



PERIODIC REVIEW

Marine Fluid Systems
801 Northwest 42nd Street
Seattle, WA 98107

Facility Site ID#: 76266689
Cleanup Site ID#: 573

Completed by:
Washington State Department of Ecology
Northwest Regional Office
Toxics Cleanup Program

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1.0 INTRODUCTION

This document is a review by the Washington State Department of Ecology (Ecology) of post-cleanup site conditions and monitoring data to assure that human health and the environment are being protected at the Marine Fluid Systems site (Site). Cleanup at this Site was implemented under the Model Toxics Control Act (MTCA), Chapter 173-340 Washington Administrative Code (WAC).

The Site received a No Further Action (NFA) determination through the Voluntary Cleanup Program (VCP) under VCP No. NW0227. The remedy relied on institutional and engineered controls. No active remediation was conducted. Total petroleum hydrocarbons (TPH), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), polychlorinated biphenyls (PCBs), and metals remain at the Site at concentrations that exceed the MTCA soil cleanup levels. The MTCA cleanup levels for soil are established under Ch. 173-340-740 WAC.

WAC 173-340-420(2) requires Ecology conduct a periodic review of a site every five years under the following conditions:

1. Whenever Ecology conducts a cleanup action
2. Whenever Ecology approves a cleanup action under an order, agreed order or consent decree
3. Or, as resources permit, whenever Ecology issues a no further action opinion;
4. And one of the following conditions exists:
 - (a) Institutional controls or financial assurance are required as part of the cleanup
 - (b) Where the cleanup level is based on a practical quantitation limit
 - (c) Where, in Ecology's judgment, modifications to the default equations or assumptions using site-specific information would significantly increase the concentration of hazardous substances remaining at the site after cleanup or the uncertainty in the ecological evaluation or the reliability of the cleanup action is such that additional review is necessary to assure long-term protection of human health and the environment.

When evaluating whether human health and the environment are being protected, the factors Ecology shall consider include [WAC 173-340-420(4)]:

- (a) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the Site;
- (b) New scientific information for individual hazardous substances or mixtures present at the Site;
- (c) New applicable state and federal laws for hazardous substances present at the Site;
- (d) Current and projected Site and resource uses;
- (e) The availability and practicability of more permanent remedies; and
- (f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

Ecology shall publish a notice of all periodic reviews in the Site Register and provide an opportunity for public comment.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Site History

The Marine Fluid Systems property is located in the Ballard neighborhood in the City of Seattle in King County, Washington. The property consists of King County parcel number 1325039001 (Property), which covers approximately 2.5 acres (108,863 square feet) of land located along the north shore of the Lake Washington Ship Canal. Approximately 10,600 square feet of the parcel are inundated by the ship canal.

The western-most buildings are located partially atop a wooden wharf that was constructed in 1919. The Property was operated as a shipyard (Olsen & Sunde) from 1926 to 1956. West Coast Heating & Plumbing Company owned the Property from 1956 to 1962. Florence Evans (Union Bay Shipbuilding) owned the Property between 1971 and 1999. The current owner, Ballard Land Management, purchased the Property in 1999.

The Property is currently utilized primarily by Marine Fluid Systems, which became the master tenant in 1997, but has maintained a shop there since 1994. In 2006 or 2007, three buildings were demolished and a new 2-story, 37,785 square foot warehouse/office building was constructed on the northern portion of the Property.

Currently, Marine Fluid Systems' main activities on the southern portion of the Property are repair and maintenance of boats under 120 feet length. The commercial building on the northern portion of the Property is used for industrial activities and office space currently leased by Crawford Nautical School, TerraSond Limited (marine geospatial mapping), Schmidt Ocean Institute (oceanographic research), and Marine System Inc. (marine engine repair and maintenance).

The Site is defined as total petroleum hydrocarbons in the diesel and oil ranges (TPH-D and TPH-O, respectively), PCBs, cPAHs, arsenic, cadmium, chromium, lead, and mercury in soil and TPH-D and TPH-O in groundwater. Sediments may also be impacted.

The property uses in the vicinity of the Site are primarily industrial.

A vicinity map is included as Appendix 6.1 and a Site plan is included as Appendix 6.2.

2.2 Site Investigations

2.2.1 Marine Fluid Systems Property

Parametrix, Inc. completed a Phase I Environmental Site Assessment (ESA) in November 1993 for the Marine Fluid Systems Property, which was occupied by the Union Bay Shipbuilding Corporation at the time (Parametrix, 1993). Drums, chemical containers, an out-of-service transformer, several underground and aboveground heating oil storage tanks (USTs and ASTs, respectively), a former gasoline UST, and a former waste oil UST were noted at the Property.

Parametrix indicated that surficial soils and pavement in multiple locations were stained with what appeared to be petroleum hydrocarbons from leaking equipment and/or general maintenance activities. They also indicated that some areas may have been impacted by chlorinated hydrocarbons. They observed sandblasting grit in multiple areas of the Property, as well as in the partially submerged dock area (depicted in their 1993 figure, included as Appendix 6.5). They indicated that metals or petroleum hydrocarbons may have been released into the ship canal by either direct release of sandblasting grit or by stormwater runoff. Their recommendations included sediment sampling and to excavate and dispose of the impacted soils or treat the soils on-site.

During inspections of Union Bay Shipbuilding (the former occupant) in the mid-1980s to early 1990s, Ecology inspectors observed sandblasting grit entering the ship canal, improper drum storage, dust from sandblasting and painting activities, storm drains covered with grit, and large accumulations of grit. These practices had improved by 1991. Additional improvements were implemented by Marine Fluid Systems in 1994 to better control the sandblasting grit, paint debris, and paint overspray. A new stormwater system was installed in 1994 to help manage the water generated during sandblasting and washing of ships within the marine railway.

In 1998, soil samples were collected from depths ranging from surface to 9.25 feet below ground surface (bgs) at 32 locations on the Property (Environmental Associates, 1999). The samples were analyzed for TPH (14 samples); metals (8 samples); Aroclors (3 samples); PAHs (5 samples); volatile organic compounds (VOCs) (6 samples); and benzene, toluene, ethylbenzene, and xylenes (2 samples) (Table 1, Appendix 6.6). Five samples were analyzed for volatile petroleum hydrocarbons and extractable petroleum hydrocarbons. Two samples of sandblast grit from the surface were analyzed for metals. Between May 1998 and August 2000, three rounds of groundwater samples were collected from four monitoring wells and analyzed for TPH-D and TPH-O; the first round was also analyzed for metals (Environmental Associates, 1999 and 2000) (Table 2, Appendix 6.6). A Site plan with sampling locations on the Property is included as Appendix 6.3.

