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CLOSURE REPORT

YARROW BAY MARINA
5207 LAKE WASHINGTON BOULEVARD NORTHEAST
KIRKLAND, WASHINGTON

Submitted by:
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Farallon PN: 112-001

For:
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Yarrow Bay Marina
5207 Lake Washington Boulevard Northeast
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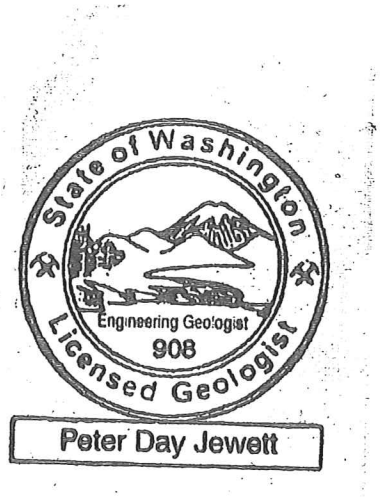

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1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this Closure Report on behalf of Yarrow Bay Marina to document the completion of the cleanup action and four consecutive quarters of groundwater monitoring at the western parcel of Yarrow Bay Marina located at 5207 Lake Washington Boulevard Northeast in Kirkland, Washington (herein referred to as the Site) (Figure 1). The cleanup action included decommissioning by removal of underground storage tanks (USTs), excavation and off-Site disposal of soil, and completion of four consecutive quarters of groundwater monitoring. The cleanup action has been conducted as an independent cleanup action under the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP) and in accordance with the Cleanup Action Plan (CAP) dated February 5, 2008, prepared by Farallon.

The Site comprises King County Tax Parcel No. 172505-9130, which is an irregular-shaped lot that consists of approximately 44,797 square feet of commercial property, a portion of which extends into Lake Washington (Figure 2). The cleanup action was conducted during redevelopment of the Site, which included demolishing existing structures, re-grading the Site, and constructing a new boathouse and office building. Structures that were demolished included a 1950s-era two-story wood-frame retail store and a wood-frame garage.

The results of environmental assessments conducted by others identified the historical use of the Site as a boat repair facility and commercial boat refueling station (Sound Environmental Strategies [SES] 2006a). An 8,000-gallon UST containing gasoline and a 1,750-gallon UST containing diesel fuel were located on the northeastern corner of the Site, and a fuel dispenser island was located on the western portion of the property adjacent to Lake Washington. The USTs and fuel dispenser island were replaced as part of the cleanup action and redevelopment of the Site.

1.1 PURPOSE

The cleanup action was conducted in accordance with the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) as established in Chapter 173-340 of the Washington Administrative Code (WAC 173-340) to protect human health and the environment, to restore beneficial uses of soil and groundwater at the points of compliance for the Site, and to meet Ecology requirements to obtain a No Further Action (NFA) determination for the Site. The cleanup action included:

- Removal of an 8,000-gallon gasoline UST and a 1,750-gallon diesel UST;
- Excavation and disposal of soils located proximate to the fuel dispensers that contain concentrations of petroleum hydrocarbons exceeding the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) cleanup levels for the Site;
- Installation of groundwater monitoring wells to serve as points of compliance following removal of gasoline/diesel fuel USTs, and excavation of soils adjacent to the fuel dispensers; and

- Completion of four consecutive quarters of groundwater monitoring at the point of compliance monitoring wells.

1.2 ORGANIZATION

The Closure Report has been organized into the following sections:

- **Section 1 – Introduction** provides the purpose and organization of the Closure Report.
- **Section 2 – Site Description and Background** provides a description of the current Site and historic Site information, includes a summary of Site geology and hydrogeology, reviews previous investigations, and discusses the technical elements of the cleanup action.
- **Section 3 – Cleanup Action** provides a description of the cleanup action activities conducted at the Site and the results.
- **Section 4 – Groundwater Monitoring** provides a description of the compliance monitoring conducted after the cleanup action.
- **Section 5 – Conclusions** summarizes Farallon's conclusions pertaining to the cleanup action.
- **Section 6 – References** presents a list of documents cited in this report.

