Hg, Ag, Zn	Notes/Comments
MW4-GWFB-060929	9/29/06	1030	Water	14	X	X	X	X	X	X	X			
MW-4-GW-060929	|	0945	Water	14	X	X	X	X	X	X	X			
MW-5-GW-060929	|	1145	Water	14	X	X	X	X	X	X	X			
TB-060929	↓	NA	Water	2	X			X						

Comments/Special Instructions	Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: <u>John Renda</u>	Printed Name: <u>Bob Congleton</u>	Printed Name:	Printed Name:
	Company: <u>Anchor</u>	Company: <u>ARI</u>	Company:	Company:
	Date & Time: <u>9/29/06 14:30</u>	Date & Time: <u>9/29/06 1430</u>	Date & Time:	Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Cooler Receipt Form



ARI Client: Anchor Project Name: Duwamish SHIP.
COC NO.: _____ Delivered By: HAN
Tracking NO.: _____ Date: 9/29/06
ARI Job No.: 5487 Lims NO.: _____

Preliminary Examination Phase:

- 1. Were intact, properly signed and dated custody seals attached
To the outside of the cooler? YES NO
- 2. Were custody papers included with the cooler YES NO
- 3. Were custody papers properly filled out (ink, signed etc.)? YES NO
- 4. Complete custody forms and attach all shipping documents OK NA

Cooler Accepted BY: Bob Conger Date: 9/29/06 Time: 1430

Log-IN Phase:

- 5. Was a temperature blank include in the cooler? YES NO
- 6. Record Cooler Temperature..... 4.0, 3.0 °C
- 7. What kind of packing material was used? ICE
- 8. Was sufficient ice used (if appropriate)? YES NO
- 9. Were all bottles sealed in separate plastic bags? YES NO
- 10. Did all bottles arrive in good condition (unbroken)? YES NO
- 11. Were all bottle labels complete and legible? YES NO
- 12. Did all bottle labels and tags agree with custody papers? YES NO
- 13. Were all bottles used correct for the requested analyses? YES NO
- 14. Do any of the analyses (bottles) require preservative?
(If so, Preservation checklist must be attached) YES NO
- 15. Were all VOA vials free of air bubbles? YES NO
- 16. Was sufficient amount of sample sent in each bottle? YES NO
- 17. Notify Project Manager of any discrepancies or concerns..... OK NA

Cooler Opened By: Bc Date: 9/29/06 Time: 1430

Explain any discrepancies or negative responses:

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 5700 Turn-around Requested:

Page: 1 of 1



Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Client Company: Anchor Environmental LLC Phone: 206-287-9130

Date: 9/29/06 Ice Present? Y

Client Contact: Rebecca Desrosiers

No. of Coolers: 2 Cooler Temps: 4.0, 3.0

Client Project Name: Duwamish Shipyard, Inc

Analysis Requested							Notes/Comments
MPH-G	NWTPA-DX	TOC/TS	PAHs, Pesticides PCBs	Total Metals As, Cd, Cr, Cu Pb, Hg, Ag, Zn			

Client Project #: 00011-01 Samplers: John Renda, Kelly Titkemeier

Sample ID	Date	Time	Matrix	No. Containers	MPH-G	NWTPA-DX	TOC/TS	PAHs, Pesticides PCBs	Total Metals As, Cd, Cr, Cu Pb, Hg, Ag, Zn					Notes/Comments
DSI13-CB-060929	9/29/06	0800	Sed	3										Archive
DSI14-CB-060929		0830	Sed	3										Archive
DSI15-CB-060929		0900	Sed	3										Archive
DSI16-CB-060929		0920	Sed	3										Archive
DSI17-CB-060929		0940	Sed	3										Archive
DSI18-CB-060929		0950	Sed	3										Archive
DSI19-CB-060929		1015	Sed	3										Archive
DSI20-CB-060929		1050	Sed	4										Archive
DSI21-CB-060929		1130	Sed	3										Archive
DSI22-CB-060929		1215	Sed	3	X	X	X	X						

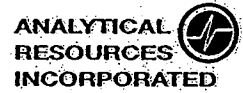
Comments/Special Instructions	Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: <u>JOHN J RENDA</u>	Printed Name: <u>BOB CONSLTON</u>	Printed Name:	Printed Name:
	Company: <u>Anchor</u>	Company: <u>ARI</u>	Company:	Company:
	Date & Time: <u>9/29/06 1430</u>	Date & Time: <u>9/29/06 1430</u>	Date & Time:	Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

0002

Cooler Receipt Form



ARI Client: Ancutor Project Name: Duwamish Ship
COC NO.: _____ Delivered By: HAND
Tracking NO.: _____ Date: _____
ARI Job No.: _____ Lims NO.: _____

Preliminary Examination Phase:

- Were intact, properly signed and dated custody seals attached
To the outside of the cooler? YES NO
- Were custody papers included with the cooler YES NO
- Were custody papers properly filled out (ink, signed etc.)? YES NO
- Complete custody forms and attach all shipping documents OK NA

Cooler Accepted BY: Bob Conger Date: 9/29/06 Time: 1430

Log-IN Phase:

- Was a temperature blank include in the cooler? YES NO
- Record Cooler Temperature..... 4.0, 3.0 °C
- What kind of packing material was used? ICE
- Was sufficient ice used (if appropriate)? YES NO
- Were all bottles sealed in separate plastic bags? YES NO
- Did all bottles arrive in good condition (unbroken)? YES NO
- Were all bottle labels complete and legible? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were all bottles used correct for the requested analyses? YES NO
- Do any of the analyses (bottles) require preservative?
(If so, Preservation checklist must be attached) YES NO
- Were all VOA vials free of air bubbles? YES NO
- Was sufficient amount of sample sent in each bottle? YES NO
- Notify Project Manager of any discrepancies or concerns OK NA

Cooler Opened By: 3c Date: 9/29/06 Time: 1430

Explain any discrepancies or negative responses:

APPENDIX D
DATA VALIDATION REVIEW REPORT

Data Validation Review Report

Project: Duwamish Shipyard, Inc.