The concentration of TPH-D + TPH-O in one groundwater sample (731 micrograms per liter [$\mu\text{g/L}$] in MW-4 from May 1998) exceeded the current Method A cleanup level (CUL) of 500 $\mu\text{g/L}$ (Table 2, Appendix 6.6). Neither TPH-D nor TPH-O were detected in this well during the following two rounds of sampling (February and August 2000) at detection limits of 250 and 500 $\mu\text{g/L}$, respectively. However, it should be noted that well MW-4 was resampled in August 2000 after initially receiving results that indicated a concentration of TPH-D + TPH-O of 1,630 $\mu\text{g/L}$ (exceeding Method A). Environmental Associates indicated that this result may have been due to oily water in the well monument, so they resampled the well. The results presented in their table for MW-4 (indicating that TPH-D and TPH-O was not-detected) are the second results after they resampled.

Neither TPH-D nor TPH-O were detected above Method A in the other three wells. Arsenic, barium, chromium, and selenium were each detected in one or more groundwater samples, but none exceeded its CUL for protection of surface water.

The fractionation results for two soil samples (SP-4-2 and SP-9-3.5) collected in 1998 were evaluated using the MTCATPH spreadsheet to calculate soil leaching and Method C soil contact CULs. The cPAH results for these samples were all non-detected. Because cPAHs were detected in other samples at the Property, half the detection limits were input to the spreadsheet. The spreadsheet calculated Method C industrial contact CULs of 29,800 and 28,800 milligrams per kilogram (mg/kg), respectively, and predicted no impacts to groundwater. One groundwater sample exceeded Method A, however, so the current Method A soil CUL of 2,000 mg/kg was used as the soil CUL for total TPH summed across the diesel and oil ranges (TPH-D+O). Two soil samples exceeded Method A.

Although metals were not detected in groundwater above their CULs, the Property is mostly paved, precluding an empirical demonstration that soil concentrations are protective of groundwater. The results of extraction procedure toxicity testing (Environmental Associates, 1999) indicated that copper and zinc leached from soil samples at measurable concentrations. The current soil CULs that apply now for PCBs, cPAH TEQ¹, metals, and VOCs consider direct soil contact in an industrial setting and leaching to groundwater that could be used as drinking water or that could transport to surface water and sediment. Maximum concentrations of the following chemicals exceeded their current soil CULs on the Property: total PCBs, cPAH TEQ, arsenic, cadmium, chromium, lead, and mercury (Table 1, Appendix 6.6).

Depth to groundwater ranges from approximately 1 foot bgs in the northeast corner of the Property to 5-6 feet in the southern portion of the Property along the ship canal. Based on water level measurements in the wells, groundwater appears to flow southwest toward the ship canal.

Sediments in the submerged portion of and adjacent to the Property may have been impacted by Site operations, but sampling results are available for only two locations within 150 feet of the Property; these results are from 1996 and 1997. The maximum concentrations of total PCBs and mercury exceeded their current sediment cleanup screening levels (Table 3, Appendix 6.6). The extent of contaminated sediments has not been characterized. Environmental Associates' 1999 report indicated that sediment sampling was excluded from their scope of work at their client's request.

2.2.2 Trident Seafoods Property

Some of the 1998 surface soil samples obtained from the southeast corner of the Marine Fluid Systems Property were at the locations at the southeast edge of the Property identified as containing abundant sandblasting grit. These samples were obtained due to concerns raised by the adjacent Trident Seafoods that debris cleanup activities completed by Marine Fluid Systems in this area and partially involving the Trident Seafoods property had possibly impacted the Trident Seafoods property. Trident Seafoods noted that sandblasting grit was present in this area.

In addition to the samples collected on the Marine Fluid Systems Property (discussed in Section 2.2.1), 11 soil samples and three groundwater samples were collected on the west side of the

¹ Toxicity equivalents of benzo(a)pyrene, calculated using toxicity equivalency factors.

Trident Seafoods property, located adjacent southeast to Marine Fluid Systems (Environmental Associates, 1999). The Trident Seafoods property soil samples were analyzed for TPH, VOCs, semi-volatile organic compounds, and metals (Table 4, Appendix 6.6). The groundwater samples were analyzed for TPH and VOCs (Table 5, Appendix 6.6). A sample of sandblast grit collected from the surface was analyzed for metals.

Ecology prepared a Site plan that depicts the sampling locations on both the Marine Fluid Systems and Trident Seafoods properties, which is included as Appendix 6.4. Ecology also prepared summary data tables for both properties, which are included as Appendix 6.6.

The data on the Trident Seafoods property were compared with current CULs. The TPH detected in Trident soil was assumed to be in the diesel/oil range.

Three of nine soil samples analyzed for TPH exceeded the Method A CUL of 2,000 mg/kg, with a maximum concentration of 12,000 mg/kg at two locations (HA-1 and A2-1S) (Table 4, Appendix 6.6). Some metals were analyzed in two soil samples and some in four samples. The following metals exceeded their CULs in one or more samples: antimony, arsenic, cadmium, chromium, copper, lead, mercury, and zinc. VOCs were analyzed in six soil samples. Methylene chloride, 1,1,1-trichloroethane, and toluene exceeded their CULs in one or more samples.

Three wells on the Trident Seafoods property were sampled once each (Environmental Associates, 1999). The maximum concentration of 1,000 µg/L of TPH (well MW-A2) exceeds the Method A CUL of 500 µg/L (Table 5, Appendix 6.6). TPH was not detected in the other two wells, at a detection limit of 500 µg/L. Six VOCs were detected in one or more wells, but none exceeded its CUL.

2.3 Regulatory History

2.3.1 Remedy and Agency Determination

No active remediation was conducted at the Site. The remedy relied on institutional controls (via a restrictive covenant) and engineered controls (capping by pavement and buildings to prevent movement of or exposure to hazardous substances). It was determined that the concentrations of the contaminants of concern did not pose a risk to human health or the environment under an industrial land use exposure scenario.

Ecology issued a preliminary opinion of no further action (NFA) on February 3, 2000, pending additional groundwater monitoring results and contingent on recording a restrictive covenant with King County. A restrictive covenant was recorded with King County on December 17, 1999 for the Marine Fluid Systems Property (King County parcel number 1325039001). The covenant prohibits activities that may result in the release of contaminants contained as part of the remedy, and prohibits any use of the Property that is inconsistent with the covenant. After the additional groundwater monitoring was completed, Ecology issued a NFA opinion on September 21, 2000.

The 2000 NFA opinion and associated restrictive covenant apply to King County parcel number 1325039001 only (the Marine Fluid Systems Property). There is no restrictive or environmental covenant that applies to the Trident Seafoods property (King County parcel number 7446000120). Based on available data (discussed in Section 2.2), the contamination identified on the Trident Seafoods property appears to be part of the Site with a common source(s) of contamination. The selected remedy (capping the contamination and the restrictive covenant) is not protective of the Trident Seafoods portion of the Site.

The 2000 NFA opinion letter indicated that it does not pertain to contaminated sediments, and that contaminated sediments may be addressed by Ecology in the future.