2.0 SITE DESCRIPTION AND BACKGROUND

This section includes a description of the Site and historic Site information, Site geology and hydrogeology, previous investigations conducted at the Site; and a summary of the technical elements for the cleanup action. A more detailed discussion is provided in the CAP (Farallon 2008).

2.1 SITE DESCRIPTION

The Site is located in a mixed-use commercial and residential area in Kirkland, Washington (Figure 1). The property comprises King County Tax Parcel No. 172505-9130, which is an irregular-shaped lot that consists of approximately 44,797 square feet of land at the western portion of the Yarrow Bay Marina (Figure 2). The Site extends westward into Lake Washington. The eastern portion of the Yarrow Bay Marina, located on King County Tax Parcel No. 172505-9114, is not considered part of the Site.

The Yarrow Bay Marina has recently been redeveloped and currently offers boat moorage, rental, sales, boat fueling, and service. Prior to redevelopment, the Site operated as a marina and boat repair and fueling facility. The former Site configuration included a wood-frame garage attached to a two-story wood-frame retail store at the south end of the Site and an engine repair shop in the wood-frame garage. Prior to the cleanup action, an 8,000-gallon UST containing gasoline and a 1,750-gallon UST containing diesel fuel were located in the northeastern corner of the Site, and a fuel dispenser island was located on the western portion of the property adjacent to Lake Washington. The removed USTs and fuel dispenser have been replaced with a new double-walled UST (single tank with gas and diesel chambers), new double-walled fuel lines, and fuel dispensers complete with sumps to prevent leakage.

2.2 GEOLOGY AND HYDROGEOLOGY

Kirkland, Washington is located on the Interlake Drift Upland, which was created during the retreat of continental glaciers during the most recent stade of glaciation nearly 14 million years ago during the Pleistocene era. The geology in the vicinity consists of glacial debris deposited during the Vashon stade of glaciation, including glacial till, sands and gravels. The glacial till consists of dense, gravelly, sandy silt to silty sand with varied quantities of clay and scattered cobbles and boulders. Some of the Pleistocene deposits are overlain by Holocene alluvium, consisting of sand and gravel, overbank silt and clay deposits, and peat (Alt and Hyndman 1984; Galster and Laprade 1991).

Previous investigations conducted by others at the Site encountered fill material consisting of fine sand and silt with gravel from the ground surface to approximately 15 feet below ground surface (bgs). Depth to groundwater at the Site is approximately 5 feet bgs. Based upon inference from topography and local drainage patterns and groundwater monitoring conducted at the Site, shallow seated groundwater generally flows in a westerly direction into Lake Washington.

2.3 PREVIOUS INVESTIGATIONS

The analytical results of soil samples collected at the Site by others detected concentrations of total petroleum hydrocarbons (TPH) as gasoline-range organics (GRO) and as diesel-range organics (DRO); and/or benzene, toluene, ethylbenzene, and xylenes (BTEX) in soil samples collected from a boring located adjacent to the former fuel dispenser at depths of 3.0 to 3.5 bgs (SES 2006a, 2006b) (Figure 2). Concentrations of TPH were detected in a reconnaissance groundwater sample collected adjacent to the former fuel dispenser (Figure 3). Concentrations of DRO exceeding MTCA Method A cleanup levels were detected in groundwater samples collected from a monitoring well formerly located down-gradient of the USTs (SES 2006a, 2006b). Concentrations of petroleum hydrocarbons were not detected above applicable MTCA Method A cleanup levels and/or the laboratory practical quantitation limits in soil or reconnaissance groundwater samples collected from the borings located adjacent to the former USTs (SES 2006a, 2006b). Concentrations of DRO in reconnaissance groundwater samples collected from borings locate in, and proximate to, the former engine repair shop exceeded the MTCA Method A cleanup level (SES 2006a); however, the concentration of DRO in groundwater samples collected at a former monitoring well installed in the engine repair shop did not detect concentrations of DRO above the MTCA Method A cleanup level. Soil samples collected from borings advanced in, and adjacent to, the former engine repair shop did not detect concentrations of DRO or other petroleum hydrocarbon constituents above applicable MTCA Method A cleanup levels. A summary of soil and groundwater analytical results from previous investigations conducted at the Site by others is presented in Tables 1 and 2, respectively.