Project Number: 000111-01

Date: December 22, 2006

This report summarizes the review of analytical results for 24 soil samples, 14 groundwater samples, two trip blanks, and a field blank. The samples were collected on September 27 and 28, 2006 at the Duwamish Shipyard property in Seattle, Washington by Anchor Environmental, L.L.C. (Anchor). Anchor submitted the samples to Analytical Resources Inc. (ARI) in Tukwila, Washington. ARI analyzed the samples for polynuclear aromatic hydrocarbons (PAHs) by U.S. Environmental Protection Agency (USEPA) Method 8270C by selective ion monitoring (SIM); volatile organic compound (VOC) analysis by USEPA Method 8260B; polychlorinated biphenyls (PCBs) by USEPA Method 8082, organochlorine pesticides (Pesticides) by USEPA Method 8081A, total petroleum hydrocarbons as gasoline by Washington Department of Ecology (Ecology) Method NWTPH-Gx, total petroleum hydrocarbons as diesel and residual range organics by Ecology Method NWTPH-Dx, total and dissolved metals by USEPA Methods 6010B/200.8/7471A/7470A, total organic carbon (TOC) by Plumb 1981, hexavalent chromium by Standard Method 3500Cr-D, and total solids (TS) by USEPA Method 160.3m.

ARI project identification numbers (IDs) JY55, JY88, JZ00 and JY67 were reviewed. Table 1 presents the samples reviewed in this report.

Table 1
Sample Reference Table

Sample ID	Lab ID	Matrix	Analysis Requested
DSI101-SO-A	JY55A	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI101-SO-B	JY55B	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI102-SO-A	JY55C	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS

Table 1
Sample Reference Table

Sample ID	Lab ID	Matrix	Analysis Requested
DSI102-SO-B	JY55D	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI103-SO-A	JY55E	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI103-SO-B	JY55F	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI104-SO-A	JY55G	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI104-SO-B	JY55H	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI105-SO-A	JY55I	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI105-SO-B	JY55J	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI106-SO-A	JY55K	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI106-SO-B	JY55L	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI01-GW	JY55M	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
DSI02-GW	JY55N	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
DSI03-GW	JY55O	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
DSI04-GW	JY55P	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
DSI05-GW	JY55Q	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
DSI06-GW	JY55R	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
MW4-GW-FB-060929	JY88	Water	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals

Table 1
Sample Reference Table

Sample ID	Lab ID	Matrix	Analysis Requested
MW-4-GW-060929	JY88	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
MW-5-GW-060929	JY88	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
TB-060929	JY88	Water	VOC, NWTPH-Gx,
DSI22-CB-060929	JZ00	Catch Basin Solids	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, TS
DSI07-SO-A	JY67A	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI07-SO-B	JY67B	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI07-GW	JY67M	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
DSI08-SO-A	JY67C	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI08-SO-B	JY67D	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI08-GW	JY67N	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
DSI09-SO-A	JY67E	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI09-SO-B	JY67F	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI09-GW	JY67O	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
DSI57-GW	JY67P	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
DSI10-SO-A	JY67G	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI10-SO-B	JY67H	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI10-GW	JY67Q	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals

Table 1
Sample Reference Table

Sample ID	Lab ID	Matrix	Analysis Requested
DSI11-SO-A	JY67I	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI11-SO-B	JY67J	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI11-GW	JY67R	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
DSI12-SO-A	JY67K	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI12-SO-B	JY67L	Soil	VOC, PAHs, PCBs, Pesticides, TOC, NWTPH-Gx, NWTPH-Dx, total metals, hexavalent chromium, TS
DSI12-GW	JY67S	Groundwater	VOC, PAHs, PCBs, Pesticides, NWTPH-Gx, NWTPH-Dx, total metals, dissolved metals
TB-060928	JY67T	Water	VOC, NWTPH-Gx

Data Validation and Qualifications

The following comments refer to the laboratory's performance in meeting the quality assurance/quality control (QA/QC) guidelines outlined in the data quality objectives section of the Quality Assurance Project Plan (QAPP) and the statement of work. Laboratory results were reviewed following USEPA guidelines (USEPA 1999; 2004). Unless noted in this report, laboratory results for the samples listed above were within QC criteria.

Laboratory Data Package and Field Documentation

Field documentation was checked for completeness and accuracy. The following were noted by ARI at the time of sample receipt: the samples were received in good condition and were consistent with the accompanying chain of custody as documented on the Sample Receipt Form.

Holding Times and Sample Preservation

Samples were appropriately preserved and analyses were conducted within holding times with the exceptions noted below. Samples were frozen once extractions or digestions had been completed by the laboratory except for the volatile organics.