2.3.2 Reorganization of Site Files

Previously there were two separate files for the Site: Marine Fluid Systems (Cleanup Site ID# 573) and Union Bay Shipbuilding (former Cleanup Site ID# 1885). Union Bay Shipbuilding is the previous occupant of the Property that Marine Fluid Systems currently occupies. In July 2018, Ecology merged the Union Bay Shipbuilding and Marine Fluid Systems site files and updated the ISIS database.

2.4 Institutional Controls

Institutional controls in the form of a restrictive covenant was a condition of the NFA determination in order to prevent exposure to the contamination. A restrictive covenant was recorded with King County for the Marine Fluid Systems Property (King County parcel number 1325039001) on December 17, 1999. The restrictive covenant contains the following restrictions:

1. The Property shall be used only for traditional industrial uses, as described in RCW 70.1050.020(23) and defined in and allowed under the City of Seattle's zoning regulations codified in the Municipal Code of the City of Seattle, Title 23, Land Use Code, as of the date of the Restrictive Covenant.
2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.
3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.
4. The owner of the Property must give thirty (30) day advance written notice to Ecology of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.
5. The owner must restrict leases to uses and activities consistent with the Restrictive Covenant and notify all lessees of the restrictions on the use of the Property.

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6. The owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Restrictive Covenant. Ecology may approve an inconsistent use only after public notice and comment.
 7. The owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial Action; to take samples; to inspect Remedial Actions conducted at the property, and to inspect records that are related to the Remedial Action.
 8. The owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this Restrictive Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

The restrictive covenant is available as Appendix 6.7.

3.0 PERIODIC REVIEW

3.1 Effectiveness of completed cleanup actions

3.1.1 Current Property Conditions

Ecology visited the Marine Fluid Systems Property on August 1, 2018. The Property is mostly covered by buildings and pavement, with a thin strip of unpaved soil along the bank of the ship canal. The cap of buildings and pavement eliminates exposure to contaminated soils that remain on the Property underneath capped areas only.

However, the shop interior had an unpaved dirt floor. It is unknown whether contaminated soil is located in this area based on available data. Therefore, there is a potential for worker exposure to contaminated soil since the area is not capped. The restrictive covenant prohibits any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the remedial action, or creating a new exposure pathway. Therefore, the conditions of the restrictive covenant are not being met in the shop.

Also, a small area of pavement to the southeast of the marine railway was deteriorated. Deteriorated or cracked pavement should be repaired to maintain the integrity of the remedy. Other paved surfaces appeared to be in satisfactory condition.

The Property has an Individual Industrial National Pollutant Discharge Elimination System (NPDES) Permit (permit number WA0032174) with Ecology's Water Quality Program. Stormwater on the Property is diverted to two drainage systems. The stormwater on the northern portion of the Property is routed under permit to the King County Metro sewer. The stormwater on the southern portion of the Property is routed to a settling basin and then the Lake Washington Ship Canal. Surface water in the ship canal is monitored for oil and grease when a boat is launched into the canal. No stormwater is infiltrated at the Property.

3.1.2 Institutional Controls

The restrictive covenant for the Marine Fluid Systems Property was recorded with King County and remains active and enforceable. There is no evidence that another instrument has been recorded that limits the applicability or effectiveness of the covenant. The covenant prohibits activities that may result in the release of contaminants contained as part of the remedy, and prohibits any use of the Property that is inconsistent with the covenant. The covenant serves to assure the long-term integrity of the remedy on the Property.

However, there is no restrictive or environmental covenant that applies to the Trident Seafoods property, and the covenant restrictions regarding industrial land uses and preventing exposure to contaminated soils do not apply there. The contamination identified on the Trident Seafoods property appears to be part of the Site with a common source(s) of contamination. Therefore, the selected remedy for the Site (capping the contamination and a restrictive covenant) is not protective of the Trident Seafoods portion of the Site.

The 2000 NFA opinion letter indicates that the remedy is protective of human health and the environment at the Site and that no further action is warranted. But the selected remedy is only protective of some areas of the Marine Fluid Systems Property. Since further remedial action under MTCA is still necessary elsewhere at the Site (on the Trident Seafood property), the 2000 NFA opinion does not accurately represent Site conditions and should be rescinded.

3.1.3 Sediments

The 2000 NFA opinion letter indicates that it does not pertain to contaminated sediments, and that contaminated sediments may be addressed by Ecology in the future. Sediments in the submerged portion of and adjacent to the Property may have been impacted by the sandblasting grit previously observed in the partially submerged dock area or by other Site operations. Limited sediment sampling data from 1996 and 1997 is available for only two locations within 150 feet of the Property. The results indicate that (at least) total PCBs and mercury exceed the current sediment cleanup screening levels. The selected remedy is not protective of sediments, and the extent of contaminated sediments has not been characterized.

3.2 New scientific information for individual hazardous substances or mixtures present at the Site

There is no new scientific information for the contaminants related to the Site.

3.3 New applicable state and federal laws for hazardous substances present at the Site

Ecology updated the CULs to be consistent with the current MTCA regulation (also discussed in Section 2.2). Soil and groundwater CULs for the chemicals with exceedances on the Marine Fluid System Property are summarized below. CULs are not summarized for the chemicals with exceedances in sediment or on the Trident Seafoods property.

Cleanup Levels for Marine Fluid Systems Property

Analyte	CUL	Basis
Soil (mg/kg)		
TPH-D+O	2,000	Residual saturation
Total PCBs	0.0001	Leaching to protect surface water
cPAH TEQ	0.00031	
Arsenic	7.3	Natural background
Cadmium	0.37	Leaching to protect surface water
Chromium	0.000002	
Lead	0.54	
Mercury	0.01	
Groundwater (µg/L)		
TPH-D+O	500	Method A

The cleanup at the Site was governed by Chapter 173-340 WAC (1996 ed.). WAC 173-340-702(12) (c) [2001 ed.] provides that,

“A release cleaned up under the cleanup levels determined in (a) or (b) of this subsection shall not be subject to further cleanup action due solely to subsequent amendments to the provision in this chapter on cleanup levels, unless the department determines, on a case-by-case basis, that the previous cleanup action is no longer sufficiently protective of human health and the environment.”

Because engineered and institutional controls were used as the remedy, neither soil nor groundwater met the original CULs at the points of compliance, and do not meet current CULs either. The remedy appears to still be protective of human health and the environment underneath capped areas of the Marine Fluid System Property, but is not protective of the entire Site, as discussed in Section 3.1.

3.4 Current and projected Site or resource use

The Site is currently used for commercial and industrial purposes. There have been no changes in current or projected future Site or resource uses.

3.5 Availability and practicability of more permanent remedies

The remedy implemented included containment of hazardous substances, and it continues to eliminate direct human contact with contaminated soils on the capped portions of the Property. More permanent remedies are likely available, but they may or may not be practicable.