2.4 TECHNICAL ELEMENTS

This section summarizes the media of concern, constituents of concern (COCs) identified for the Site, cleanup levels, and points of compliance. A more detailed presentation of the technical elements associated with the Site is provided in the CAP (Farallon 2008).

Soil and groundwater are the media of concern for the Site. The COCs for soil are DRO, GRO, and total xylenes. The COCs for groundwater are DRO, GRO, and benzene. The cleanup levels for soil at the Site are the MTCA Method A soil cleanup levels for unrestricted land uses. The cleanup levels for COCs in soil are:

- DRO – 2,000 milligrams per kilogram (mg/kg);
- GRO – 30 mg/kg; and
- Total xylenes – 9 mg/kg.

The cleanup levels for groundwater are the MTCA Method B cleanup levels for surface water and the MTCA Method A cleanup levels for groundwater. The cleanup levels for the COCs in groundwater are as follows:

- DRO – 500 micrograms per liter (µg/l);
- GRO – 800 µg/l; and
- Benzene – 5 µg/l.

The point of compliance for soil is defined as all soil where analytical results for in-situ soil samples indicate that concentrations of one or more of the COCs are below the MTCA Method A cleanup levels and that residual concentrations of COCs in the soil are protective of the direct contact, soil to groundwater, and vapor exposure pathways. The point of compliance for groundwater is defined as groundwater throughout the Site. The points of compliance to monitor groundwater at the Site include monitoring wells MW-8, MW-9, and MW-10 installed following the cleanup action at the Site (Figure 6).

3.0 CLEANUP ACTION

This section summarizes the cleanup action completed at the Site. The cleanup action was conducted from March to September 2008 and included removal of two USTs and the former fuel dispenser; excavation and disposal of contaminated soil in the vicinity of the fuel dispenser; dewatering the excavation and disposal of the extracted water; collection and analysis of performance and confirmation soil samples from the excavations; sampling and analysis of soil with suspected contamination that was exposed during redevelopment activities; and completion of four consecutive quarters of groundwater monitoring.

The cleanup action was conducted in conjunction with the redevelopment of the Site. During the course of the cleanup action, the Site was an active construction site. GLY Construction, Inc. of Bellevue, Washington (GLY) oversaw the redevelopment activities at the Site. Farallon provided oversight throughout the cleanup action and redevelopment to observe and document cleanup action activities, conduct soil sampling and field analysis, and collect compliance soil and groundwater samples. A detailed description of Site preparation and cleanup action activities is provided below.

3.1 PREPARATION ACTIVITIES

Preparation activities included marking underground utilities and decommissioning monitoring wells. Monitoring well MW-01 was decommissioned in-place on November 2, 2007 by a licensed well driller from Slead Construction, Inc (Slead) by backfilling with bentonite chips from the total well depth to surface grade in accordance with Section 381 of WAC 173-160, Minimum Standards for Construction and Maintenance of Wells; Standards for Decommissioning a Well (Figure 2). The monitoring well decommissioning log was provided to Ecology on November 5, 2007 and is included in Appendix A. Monitoring wells MW-02 through MW-07 were decommissioned by Boart Longyear of Milton, Washington on March 26, 2008. However, the monitoring well decommissioning logs for monitoring wells MW-02 through MW-07 have not been provided to Farallon.

3.2 UST DECOMMISSIONING

The two USTs that were located on the northeast corner of the western parcel were decommissioned by removal in March 2008 (Figure 4). Soil samples were collected from the base and sidewall of the open excavation and from stockpiled soils, and were analyzed for GRO, DRO, and BTEX. Concentrations of TPH and BTEX were not detected above the MTCA Method A cleanup levels in any of the soil samples analyzed. A grab sample was collected from the standing water in the open excavation and analyzed for TPH. Laboratory analytical results for the grab water samples detected concentrations of GRO, BTEX, and lead above the MTCA Method A cleanup levels for groundwater. Details of the UST decommissioning are presented in the *Underground Storage Tank Decommissioning/Site Assessment, Yarrow Bay Marina, 5207 Lake Washington Boulevard, Kirkland, Washington 98033, Site ID #A8548* dated April 8, 2008, prepared by DLH Environmental Consulting of Seattle, Washington, which is provided in Appendix B.