The following exceptions were noted:

- Sample DSI11-SO-B RE for organochlorine pesticides was re-extracted outside the holding time. All associated non-detects have been qualified as “UJ” to indicate the results are estimated.
- Sample DSI22-CB-060929 RE for semivolatile organic compounds (SVOC) analysis was re-extracted outside the holding time. All associated non-detects have been qualified as “UJ” to indicate the results are estimated. All associated detects have been qualified as “J” to indicate the value reported is estimated.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequencies. No analytes were detected in the laboratory method blanks except for the following:

- The method blanks (ARI-JY55) for the soil VOC analysis contained methylene chloride and acetone. An action limit of 10 times the blank contamination was established. Associated samples with detected amounts less than the action limit have the reporting limit elevated to the amount detected in the sample and qualified as “U” to show the new result is undetected at the new raised reporting limit. Samples that contain the analyte above the action limit were not qualified.
- The water method blank for the PAHs in ARI-JY55 contained 2-methylnaphthalene. An action limit of 10 times the blank contamination was established. Associated samples with detected amounts less than the action limit have the reporting limit elevated to the amount detected in the sample and qualified as “U” to show the new result is undetected at the new raised reporting limit. Samples that contain the analyte above the action limit were not qualified.
- The total method blank (JY55) contained zinc at 0.7 micrograms per kilogram ($\mu\text{g}/\text{kg}$). An action limit of five times the blank contamination was established. Associated samples all contained zinc greater than the action limit. None of the data were qualified based on this finding.
- The water method blank for the VOC in ARI-JY67 contained acetone at 8.5 $\mu\text{g}/\text{kg}$. An action limit of 10 times the blank contamination was established. Associated samples with detected amounts less than the action limit have the reporting limit elevated to the amount detected in the sample and qualified as “U” to show the new

result is undetected at the new raised reporting limit. Samples that contain the analyte above the action limit were not qualified.

- The PAH method blank (JY67) contained 0.01 micrograms per liter ($\mu\text{g/L}$) of 2-methylnaphthalene. An action limit of five times the blank contamination was established. Associated samples with detected amounts less than the action limit have the reporting limit elevated to the amount detected in the sample and qualified as "U" to show the new result is undetected at the new raised reporting limit. Samples that contain the analyte above the action limit were not qualified.
- The method blank for total metals contained zinc at 0.9 milligrams per kilogram (mg/kg) in JZ00. The associated samples contained greater than 10 times the blank contamination. None of the data were qualified based on this finding.
- The method blank for the SVOC original analysis (JZ00) contained phenol above the MDL and below the reporting limit at $15 \mu\text{g/kg}$. An action limit of 10 times the blank contamination was established. The associated sample contained the analyte above the action limit. None of the data were qualified based on this finding.
- The method blank for the SVOC re-extracted analysis (JZ00) contained bis (2-ethylhexyl) phthalate above the method detection limit (MDL) and below the reporting limit at $13 \mu\text{g/kg}$. An action limit of 10 times the blank contamination was established. The associated sample contained the analyte above the action limit. None of the data were qualified based on this finding.

Field Quality Control

Field Duplicates

One field duplicate was identified in the chain of custody: DSI07-GW and DSI57-GW. The duplicate relative percent differences (RPDs) were within laboratory criteria except for the total metals data. None of the data were qualified due to these results.

Field Blanks

The field blank was analyzed in conjunction with the data found in ARI-JY88. The following analytes were detected in the field blank:

- Methylene chloride was detected in the VOC analysis at $0.4 \mu\text{g/L}$ and acetone at $4.7 \mu\text{g/L}$.

- Naphthalene was detected in the SVOC analysis at 0.07µg/L.
- Motor oil was detected in the NWTPH-Dx analysis at 0.50 mg/L.
- Total zinc was detected at 6 µg/L.

Trip Blanks

Trip blanks were analyzed in conjunction with the VOC analyses. All trip blanks were free of analytes of interest except the following:

- The VOC trip blank for JY67 (TB-060928) contained acetone at 3.9 µg/L and toluene at 0.3 µg/L.
- The VOC trip blank for JY88 (TB-060929) contained acetone at 0.3 µg/L.

Surrogate Recoveries

Surrogate recoveries were within the laboratory-specified control limits for all samples except for the following:

- DSI09-SO-B for VOC analysis had the surrogate d4-1,2-Dichlorobenzene outside the control limits. Data was not qualified based on this finding.
- DSI09-SO-B for PAH analysis (JY67) had a low recovery (13%) for the surrogate d14-dibenzo(a,h) anthracene. The sample was re-analyzed at a dilution with acceptable surrogate recoveries. As the re-extracted data confirmed the original data, the original data was reported rather than the re-extracted. None of the data were qualified based on this finding.
- The original data for PAH analysis DSI03-SO-B and DSI05-SO-B (JY55) had low surrogate recoveries. The data were qualified using the flag "R" to indicate the data for these samples were rejected. The samples were re-extracted within holding times.
- DSI05-SO-A for VOC analysis had the surrogate d4-1,2-Dichlorobenzene outside the control limits. None of the data were qualified based on this finding.
- DSI12-SO-A and DSI12-SO-B were both analyzed using a five times dilution. The associated surrogates were diluted out. No qualification of data was made.
- The method blank for PCB analysis in JY88 had both surrogates outside the control limits. Samples were extracted using a reduced volume which may have contributed to the low surrogate recovery. None of the data were qualified based on this finding.

- Sample MW-5-GW-060929 (JY88) had one surrogate decachlorobiphenyl (DCBP) outside the control limit low. None of the data were qualified based on this result.
- Sample DSI22-CB-060929 was analyzed at a 20 times dilution, which diluted the surrogate recoveries out. None of the data were qualified based on this finding.
- Sample DSI22-CB-060929 had no recovery for the surrogate DCBP. The sample was analyzed at a 20 times dilution, which diluted the surrogate recovery out. None of the data were qualified based on this finding.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD)

Matrix spike (MS) and matrix spike duplicate (MSD) samples were analyzed at the required frequency for all analyses. All MS/MSD results were within criteria with the following exceptions:

- The MS for mercury in sample DSI07-SO-A was outside control limit criteria. Associated data were "J" flagged to indicate the results are estimated.
- The MS recovery for hexavalent chromium (JY55, JY67) was low and outside control limits. All associated data were "UJ" qualified to indicate the results were estimated.
- MS were not performed on the water PAH, NWTPH-Dx, organochlorine pesticide, and PCB analysis. Laboratory did not receive sufficient sample volume to perform the analysis. No qualification of data was made based on this finding.
- MS recovery for dissolved chromium on sample DSI01-GW (JY55) was outside laboratory control limits. The associated sample was qualified as "J" to indicate the results were estimated.
- MS recovery for total arsenic and copper on sample DSI01-SO-A (JY55) was outside laboratory control limits. The associated sample was qualified as "J" to indicate the results were estimated.
- MS recovery for DSI01-GW for total silver was outside laboratory control limits. The associated sample was qualified as "J" to indicate the results were estimated.
- MS recovery for PAH analysis on sample DSI02-SO-B was outside control limits due to elevated target analytes. Based on the sample requiring dilution, no qualification of the data was made based on this finding.
- MS for copper, lead, and zinc in sample DSI22-CB-060929 were outside control limits. Copper and zinc contained greater than four times the spike amount.