3.6 Availability of improved analytical techniques to evaluate compliance with cleanup levels

The analytical methods used at the time of the remedial action were capable of detection below the applicable cleanup levels. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

4.0 CONCLUSIONS

This periodic review has resulted in the following conclusions:

- The contamination on the adjacent Trident Seafoods property appears to be part of the Site with a common source(s) of contamination as the Marine Fluid Systems Property, based on available data. The remedy relied on institutional controls (via a restrictive covenant) and engineered controls (capping by pavement and buildings to prevent movement of or exposure to hazardous substances). However, the restrictive covenant for the Marine Fluid Systems Property does not apply to the Trident Seafoods property, and therefore the covenant restrictions regarding industrial land uses and preventing exposure to contaminated soils do not apply there either. The selected remedy for the Site is not protective of the Trident Seafoods portion of the Site.

Ecology's 2000 No Further Action (NFA) opinion letter indicates that the remedy is protective of human health and the environment at the Site and that no further action is warranted. But the selected remedy is only protective of some areas of the Marine Fluid Systems Property. Since further remedial action under MTCA is still necessary elsewhere at the Site (the Trident Seafoods property), the 2000 NFA opinion does not accurately represent Site conditions and should be rescinded.

- The 2000 NFA opinion letter indicates that it does not pertain to contaminated sediments, and that contaminated sediments may be addressed by Ecology in the future. Sediments in the submerged portion of and adjacent to the Property appear to have been impacted by sandblasting grit previously observed in the partially submerged dock area or by other Site operations. Limited sediment sampling results from the 1990s indicate that (at least) total PCBs and mercury exceed the current sediment cleanup screening levels. The selected remedy is not protective of sediments, and the extent of contaminated sediments has not been characterized.
- The shop interior on the Marine Fluid Systems Property has an unpaved dirt floor. There is a potential for worker exposure to contaminated soil since the area is not capped. The restrictive covenant prohibits any activity on the Property that may result in the release or exposure of a hazardous substance that remains on the Property as part of the remedial action, or creating a new exposure pathway. Therefore, the conditions of the restrictive covenant are not being met in the shop. The shop floor should be capped/paved.

Other areas of the Property are capped with pavement or buildings. However, a small area of pavement to the southeast of the marine railway was deteriorated. Deteriorated or cracked pavement should be repaired to maintain the integrity of the initial 2000 remedy.

It is the property owner's responsibility to continue to inspect the Site to assure that the integrity of the remedy is maintained.

5.0 REFERENCES

Ecology. August 1, 2018. *Site Visit*.

Ecology. February 3, 2000. *Opinion Letter on Independent Remedial Action, Marine Fluid Systems*.

Ecology. February 3, 2015. *Memorandum, Site Boundary at Southeast Corner of Marine Fluids Property*.

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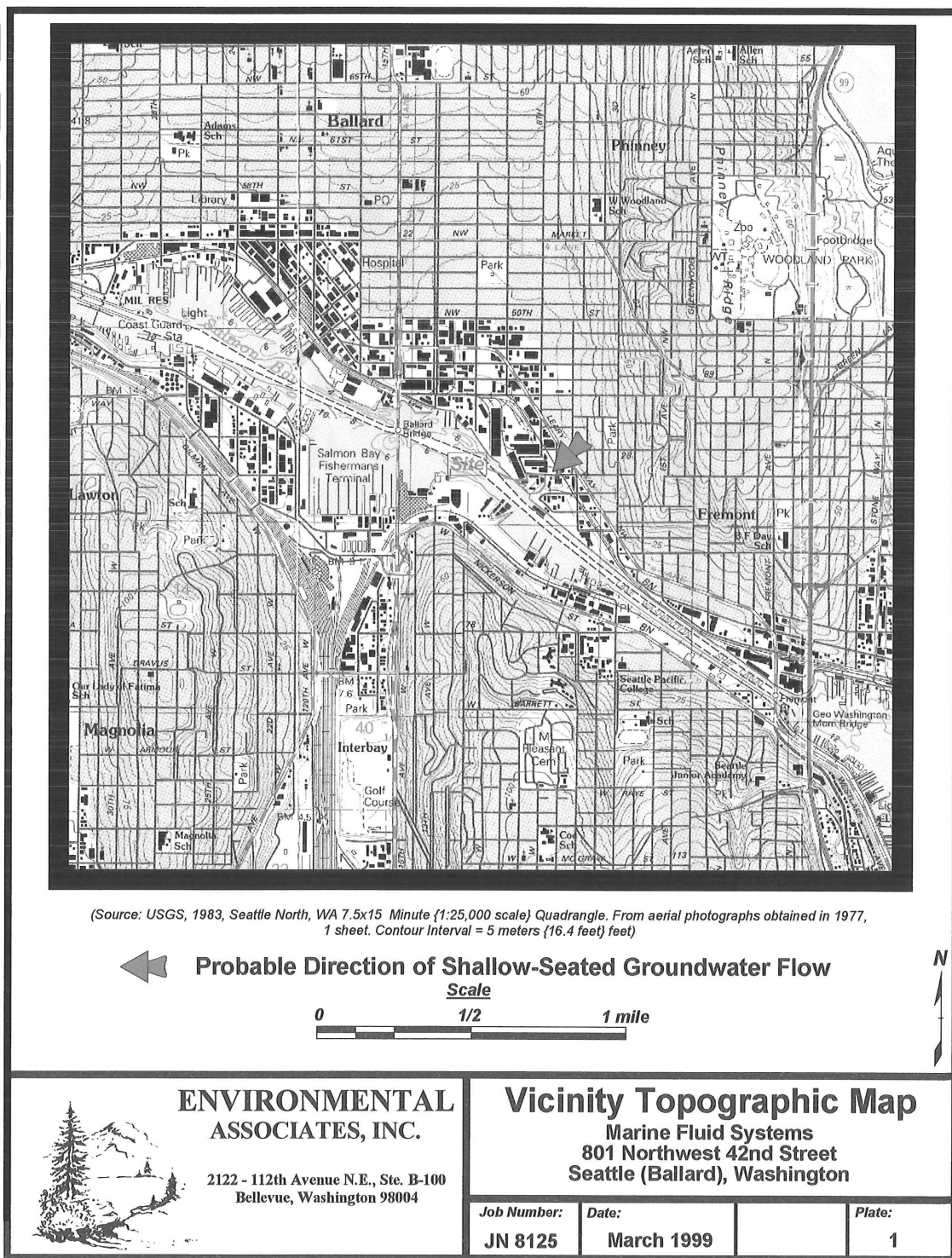
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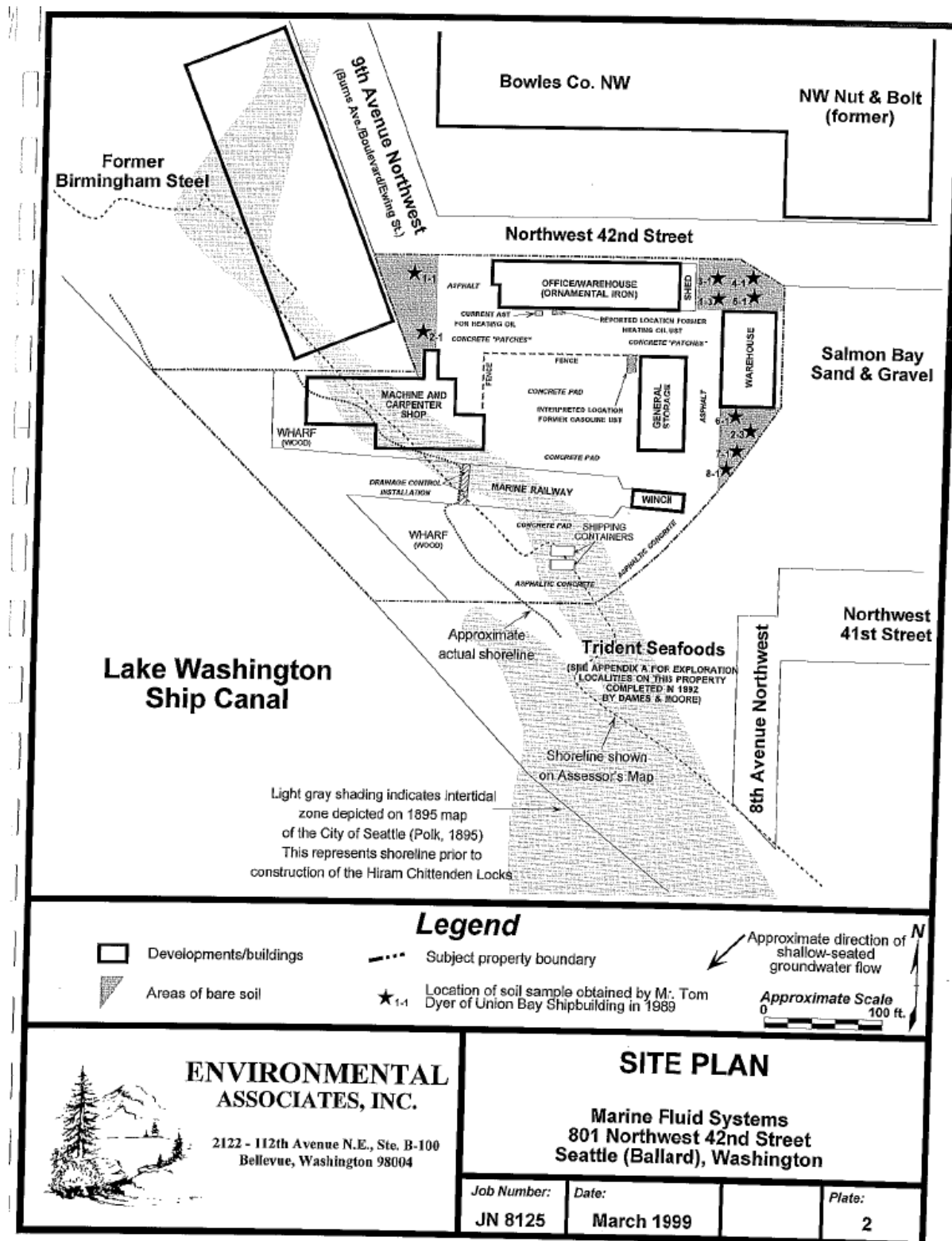
Parametrix. November 1993. *Phase 1 Environmental Site Assessment, Union Bay Shipbuilding Corporation Site*.