3.3 FUEL DISPENSER EXCAVATION AND DEWATERING

Approximately 200 tons of soil with concentrations of TPH above the MTCA Method A cleanup levels for soil was excavated from the area proximate to the fuel dispenser between March 26 and March 31, 2008 by Pacific Environmental Services Company of Port Townsend, Washington (PESCO) (Figure 5). Soil with field evidence of contamination was excavated to the maximum extent possible; however the excavation was limited in some areas by structural tiebacks, horizontal timbers, cables, and pilings that were associated with the bulkhead along Lake Washington. The base of the excavation area was dewatered by Marine Vacuum Service, Inc. of Seattle, Washington to the maximum extent possible during excavation to remove water containing concentrations of TPH.

Contaminated soils were removed to a depth of 5 to 6 feet bgs along the bulkhead and to 8 to 9 feet bgs in areas of the excavation located away from the bulkhead. Soil with visual and olfactory evidence of TPH was left in place at the northwestern corner and northern edge of the excavation due to the structural limitations of excavating near the bulkhead. Soil samples were collected at the limits of the excavation and submitted for laboratory analysis of DRO by Northwest Method NWTPH-Dx, GRO by Northwest Method NWTPH-Gx, and BTEX by U.S. Environmental Protection Agency (EPA) Method 8021B. Soil samples were collected from the bottom and sidewalls of the excavation to confirm that soil containing concentrations of DRO, GRO, and BTEX had been removed. A total of nine samples were collected from the excavation area. Analytical results for seven of the nine samples did not detect concentrations of DRO, GRO, and/or BTEX above the PQLs (Table 3).

Soil at the northwest corner of the excavation area was left in place due to structural limitations. Soil with concentrations of DRO, GRO, and BTEX that exceeded the MTCA Method A cleanup levels for soil was left in place at a depth of 6 feet bgs on the northwest corner and the north side of the excavation (Figure 5). Soil at these locations was left in place due to the structural limitations associated with undermining the bulkhead. Analytical results of soil samples collected from the southern and eastern limits of the excavation area confirm that soil containing concentrations of DRO, GRO, and BTEX above the MTCA Method A cleanup levels had been removed.

Excavated soil was characterized based on the analytical results of soil samples collected from the excavation area. Soil was transported off the Site for disposal at the La Farge Corporation Seattle Plant. The waste disposal tickets are provided in Appendix C.

3.4 SOIL SAMPLING

During grading and redevelopment construction activities at the Site, GLY observed areas with possible indications of petroleum hydrocarbons. GLY notified Farallon of the areas of concern to collect soil samples for laboratory analysis. The soil sampling locations are depicted on Figure 4 and the results of the laboratory analysis are presented in Tables 4 and 5.

Soil samples were collected from locations where suspected impacted soil was exposed by foundation and utility trench excavation activities, from a test pit located near a former

boathouse shop drain, and from the excavation limits of a discovered septic tank (Figure 4). Soil samples collected from these areas were analyzed for DRO by Northwest Method NWTPH-Dx, GRO by Northwest Method NWTPH-Gx, and BTEX by EPA Method 8021B. Concentrations of DRO, GRO, and BTEX were not detected above the laboratory PQLs and/or respective MTCA Method A cleanup levels in any of the soil samples collected from areas where suspected contamination was observed (Table 4).

Buried treated timbers were encountered during excavation of a utility trench. Soil samples collected from the excavated trench were analyzed for carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by EPA Method 8270D SIM. The total toxicity equivalence (TEQ) concentration for the cPAHs was calculated using the appropriate toxicity equivalency factors (TEFs) for the suite of cPAHs presented in Section 708(e) of WAC 173-340 and compared to the MTCA Method A cleanup level for soil. The analytical results of the samples FE-2 and FE-4 collected from the utility trench proximate to the buried timbers did not detect concentrations of cPAHs above the MTCA Method A cleanup level for soil (Figure 4; Table 5). However, concentrations of cPAHs exceeded the MTCA Method A cleanup for soil in soil sample FE-3, which was collected from the center of the center of the trench excavation. Due to Site redevelopment activities, additional samples could not be collected from the area surrounding FE-3. The exceedance at FE-3 can be attributed to buried timbers that likely had been treated with creosote.