Therefore, the data were not qualified. Lead recovery was low and the associated data was qualified with the "J" flag to indicate the value is estimated.

- MS for organochlorine pesticides (JZ00) had an RPD outside laboratory control limit criteria for 4,4'-DDT. Both percent recoveries were within the laboratory control limits. None of the data were qualified based on this finding.
- MS and MSD for the PCB analysis in JZ00 analyzed on sample DSI22-CB-060929 were outside control limits. The sample was analyzed at a 20 times dilution, which diluted the MS and MSD out. None of the data were qualified based on this finding.

Laboratory Duplicates

Laboratory duplicates were within laboratory RPD limits with the following exceptions:

- Arsenic, copper, lead, and mercury in the laboratory duplicate for total metals for sample DSI07-SO-A were outside the laboratory control limits criteria for RPD. The associated metals were "J" flagged to indicate the results are estimated.
- Copper and lead in the laboratory duplicate for total metals for sample DSI01-SO-A (JY55) were outside the laboratory control limits criteria for RPD. The associated metals were "J" flagged to indicate the results are estimated.
- Lead in DSI22-CB-060929 had an RPD of 85.7 percent and was outside the control limits. Arsenic RPD in the lab duplicate was 35.2 percent and was outside the control limits. Associated sample data were estimated using the "J" flag.

Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

Laboratory control samples (LCSs) for the organics compounds were analyzed at the required frequencies. All sample replicates and LCS and LCS Duplicates (LCSD) in which the percent recoveries were within laboratory control limits, with the exception of the LCS batch KWG0600489, had the following analytes with percent recoveries slightly below the acceptable control limit as listed: fluorene (50 percent), phenanthrene (49 percent), anthracene (52 percent), fluoranthene (50 percent), benzo(a)anthracene (54 percent), chrysene (54 percent) and benzo(k)fluoranthene (55 percent). As the LCSD percent recovery and the RPD recovery were within criteria, the data were not qualified based on this finding.

Method Reporting Limits

Sample results were reported using the laboratory method reporting limits. The reporting limits were acceptable. The following actions were taken for samples requiring dilution:

- DSI05-SO-A for VOC analysis (JY55) has the internal standard d4-1,4-dichlorobenzene outside method criteria low. Associated analytes were all non-detect and qualified with the "UJ" flag to denote these results are undetected and estimated.
- DSI07-SO-A for VOCs (JY67A) 1,2,4-trimethylbenzene in the original run was above the linear range of the curve and required dilution. The analyte was "R" flagged in this data set to indicate the data were rejected. The sample was reanalyzed later in the same analytical run within the calibration range. Only 1,2,4-trimethylbenzene was reported from this analysis, the remaining analytes were "R" flagged to indicate the original data were used.
- The original VOC data for sample DSI09-SO-B were qualified based on two internal standards with low recovery. All detects were qualified as J- and all non-detects were qualified as UJ-. The sample was re-analyzed and confirmed the low internal standard recoveries were attributed to matrix effects.
- The original VOC analysis had the surrogate d4-1,2-dichlorobenzene outside control limits. The sample was re-analyzed within the holding time with acceptable surrogate recoveries. Data from the re-analysis should be reported.
- The original VOC analysis for sample DSI11-SO-A was not reported and the analytes were all "R" flagged to indicate it was not reported do to low internal standard recoveries. The re-analysis data was within the holding times and contained acceptable internal standard recoveries.
- The original analysis for sample DSI07-GW contained benzene, 1,2,4-trimethylbenzene, isopropylbenzene, and n-propylbenzene above the linear range of the curve. The values were "R" flagged to denote they were not useable. The re-analysis data have all but these four analytes "R" flagged to denote that the data were not used; the original run contained more technically valid data.
- The original analysis for sample DSI57-GW contained benzene, 1,2,4-trimethylbenzene, isopropylbenzene, and n-propylbenzene above the linear range of the curve. The values were "R" flagged to denote the values reported were not used.

- The re-analysis data for all but these four analytes were “R” flagged to denote that these data were not used; the original run contained more technically valid data.
- The original analysis for sample DSI12-SO-A (JY67) contained pyrene above the linear range of the curve. The value was “R” flagged to denote the value reported was not used. The re-analysis data for all but this analyte were “R” flagged to denote that these data were not used; the original run contained more technically valid data.
 - The original analysis for sample DSI12-SO-B (JY67) contained pyrene, fluoranthene, chrysene, benzo(k)fluoranthene, and benzo(a)pyrene above the linear range of the curve. The values were “R” flagged to denote the values reported were not used. The re-analysis data for all but these five analytes were “R” flagged to denote that these data were not used; the original run contained more technically valid data.
 - The original analysis for sample DSI07-GW (JY67) contained naphthalene and 2-methylnaphthalene above the linear range of the curve. The values were “R” flagged to denote the values reported were not used. The re-analysis data for all but these two analytes were “R” flagged to denote that these data were not used; the original run contained more technically valid data.
 - The original analysis for sample DSI12-GW (JY67) contained phenanthrene, pyrene, and fluoranthene above the linear range of the curve. The values were “R” flagged to denote the values reported were not used. The re-analysis data for all but these two analytes were “R” flagged to denote that these data were not used; the original run contained more technically valid data.
 - The original PCB analysis for sample DSI03-SO-A had aroclor 1260 above the linear range of the curve. The sample was re-analyzed at a dilution. Aroclor 1260 was “R” flagged in the original data to denote the value reported was not used. The re-analysis data for aroclor 1260 were acceptable. All other aroclors in the re-analysis were “R” flagged to denote that these data were not used; the original run contained more technically valid data.
 - Sample DSI06-SO-A was analyzed at a dilution, which resulted in raised reporting limits.
 - Sample MW-5-GW-060929 was analyzed at a three times dilution, which raised the reporting limit.