6.0 APPENDICES

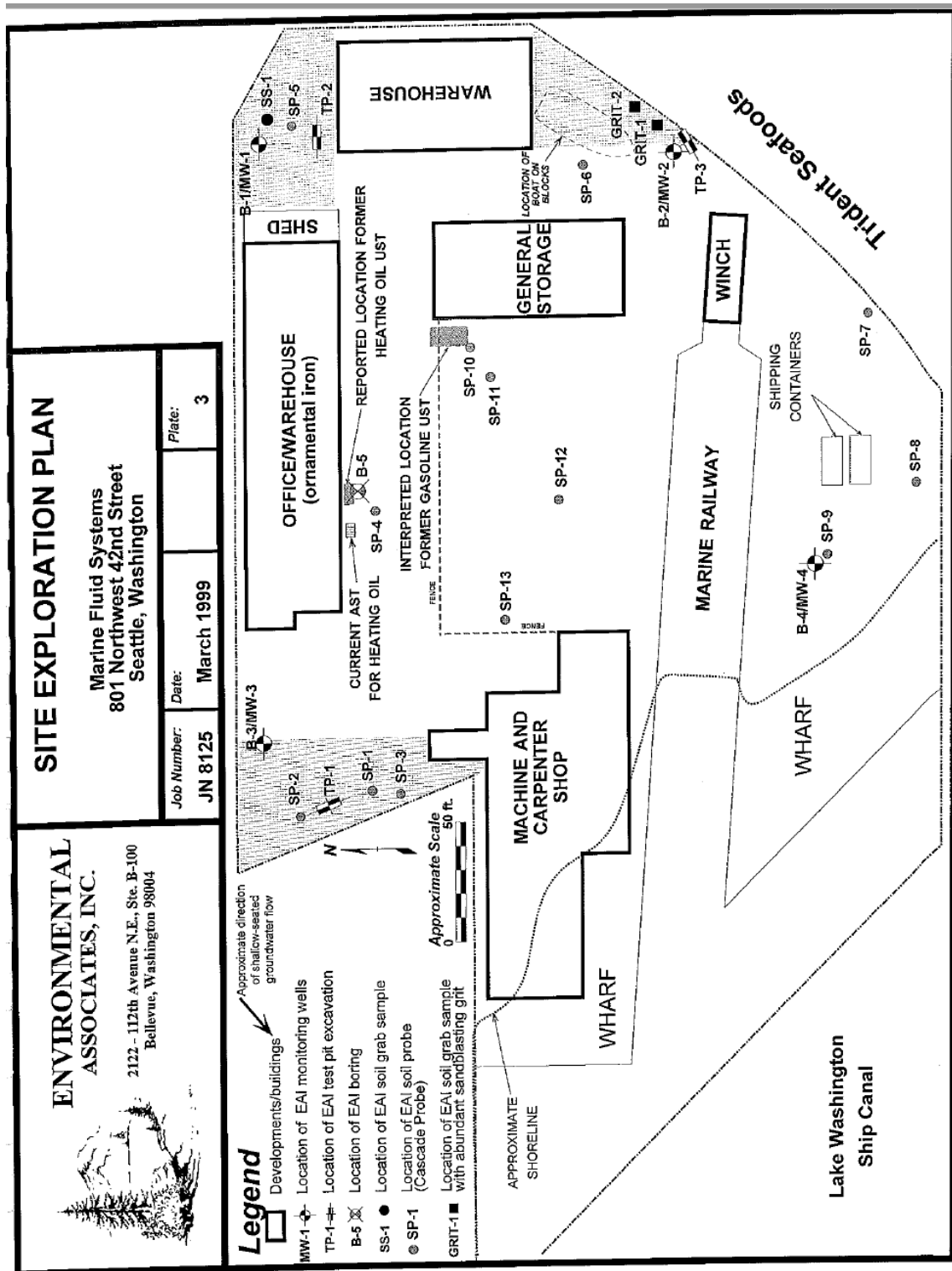
6.1 Vicinity Map (Environmental Associates, 1999)