3.5 SITE REDEVELOPMENT

The Site redevelopment was completed in the fall of 2008. During the redevelopment, the majority of ground surfaces were covered with asphalt, concrete, or landscaping. The new boathouse and office building were constructed at the northeast corner of the Site in the area of the former USTs. Groundwater monitoring well installation and monitoring were conducted after the completion of Site redevelopment and are discussed in the following sections.

4.0 GROUNDWATER MONITORING

Following the completion of the UST decommissioning and soil excavation, compliance groundwater monitoring was conducted at the Site. Groundwater monitoring included the installation of monitoring wells MW-8, MW-9, and MW-10; and conducting four consecutive quarters of groundwater monitoring.

4.1 MONITORING WELL INSTALLATION

Monitoring wells MW-8 through MW-10 were installed by Cascade Drilling, Inc. of Woodinville, Washington on November 26, 2008 using hollow-stem augur drilling methods (Figure 6).

- Monitoring well MW-8 is located within the fuel dispenser removal excavation area, in the vicinity of residual concentrations of GRO, DRO, and BTEX in soil that exceeds the MTCA Method A cleanup levels for soil and down-gradient of the UST removal area, dependent on groundwater flow direction.
- Monitoring well MW-9 is located down-gradient of the UST removal area, dependent on groundwater flow direction.
- Monitoring well MW-10 is located in the vicinity of the former UST excavation area. However, the former UST excavation area is located within the footprint of the newly constructed boathouse and office building. Therefore, monitoring well MW-10 is located down-gradient of the former UST excavation area, dependent on groundwater flow direction, as close to the former UST excavation area as possible.

Soil samples were collected from the monitoring well borings in 5-foot intervals from the ground surface to the total depth of the boring. Soil samples collected from each sample interval were described in accordance with the Unified Soil Classification System. Soil was noted during drilling activities for visual or olfactory signs of contamination. A photoionization detector (PID) was used to measure volatile organic vapors in each soil sample. Soil descriptions and field observations are documented on the boring logs provided in Appendix D.

Monitoring wells MW-8 through MW-10 were constructed in accordance with the Minimum Standards for Construction and Maintenance of Wells, as established in WAC 173-160, using 2-inch polyvinyl chloride blank casing with 10 feet of 0.010-inch, machine-slotted screen. The well screens were installed to intersect the top of the water-bearing zone, measured at the time of drilling, at approximately 5 bgs (Appendix D); therefore, screen intervals were installed from 5 to 15 feet bgs. The monitoring wells were completed with traffic-rated, flush-mounted monuments with locking caps.

A survey of the northern side of the top of the monitoring well casing relative to an arbitrary datum established at the Site was completed with an accuracy of 0.01 foot to facilitate estimation of the direction of groundwater gradient and flow. Survey activities were conducted by Pace Engineers, Inc. of Kirkland, Washington on December 8, 2008.

All non-dedicated field equipment was cleaned and decontaminated between uses and prior to leaving the Site. The soil cuttings from the hollow-stem auger drilling of the three wells were disposed of off-Site by Kleen Environmental Technologies, Inc. of Seattle, Washington upon completion of drilling. The well development water was placed into a labeled 55-gallon steel drum and left at the Site for disposal following groundwater monitoring.