- Sample MW-4-GW-060929 had naphthalene, 2-methylnaphthalene, acenaphthene, and fluorene above the linear range of the curve. The sample was re-analyzed at a dilution. The four analytes were "R" flagged in the original data to denote the value reported was not used. The re-analysis data for the four analytes were acceptable. All other analytes in the re-analysis were "R" flagged to denote that these data were not used; the original run contained more technically valid data.
- Sample DSI22-CB-060929 had a failed closing calibration for several pesticides. The sample was re-analyzed at a 10 times dilution which raised the reporting limit. The sample can be reported from the original analysis with qualification.
- Sample DSI22-CB-060929 was originally analyzed undiluted and the internal standards failed. The sample was re-analyzed at a 20 times dilution with raised reporting limits.
- Sample DSI22-CB-060929 was originally analyzed undiluted on 10/20/06 and bis(2-ethylhexyl)phthalate was above the linear range of the curve. The sample was diluted and re-analyzed for the analyte. Data from the original analysis were reported from the original run and bis(2-ethylhexyl)phthalate was reported from the dilution run.
- Sample DSI22-CB-060929 was originally analyzed undiluted on 10/20/06 and re-analyzed at a 10 times dilution on 10/25/06. The associated MS/MSD failed. The sample was re-extracted using less sample outside the holding time. The re-extracted sample has raised reporting limits. Data from this analysis were not reported.

Calibrations

All calibrations were performed within the method specified criteria with the following exceptions:

- The VOC continuing calibration (JY55) performed on 10/10/06 contained carbon disulfide at 23.2 percent different (%D), trans-1,2-dichloroethene at 26.4%D, and n-butylbenzene at 26.5%D. The method allows for up to two analytes to fail the $\pm 25\%D$ as long as they are below 40%D. No qualification was made to the associated data based on this finding.
- The VOC continuing calibration (JY67) contained carbon disulfide at 20.7%D. No qualification was made to the associated data based on this finding.

- Closing continuing calibration for aroclor 1260 analysis (JY67, JY55) was outside criteria high. All associated samples were non-detect. Associated samples were qualified as “UJ” for aroclor 1260 to indicate the values reported are estimated.
- The closing continuing calibration for the organochlorine pesticide analysis in JZ00 was outside method criteria for aldrin, heptachlor epoxide, endosulfan I, dieldrin, 4,4'-DDE, endrin aldehyde, gamma chlorodane, and alpha chlorodane. The associated data were all non-detect for the analytes of interest. The data were qualified as “UJ” to indicate the results are non-detect and estimated. The sample was re-analyzed at 10 times dilution with acceptable closing calibrations.

Overall Assessment

The data are judged to be acceptable for their intended use as qualified in Table 2 below.

Precision, Accuracy, and Completeness

Precision: All precision goals were met.

Accuracy: All accuracy goals were met.

Completeness: Completeness was 100 percent for all data.

Table 2
Data Qualifiers

Analyte	Sample ID	Original Result	Qualified Result	Reason
Methylene chloride	DSI01-SO-A	2.1 B	2.1 U	Method blank contamination
Methylene chloride	DSI01-SO-B	2.6 B	2.6 U	Method blank contamination
Acetone	DSI03-SO-B	41 B	41 U	Method blank contamination
Acetone	DSI04-SO-B	29 B	29 U	Method blank contamination
Methylene chloride	DSI04-SO-B	2.2	2.2 U	Method blank contamination
All analytes	DSI05-SO-A RE	-	R	Reanalysis confirmed original data – data were qualified as “R” to distinguish from the more technically valid original run
Acetone	DSI05-SO-A	51 B	51 U	Method blank contamination
Bromoform	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
1,1,2,2-tetrachloroethane	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
1,2-dichlorobenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
1,3-dichlorobenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
1,4-dichlorobenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
1,1,1,2-tetrachloroethane	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low