6.2 Site Plan (Environmental Associates, 1999)



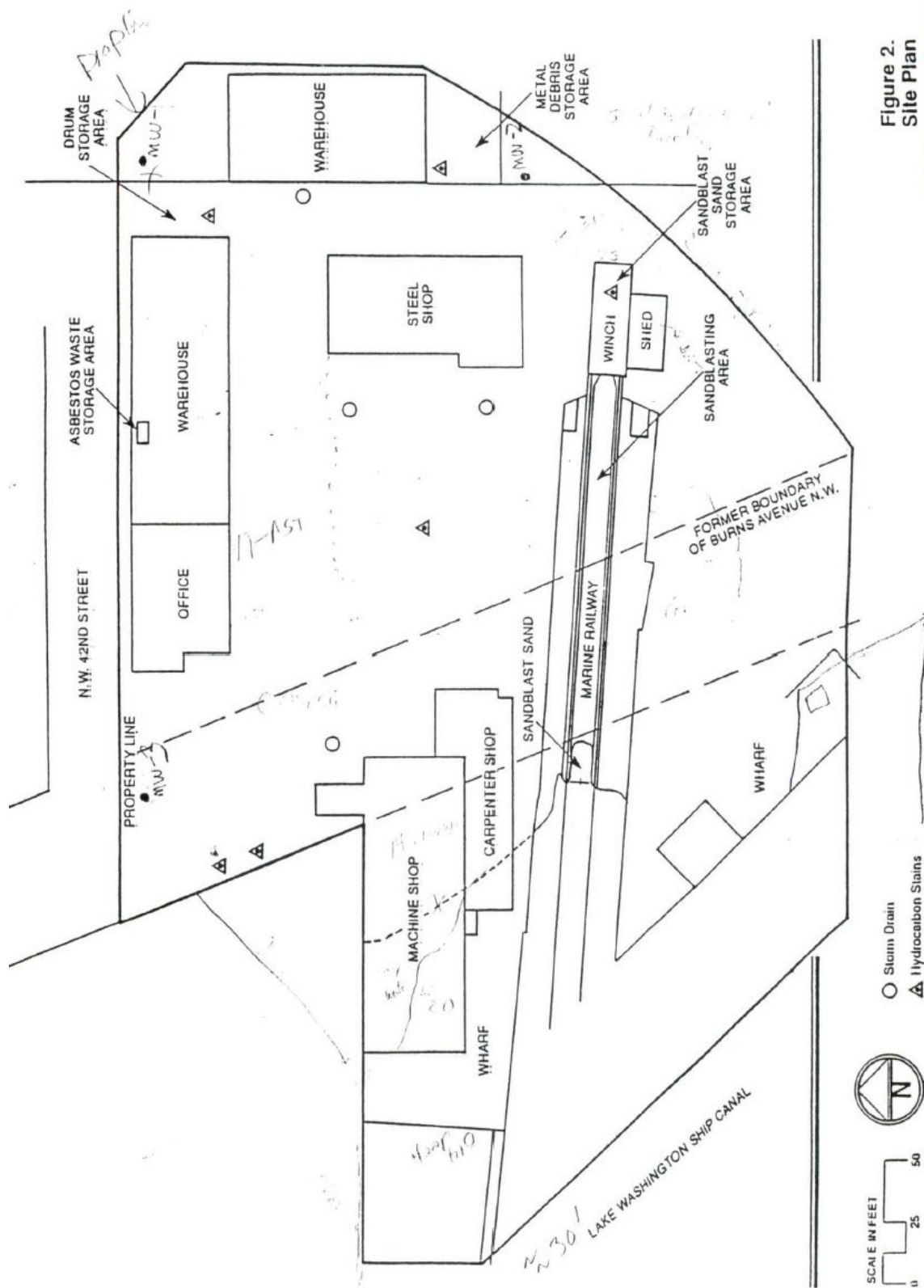
6.3 Site Plan with Sampling Locations on Marine Fluid Systems Property (Environmental Associates, 1999)



6.4 Site Plan with Sampling Locations on Marine Fluid Systems and Trident Seafoods Properties (Ecology, 2018)



6.5 Site Plan with Sandblasting Areas (Parametrix, 1993)



6.6 Tables Summarizing Sampling Results on Marine Fluid Systems and Trident Seafoods Properties (Ecology, 2018)

Table 1. Detected Soil Sampling Results
Marine Fluid Systems

Analyte	No. Samples Analyzed	Maximum Concentration			1999/2000 Screening Level			2018 Screening Level		
		(mg/kg)	Location	ft bgs	(mg/kg)	Basis	No. > SL (a)	(mg/kg)	Basis	No. > SL (a)
TPH-D + TPH-O	14	3,300	SP-7	1	200	Method A	10	2,000	Method A	2
Total PCBs	3	1	SS-1	< 1.5	10	Method A industrial	0	0.0001	Leaching to surface water	2
cPAH TEQ	5	1.6	SS-1	< 1.5	20	Method A industrial	0	0.00031	Leaching to surface water	2
Arsenic	8	157	TP-3	1	200	Method A industrial	0	7.3	Natural background	4
Barium	8	133	TP-2	5	5,600	Method B contact	0	820	Leaching to surface water	0
Cadmium	8	1.7	TP-3	1	10	Method A industrial	0	0.37	Leaching to surface water	4
Chromium	8	38.7	TP-3	1	500	Method A industrial	0	0.000002	Leaching to surface water	8
Lead	8	357	TP-1	2.25	1,000	Method A industrial	0	0.54	Leaching to surface water	8
Mercury	8	0.9	B-1-S	0	1.0	Method A industrial	0	0.01	Leaching to surface water	2
4-Chlorotoluene	6	0.017	B-2-2	5.9	na	--	--	70,000	Method C industrial contact (b)	0
Ethylbenzene	6	0.240	B-2-2	5.9	20	Method A industrial	0	0.24	Leaching to surface water	0
Naphthalene	6	0.788	B-2-2	5.9	320	Method B contact	0	4.5	Leaching to surface water	0
1,2,4-Trimethylbenzene	6	0.153	B-2-2	5.9	na	--	--	35,000	Method C industrial contact (b)	0
Total xylenes	6	6.89	B-2-2	5.9	20	Method A industrial	0	14	Leaching to surface water	0

(a) Number of detected results exceeding CUL.

(b) No leaching CUL available due to lack of Koc

cPAH TEQ = toxicity equivalents of benzo(a)pyrene

ft bgs = feet below ground surface

SL = screening level

Table 2. Detected Ground Water Sampling Results
Marine Fluid Systems

Analyte	No. Samples Analyzed	Maximum Concentration			1999/2000 Screening Level			2018 Screening Level		
		(µg/L)	Location	Date	(µg/L)	Basis	No. > SL (a)	(µg/L)	Basis	No. > SL (a)
TPH-D + TPH-O	12	731	MW-4	May 1998	1,000	Method A	0	500	Method A	1
Arsenic, total	4	7.59	MW-3	May 1998	5.0	Method A	1	8	Natural background	0
Barium, total	4	86.0	MW-4	May 1998	1,120	Method B	0	1,000	human health	0
Chromium, dissolved	4	3.3	MW-4	May 1998	50	Method A	0	57	WAC 173-201A	0
Selenium, dissolved	4	1.2	MW-1	May 1998	80	Method B	0	5	WAC 173-201A	0

(a) Number of detected results above screening level

CWA = Clean Water Act

SL = screening level

**Table 3. Detected Sediment Sampling Results near
Marine Fluid Systems**

Analyte	No. Samples Analyzed	Maximum Concentration		Freshwater Sediment Cleanup Objective (SCO) (mg/kg DW)	Freshwater Cleanup Screening Level (CSL) (mg/kg DW)
		(mg/kg DW)	Location		
Total PCBs	1	7.6	SALMII96 7A	0.11	2.5
A1254	1	0.14	SALIII97 7A2	0.11	2.5
Benzo(g,h,i)perylene	1	1.6	SALMII96 7A	nv	nv
Dibenz(a,h)anthracene	1	0.37	SALMII96 7A	nv	nv
Carbazole	2	0.28	SALMII96 7A	0.9	1.1
Indeno(1,2,3-cd)pyrene	1	1.6	SALMII96 7A	nv	nv
bis(2-Ethylhexyl)phthalate	2	2.1	SALMII96 7A	0.5	22
Arsenic	2	120	SALIII97 7A2	14	120
Copper	2	820	SALIII97 7A2	400	1,200
Mercury	2	3	SALIII97 7A2	0.66	0.8
Zinc	2	1,140	SALMII96 7A	3,200	> 4,200

DW = dry weight

nv = no value available

**Table 4. Detected Soil Sampling Results
Trident Seafood**

Analyte	No. Samples Analyzed	Maximum Concentration		2018 Screening Level		
		(mg/kg)	Location	(mg/kg)	Basis	No. > SL (a)
TPH	9	12,000	HA-1 and A2-1S	2,000	Method A	3
Antimony	2	24	Offsite soil (b)	5	Leaching to surface water	1
Arsenic	4	139	SS-3A	7.3	Natural background	3
Barium	2	167	SS-3A	820	Leaching to surface water	0
Beryllium	2	0.18	Offsite soil (b)	63	Leaching to surface water	0
Cadmium	4	4.7	Offsite soil (b)	0.37	Leaching to surface water	4
Chromium	4	80	Offsite soil (b)	0.000002	Leaching to surface water	4
Copper	2	470	Offsite soil (b)	1.6	Leaching to surface water	2
Lead	4	1,030	SS-3A	0.54	Leaching to surface water	4
Mercury	4	0.4	Offsite soil (b)	0.01	Leaching to surface water	3
Nickel	2	35	Offsite soil (b)	64	Leaching to surface water	0
Silver	4	0.9	SS-3A	14	Leaching to surface water	0
Zinc	2	1,600	Offsite soil (b)	40	Leaching to surface water	2
Methylene chloride	6	9.8	TP-1	0.02	Leaching to surface water	4
Acetone	6	12	Control soil	29	Leaching to surface water	0
Methyl ethyl ketone	6	1.4 J	SS-1A	2,100,000	Method C industrial contact (d)	0
1,1,1-Trichloroethane	6	5	SS-4A	1.5	Leaching to surface water	1
Toluene	6	32	SS-4A	0.4	Leaching to surface water	4
Total xylenes	6	0.9 J	HA-1	14	Leaching to surface water	0

The depths of the soil samples are unknown.

Sample results marked as having blank contamination or low spectral match were not considered.

(a) Number of detected results exceeding CUL.

(b) Despite the name, this sample was apparently collected on Trident Seafood property.

(d) No leaching CUL available due to lack of Koc

cPAH TEQ = toxicity equivalents of benzo(a)pyrene

ft bgs = feet below ground surface

SL = screening level

**Table 5. Detected Ground Water Sampling Results
Trident Seafood**

Analyte	No. Samples Analyzed	Maximum Concentration		2018 Screening Level		
		(µg/L)	Location	(µg/L)	Basis	No. > SL (a)
TPH	3	1,000	MW-A2	500	Method A	1
Methylene chloride	3	2.3	MW-A3	5	Drinking water	0
Acetone	3	3.8 J	MW-A3	7,200	Drinking water	0
Chloroform	3	5.6	MW-A2	14	Drinking water	0
Methyl ethyl ketone	3	8.9	MW-A2	4,800	Drinking water	0
Methyl isobutyl ketone	3	5.2	MW-A2	640	Drinking water	0
Toluene	3	2.8	MW-A2	57	CWA human health	0

Sampling dates are unknown but must be no later than March 1999

(a) Number of detected results above screening level

CWA = Clean Water Act

SL = screening level

6.7 Restrictive Covenant

WHEN RECORDED RETURN TO:
ROBERT L. DENORMANDIE JR.
YOUNG, DENORMANDIE & OSCARSSON
1191 2ND AVENUE, SUITE 1901
SEATTLE, WA 98101