**Table 2
Data Qualifiers**

Analyte	Sample ID	Original Result	Qualified Result	Reason
1,2-dibromo-3-chloropropane	DSI05-SO-A	6.4 U	6.4 UJ	Internal standard low
1,2,3-trichloropropane	DSI05-SO-A	2.5 U	2.5 UJ	Internal standard low
1,3,5-trimethylbenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
1,2,4-trimethylbenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
Hexachlorobutadiene	DSI05-SO-A	6.4 U	6.4 UJ	Internal standard low
Isopropylbenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
n-propylbenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
Bromobenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
2-chlorotoluene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
4-chlorotoluene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
tert-butylbenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
sec-butylbenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
4-isopropyltoluene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
n-butylbenzene	DSI05-SO-A	1.3 U	1.3 UJ	Internal standard low
1,2,4-trichlorobenzene	DSI05-SO-A	6.4 U	6.4 UJ	Internal standard low
Naphthalene	DSI05-SO-A	6.4 U	6.4 UJ	Internal standard low
1,2,3-trichlorobenzene	DSI05-SO-A	6.4 U	6.4 UJ	Internal standard low
Methylene chloride	DSI06-SO-B	2.5 B	2.5 U	Method blank contamination
Phenanthrene	DSI02-SO-B	410	410 J	Matrix spike outside criteria
Chrysene	DSI02-SO-B	140	140 J	Matrix spike outside criteria
Benzo(k)fluoranthene	DSI02-SO-B	90	90 J	Matrix spike outside criteria
All analytes	DSI03-SO-B	-	R	Data were qualified as "R" to distinguish from the more technically valid re-extracted run with surrogates within control
All analytes	DSI05-SO-B	-	R	Data were qualified as "R" to distinguish from the more technically valid re-extracted run with surrogates within control
2-methylnaphthalene	DSI01-GW	0.01 B	0.01 U	Method blank contamination
2-methylnaphthalene	DSI02-GW	0.07 B	0.07 U	Method blank contamination
2-methylnaphthalene	DSI04-GW	0.02 B	0.02 U	Method blank contamination
2-methylnaphthalene	DSI06-GW	0.06 B	0.06 U	Method blank contamination
Aroclor 1260	DSI03-SO-A	260 E	260 R	Data were qualified as "R" to distinguish from the more technically valid re-extracted analysis

**Table 2
Data Qualifiers**

Analyte	Sample ID	Original Result	Qualified Result	Reason
Aroclor 1016, 1242, 1248, 1254, 1221, 1232	DSI03-SO-ARE	48 U	48 R	Data were qualified as "R" to distinguish from the more technically valid original analysis
Arsenic	DSI01-SO-A	48.1	48.1 J	Matrix spike recovery low
Copper	DSI01-SO-A	103	103 J	Matrix duplicate recovery high, matrix duplicate RPD out
Lead	DSI01-SO-A	36	36 J	Matrix duplicate RPD out
Chromium	DSI01-GW	0.2 U	0.2 UJ	Matrix spike recovery low
Silver	DSI01-GW	0.2	0.2 J	Matrix spike recovery low
Dissolved chromium	DSI01-GW	0.5 U	0.5 UJ	Matrix spike recovery low
Hexavalent chromium	DSI01-SO-A	0.125 U	0.125 UJ	Matrix spike recovery low
Naphthalene	MW-4-GW-060929	3.3 E	3.3 R	Data were qualified as "R" to distinguish from the more technically valid re-extracted analysis
2-methylnaphthalene	MW-4-GW-060929	1.5 E	1.5 R	Data were qualified as "R" to distinguish from the more technically valid re-extracted analysis
Acenaphthene	MW-4-GW-060929	2.2 E	2.2 R	Data were qualified as "R" to distinguish from the more technically valid re-extracted analysis
Fluorene	MW-4-GW-060929	1.5 E	1.5 R	Data were qualified as "R" to distinguish from the more technically valid re-extracted analysis
Acenaphthylene	MW-4-GW-060929 RE	0.10	0.10 R	Data were qualified as "R" to distinguish from the more technically valid original analysis
Phenanthrene, Anthracene, fluoranthene, pyrene, chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, dibenzofuran	MW-4-GW-060929 RE	-	R	Data were qualified as "R" to distinguish from the more technically valid original analysis
Aroclors 1016, 1242, 1248, 1254, 1260, 1221, 1232	MW-5-GW-060929	0.020 U	0.020 UJ	Low surrogate recoveries
1,2,4-trimethylbenzene	DSI07-SO-A	240 E	240 R	Over linear range of curve

**Table 2
Data Qualifiers**

Analyte	Sample ID	Original Result	Qualified Result	Reason
All analytes except 1,2,4-trimethylbenzene	DSI07-SO-A RE	-	R	Data were qualified as "R" to distinguish from the more technically valid re-extracted analysis
1,2,4-trimethylbenzene	DSI09-SO-B	1.4	1.4 J-	Estimated low due to low internal standard recovery
Dibromochloromethane, bromoform, 2-hexanone, tetrachloroethene, 1,1,2,2-tetrachloroethane, ethylbenzene, styrene, m,p,o-xylene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,1,1,2-tetrachloroethane, 1,2-dibromo-3-chloropropane, 1,2,3-trichloropropane, 1,3,5-trichlorobenzene, hexachlorobutadiene, 1,3-dichloropropane, isopropylbenzene, n-propylbenzene, bromobenzene, 2-chlorotoluene, 4-chlorotoluene, tert-butylbenzene, sec-butylbenzene, 4-isopropyltoluene, n-butylbenzene, 1,2,4-trichlorobenzene, naphthalene, 1,2,3-trichlorobenzene	DSI09-SO-B	U	UJ-	Estimated low due to low internal standard recovery (3,4)
All VOC analytes	DSI09-SO-B RE		UJ-	Data not used as original run contained more technically valid data
All VOC analytes	DSI10-SO-B	-	R	Report data from the re-analysis with acceptable surrogate recoveries
All VOC analytes	DSI11-SO-A	-	R	Data not used as re-analysis run contained more technically valid data
All VOC analytes	DSI12-SO-B RE	-	R	The original analysis contained one surrogate at the recovery limit; sample was re-analyzed with two surrogates outside the control limit. Data were not reported.
Benzene	DSI07-GW	50 ES	50 R	Over linear range of curve
1,2,4-trimethylbenzene	DSI07-GW	22 E	22 R	Over linear range of curve
Isopropylbenzene	DSI07-GW	21 E	21 R	Over linear range of curve
n-Propylbenzene	DSI07-GW	29 ES	29 E	Over linear range of curve

**Table 2
Data Qualifiers**

Analyte	Sample ID	Original Result	Qualified Result	Reason
All VOC analytes except Benzene, 1,2,4-trimethylbenzene, Isopropylbenzene, n-Propylbenzene	DSI07-GW RE	-	R	Data not used as original analysis run contained more technically valid data
Benzene	DSI57-GW	53 ES	53 R	Over linear range of curve
1,2,4-trimethylbenzene	DSI57-GW	20 E	20 R	Over linear range of curve
Isopropylbenzene	DSI57-GW	21 E	21 R	Over linear range of curve
n-Propylbenzene	DSI57-GW	29 ES	29 R	Over linear range of curve
All VOC analytes except Benzene, 1,2,4-trimethylbenzene, Isopropylbenzene, n-Propylbenzene	DSI57-GW RE	-	R	Data not used as original analysis run contained more technically valid data
Acetone	DSI10-SO-B	35	35 U	Analyte detected in method blank
Acetone	DSI12-SO-B	43	43 U	Analyte detected in method blank
All PAH analytes	DSI09-SO-B RE	-	R	Data not used as original analysis run contained more technically valid data
Pyrene	DSI12-SO-A	3900 E	3900 R	Over linear range of curve
All PAH analytes except Pyrene	DSI12-SO-A RE	-	R	Data not used as original analysis run contained more technically valid data
Pyrene	DSI12-SO-B	7200 E	7200 R	Over linear range of curve
Fluoranthene	DSI12-SO-B	4600 E	4600 R	Over linear range of curve
Chrysene	DSI12-SO-B	5700 E	5700 R	Over linear range of curve
Benzo(k)fluoranthene	DSI12-SO-B	3900 E	3900 R	Over linear range of curve
Benzo(a)pyrene	DSI12-SO-B	5800 E	5800 R	Over linear range of curve
All PAH analytes except Pyrene, Fluoranthene, Chrysene, Benzo(k)fluoranthene, Benzo(a)pyrene	DSI12-SO-B RE	-	R	Data not used as original analysis run contained more technically valid data
Naphthalene	DSI07-GW	1.5 E	1.5 R	Over linear range of curve
2-methylnaphthalene	DSI07-GW	6.5 E	6.5 R	Over linear range of curve
All PAH analytes except naphthalene and 2-methylnaphthalene	DSI07-GW RE	-	R	Data not used as original analysis run contained more technically valid data
2-methylnaphthalene	DSI08-GW	0.06 B	0.06 U	Method blank contamination
2-methylnaphthalene	DSI09-GW	0.08 B	0.08 U	Method blank contamination
2-methylnaphthalene	DSI10-GW	0.06 B	0.06 U	Method blank contamination
2-methylnaphthalene	DSI11-GW	0.07 B	0.07 U	Method blank contamination
2-methylnaphthalene	DSI08-GW	0.06 B	0.06 U	Method blank contamination

**Table 2
Data Qualifiers**

Analyte	Sample ID	Original Result	Qualified Result	Reason
Naphthalene	DSI57-GW	1.6 E	1.6 R	Over linear range of curve
2-methylnaphthalene	DSI57-GW	7.8 E	7.8 R	Over linear range of curve
All PAH analytes except naphthalene and 2-methylnaphthalene	DSI57-GW RE	-	R	Data not used as original analysis run contained more technically valid data
Phenanthrene	DSI12-GW	5.1 E	5.1 R	Over linear range of curve
Pyrene	DSI12-GW	7.8 E	7.8 R	Over linear range of curve
Fluoranthene	DSI12-GW	10 E	10 R	Over linear range of curve
All PAH analytes except Phenanthrene, pyrene, fluoranthene	DSI12-GW RE	-	R	Data not used as original analysis run contained more technically valid data.
All pesticide data	DSI11-SO-B RE	-	J	Re-extract ran outside the holding time
Aroclor 1260	DSI07-GW	0.020 U	0.020 UJ	Closing continuing calibration (ccal) outside criteria
Aroclor 1260	DSI06-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Aroclor 1260	DSI09-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Aroclor 1260	DSI57-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Aroclor 1260	DSI10-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Aroclor 1260	DSI11-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Aroclor 1260	DSI12-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Arsenic	DSI07-SO-A	4.3	4.3 J	Lab duplicate RPD out
Copper	DSI07-SO-A	52.1	52.1 J	Lab duplicate RPD out
Lead	DSI07-SO-A	11	11 J	Lab duplicate RPD out
Mercury	DSI07-SO-A	0.72	0.72 J	Lab duplicate RPD out, low MS recovery
Hexavalent chromium	DSI07-SO-A	0.150 U	0.150 UJ	Low MS recovery
Hexavalent chromium	DSI07-SO-B	0.115 U	0.115 UJ	Low MS recovery
Hexavalent chromium	DSI08-SO-A	0.160 U	0.160 UJ	Low MS recovery
Hexavalent chromium	DSI08-SO-B	0.116 U	0.116 UJ	Low MS recovery
Hexavalent chromium	DSI09-SO-A	0.117 U	0.117 UJ	Low MS recovery
Hexavalent chromium	DSI09-SO-B	0.124 U	0.124 UJ	Low MS recovery
Hexavalent chromium	DSI10-SO-A	0.157 U	0.157 UJ	Low MS recovery
Hexavalent chromium	DSI10-SO-B	0.117 U	0.117 UJ	Low MS recovery
Hexavalent chromium	DSI11-SO-A	2.05 U	2.05 UJ	Low MS recovery
Hexavalent chromium	DSI11-SO-B	0.120 U	0.120 UJ	Low MS recovery
Hexavalent chromium	DSI12-SO-A	0.125 U	0.125 UJ	Low MS recovery
Hexavalent chromium	DSI12-SO-B	0.123 U	0.123 UJ	Low MS recovery
Hexavalent chromium	DSI01-SO-A	0.125 U	0.125 UJ	Low MS recovery
Hexavalent chromium	DSI01-SO-B	0.135 U	0.135 UJ	Low MS recovery
Hexavalent chromium	DSI02-SO-A	0.116 U	0.116 UJ	Low MS recovery