CHICAGO TITLE INSURANCE COMPANY

1999 121 7001233

DOCUMENT TITLE(s)	
1 RESTRICTIVE COVENANT	FILED BY CHICAGO TITLE INSURANCE CO. Number: 000490175
2	
3	REF.# 490175-60 6 th
4	13
REFERENCE NUMBER(s) OF DOCUMENT ASSIGNED OR RELEASED: <input type="checkbox"/> Additional reference numbers on page ____ of document	
GRANTOR(s) :	
1 FLORENCE J. EVANS	
2	
3	<input type="checkbox"/> Additional names on page ____ of document
GRANTEE(s) :	
1 STATE OF WASHINGTON DEPT. OF ECOLOGY	
2	
3	<input type="checkbox"/> Additional names on page ____ of document
ABBREVIATED LEGAL DESCRIPTION:	
LOTS 3-6, BLOCK 1, SEATTLE TIDE LANDS AND A PORTION OF GOVERNMENT LOT 3 IN THE NORTHWEST QUARTER OF 13-25-3, TGW VAC STREETS ADJ.	
<input type="checkbox"/> Complete legal description is on page ____ of document	
ASSESSOR'S PROPERTY TAX PARCEL ACCOUNT NUMBER(s) :	
132503-9001-03	
Additional Tax Accounts are on page ____ of document	
<p>Note: This cover sheet is prepared to conform to the requirements of Chapter 143, Laws of 1996. Nothing on this sheet alters the names, legal description or other information in the attached document. The only purpose of this cover sheet is to assist the auditor in indexing the document in conformance with statute.</p>	
<p>The Recorder will rely on the information provided on this form. The staff will not read the document to verify the accuracy or completeness of the indexing information provided herein.</p>	

COVER/RDA/999

RESTRICTIVE COVENANT

Florence J. Evans

This Declaration of Restrictive Covenant is made pursuant to RCW 70.105D.030(1) (f) and (g) and WAC 173-340-440 by Florence J. Evans, her successors and assigns, and the State of Washington Department of Ecology, its successors and assigns (hereafter referred to as "Ecology").

An independent remedial action (hereafter referred to as "Remedial Action") occurred at the property that is the subject of this restrictive covenant (hereafter referred to as "Restrictive Covenant"). The Remedial Action conducted at the property is described in the following documents:

1. Phase 1 Environmental Site Assessment; Union Bay Ship Building Corporation Site, prepared for Ms. Billie Adams, Tippet Marine Services, Seattle, WA. by Parametrix, Inc., Kirkland, WA., November, 1993.
2. Subsurface Environmental Study, Marine Fluid Systems, 801 Northwest 42nd Street, Seattle (Ballard), Washington, prepared for Dana Bostwick, Ballard Land Management, Roy, WA., by Environmental Associates, Inc., Bellevue, WA., March 17, 1999.

These documents are on file at Ecology's Northwest Regional Office.

This Restrictive Covenant is required because a Remedial Action has determined that the property contains diesel, heavy oil and carcinogenic polynuclear aromatic hydrocarbons, and metals, in soils which exceed the Model Toxics Control Act Method A Residential Cleanup Levels for soil established under WAC 173-340-740. *RB*

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The undersigned, Florence J. Evans, is the fee owner of the real property in the County of King, State of Washington (hereafter referred to as "Property"), that is subject to this Restrictive Covenant. The Property is legally described as follows:

Lots 3, 4, 5, and 6, Block 1, Seattle Tide Lands; ALSO, that portion of Section 13, Township 25 North, Range 3 East, W.M. in King County, Washington, described as follows; Beginning at the northeast corner of Government Lot 3 of said Section 13; thence south 50°24'29" east along the northerly line of that portion of 8th Avenue Northwest vacated by Ordinance No. 76354 of the City of Seattle, 39.50 feet to the northwest corner of Lot 1, Block 1, Ross Home Addition, according to plat recorded in Volume 11 of Plats, page 25, King County, Washington; thence southerly along the west line of said Lot 1, to an intersection with the southeasterly line of that certain tract of land dedicated to the City of Seattle by the Northern Pacific Railway Company by deed recorded in Volume 871 of Deeds, page 242, under Auditor's File No. 915617, and later vacated by Ordinance No. 75290 of said City; thence southwesterly along the southeast line of said tract, as vacated by said Ordinance No. 76290 to an intersection with the east line of Burns Avenue Northwest (formerly Ewing Street) as established by Ordinance No. 14267 of said City; thence continuing southwesterly along the southeasterly line of that portion of said Burns Avenue Northwest, as vacated by Ordinance No 76354 of said County, to an intersection with the northeasterly line of Block 1, Seattle Tide Lands; thence north 21°47'24" west along the said northeast line of Block 1, Seattle Tide Lands, being also the southwesterly line of that portion of said Burns Avenue Northwest, as vacated by Ordinance Nos. 76354 and 72347 and 69210 of said City, to an intersection with the south line West 42nd Street; thence north 89°58'31" east along south line to the point of beginning.

Florence J. Evans, makes the following declaration as to limitations, restrictions, and uses to which the Property may be put and specifies that such declarations shall constitute covenants to run with the land, as provided by law and shall be binding on all parties and all persons claiming under them, including

(2)

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all current and future owners of any portion of or interest in the Property
(hereafter referred to as "Owner").

Section 1. The Property shall be used only for traditional industrial uses, as described in RCW 70.105D.020(23) and defined in and allowed under the City of Seattle's zoning regulations codified in the Municipal Code of the City of Seattle, Title 23, Land Use Code, as of the date of the Restrictive Covenant.

Section 2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.

Section 3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.

Section 4. The owner of the Property must give thirty (30) day advance written notice to Ecology of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.

Section 5. The owner must restrict leases to uses and activities consistent with the Restrictive Covenant and notify all lessees of the restrictions on the use of the Property.

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Section 6. The owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Restrictive Covenant. Ecology may approve and inconsistent use only after public notice and comment.

Section 7. The owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial Action; to take samples; to inspection Remedial Actions conducted at the property, and to inspect records that are related to the Remedial Action.

Section 8. The owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this Restrictive Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

APPROVED BAIRD LAND MANAGEMENT
[Signature]

Dated at Seattle, Washington, this 15 day of December, 1999

By

Florence J. Evans
Florence J. Evans, Owner

Date 12-15-99

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SIGNATURE PAGE

Florence Evans
FLORENCE EVANS

STATE OF WASHINGTON

SS

COUNTY OF KING

ON THIS 15TH DAY OF DECEMBER, 1999 9 BEFORE ME, THE UNDERSIGNED,
A NOTARY PUBLIC IN AND FOR THE STATE OF WASHINGTON, DULY COMMISSIONED
AND SWORN, PERSONALLY APPEARED FLORENCE EVANS KNOWN TO ME TO BE THE
INDIVIDUAL(S) DESCRIBED IN AND WHO EXECUTED THE WITHIN INSTRUMENT AND
ACKNOWLEDGED THAT SHE SIGNED AND SEALED THE SAME AS HER FREE AND
VOLUNTARY ACT AND DEED, FOR THE USES AND PURPOSES HEREIN MENTIONED.

Scott Smouse

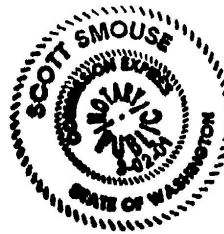
NOTARY SIGNATURE

PRINTED NAME: Scott Smouse

NOTARY PUBLIC IN AND FOR THE STATE OF WASHINGTON

RESIDING AT Bellevue

MY COMMISSION EXPIRES ON 3/2/2001



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