**Table 2
Data Qualifiers**

Analyte	Sample ID	Original Result	Qualified Result	Reason
Hexavalent chromium	DSI02-SO-B	0.140 U	0.140 UJ	Low MS recovery
Hexavalent chromium	DSI03-SO-A	0.111 U	0.111 UJ	Low MS recovery
Hexavalent chromium	DSI03-SO-B	0.126 U	0.126 UJ	Low MS recovery
Hexavalent chromium	DSI04-SO-A	0.151 U	0.151 UJ	Low MS recovery
Hexavalent chromium	DSI04-SO-B	0.127 U	0.127 UJ	Low MS recovery
Hexavalent chromium	DSI05-SO-A	0.142 U	0.142 UJ	Low MS recovery
Hexavalent chromium	DSI05-SO-B	0.127 U	0.127 UJ	Low MS recovery
Hexavalent chromium	DSI06-SO-A	0.143 U	0.143 UJ	Low MS recovery
Hexavalent chromium	DSI06-SO-B	0.120 U	0.120 UJ	Low MS recovery
Aroclor 1260	DSI01-SO-A	43	43 J	Closing ccal outside criteria
Aroclor 1260	DSI01-SO-B	10 J	10 J	Closing ccal outside criteria
Aroclor 1260	DSI02-SO-A	9.7	9.7 UJ	Closing ccal outside criteria
Aroclor 1260	DSI02-SO-B	9.7	9.7 UJ	Closing ccal outside criteria
Aroclor 1260	DSI03-SO-A	300	300 J	Closing ccal outside criteria
Aroclor 1260	DSI03-SO-B	94	94 J	Closing ccal outside criteria
Aroclor 1260	DSI04-SO-A	9.6	9.6 J	Closing ccal outside criteria
Aroclor 1260	DSI04-SO-B	9.5	9.5 J	Closing ccal outside criteria
Aroclor 1260	DSI05-SO-A	46	46 J	Closing ccal outside criteria
Aroclor 1260	DSI05-SO-B	9.6	9.6 J	Closing ccal outside criteria
Aroclor 1260	DSI06-SO-A	9.7	9.7 J	Closing ccal outside criteria
Aroclor 1260	DSI06-SO-B	9.7	9.7 J	Closing ccal outside criteria
Aroclor 1260	DSI01-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Aroclor 1260	DSI02-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Aroclor 1260	DSI03-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Aroclor 1260	DSI04-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Aroclor 1260	DSI05-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
Aroclor 1260	DSI06-GW	0.020 U	0.020 UJ	Closing ccal outside criteria
All analytes	DSI03-SO-3	-	R	Original data had low surrogate recoveries
All analytes	DSI05-SO-3	-	R	Original data had low surrogate recoveries
Naphthalene	MW-4-GW-060929	3.3 E	3.3 E	Over linear range of curve
2-methylnaphthalene	MW-4-GW-060929	1.5 E	1.5 E	Over linear range of curve
Acenaphthene	MW-4-GW-060929	2.2 E	2.2 R	Over linear range of curve
Fluorene	MW-4-GW-060929	1.5 E	1.5 R	Over linear range of curve

**Table 2
Data Qualifiers**

Analyte	Sample ID	Original Result	Qualified Result	Reason
All analytes except Naphthalene, 2-methylnaphthalene, Acenaphthene, Fluorene	MW-4-GW-060929 RE	-	R	Data not used as original analysis run contained more technically valid data
Lead	DSI22-CB-060929	350	350 J	MS recovery was low, lab duplicate RPD high
Arsenic	DSI22-CB-060929	29.7	29.7	Lab duplicate RPD out
Aldrin	DSI22-CB-060929	2.0 U	2.0 UJ	Closing calibration outside method criteria
Heptachlor epoxide	DSI22-CB-060929	2.0 U	2.0 UJ	Closing calibration outside method criteria
Endosulfan I	DSI22-CB-060929	2.0 U	2.0 UJ	Closing calibration outside method criteria
Dieldrin	DSI22-CB-060929	4.0 U	4.0 UJ	Closing calibration outside method criteria
4,4'-DDE	DSI22-CB-060929	4.0 U	4.0 UJ	Closing calibration outside method criteria
Endrin aldehyde	DSI22-CB-060929	4.0 U	4.0 UJ	Closing calibration outside method criteria
Gamma chlorodane	DSI22-CB-060929	150 U	150 UJ	Closing calibration outside method criteria
Alpha chlorodane	DSI22-CB-060929	2.0 U	2.0 UJ	Closing calibration outside method criteria
All SVOC analytes from 11/6/06 data	DSI22-CB-060929	-	J	Analyzed outside the holding time
Phenol	DSI22-CB-060929	140 B	140 J	Poor MS/MSD recovery
1,3-dichlorobenzene	DSI22-CB-060929	59 U	59 UJ	Poor MS/MSD recovery
Acenaphthene	DSI22-CB-060929	740	740 J	Poor MS/MSD recovery
n-nitrosodiphenylamine	DSI22-CB-060929	130 U	130 UJ	Poor MS/MSD recovery
Pentachlorophenol	DSI22-CB-060929	290 U	290 UJ	Poor MS/MSD recovery
Pyrene	DSI22-CB-060929	2600	2600 J	Poor MS/MSD recovery
Bis(2-ethylhexyl)phthalate	DSI22-CB-060929	13000 E	13000 R	Over the linear range of the curve
All SVOC analytes except Bis(2-ethylhexyl)phthalate	DSI22-CB-060929	-	R	Data not used as original analysis run contained more technically valid data

REFERENCES

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ATTACHMENT 1
ANALYTICAL DATA REPORTS