4.2 MONITORING WELL SAMPLING

Groundwater monitoring activities were conducted at monitoring wells MW-8 through MW-10 at the Site on December 5, 2008; and March 17, June 17, and October 5, 2009 by Farallon personnel. Groundwater samples were collected and handled in accordance with *Guidance for Low-Flow Ground Water Sampling Procedures* (EPA 1998). The monitoring wells were developed after installation and were allowed to equilibrate for a minimum of 48 hours prior to collection of groundwater samples. During sampling procedures, the locking well cap was removed from each monitoring well and the groundwater level was allowed to equilibrate to atmospheric pressure for at least 15 minutes. The depth-to-groundwater at each monitoring well was measured from the northern side on the top of each well casing to the nearest 0.01 foot using an electronic water-level measuring device. The groundwater level measurements for all monitoring wells were taken within a 2-hour period. The depth to the monitoring well bottom was measured to evaluate siltation of the monitoring wells. All reusable equipment was decontaminated prior to and between uses.

During quarterly monitoring events, monitoring wells MW-8 through MW-10 were purged using a peristaltic pump and dedicated polyethylene tubing. Before the monitoring wells were purged, the dedicated polyethylene tubing intake was placed at the approximate center of the screened interval in each monitoring well. Groundwater was then purged from each well at flow rates ranging from approximately 100 to 300 milliliters per minute. Prior to sampling, field measurements for pH, temperature, specific conductivity, dissolved oxygen, and oxidation-reduction potential were collected during purging of groundwater at each monitoring well using a YSI Model 600XL water-quality analyzer equipped with a flow-through cell. Groundwater samples were collected after pH, temperature, and specific conductivity parameters had stabilized. Stabilization is determined for temperature and specific conductivity as a relative percent difference of less than 3 percent and for pH as a change of $\pm$ 0.1 pH unit between readings for three consecutive measurements.

Following stabilization of pH, temperature, and conductivity, groundwater samples were collected directly from the pump outlet. Groundwater samples were placed directly into laboratory-supplied sample containers, with care taken to minimize turbulence and to prevent handling the seal and/or lid of the container when the sample was placed into the containers. The containers were completely filled to eliminate headspace, and the seal and/or lid was secured. The groundwater sample was placed on ice in a cooler and transported to OnSite Environmental Inc. of Redmond, Washington under standard chain-of-custody protocols. Groundwater samples were collected for analysis of the COCs defined for the Site, including the following:

- DRO and ORO by Northwest Method NWTPH-Dx; and
- GRO and BTEX by Northwest Method NWTPH-Gx.

The laboratory analytical results for the quarterly groundwater monitoring are discussed below.

4.3 GROUNDWATER MONITORING RESULTS

Groundwater elevation measurements collected during groundwater monitoring are presented in Table 6 and the direction of groundwater flow at each sampling event is shown on Figures 6 through 9. Groundwater analytical results are presented in Table 7. Monitoring well construction logs are provided in Appendix D and laboratory analytical reports are provided in Appendix E.

Groundwater levels measured on December 5, 2008 ranged from 3.26 to 3.89 feet below the top of the monitoring well casings and indicated a groundwater flow to the southwest. The laboratory analytical results did not detect concentrations of GRO, DRO, or BTEX in groundwater exceeding the MTCA Method A cleanup level or laboratory PQL in monitoring wells installed at the Site.

Groundwater levels measured on March 17, 2009 ranged from 3.14 to 3.36 feet below the top of the monitoring well casings and indicated a groundwater flow to the northwest. The laboratory analytical results did not detect concentrations of GRO, DRO, or BTEX in groundwater exceeding the MTCA Method A cleanup level or laboratory PQL in monitoring wells installed at the Site.

Groundwater levels measured on June 17, 2009 ranged from 2.51 to 2.58 feet below the top of the monitoring well casings and indicated a groundwater flow to the north. The laboratory analytical results did not detect concentrations of GRO, DRO, or BTEX in groundwater exceeding the MTCA Method A cleanup level. Toluene was detected in monitoring well MW-8 at 1.1 µg/l, which is above the laboratory PQL of 1.0 µg/l and below the MTCA Method A groundwater cleanup level of 700 µg/l.

Groundwater levels measured on October 5, 2009 ranged from 3.17 to 3.70 feet below the top of the monitoring well casings and indicated a groundwater flow to the west-southwest. The laboratory analytical results did not detect concentrations of GRO, DRO, or BTEX constituents in groundwater exceeding the MTCA Method A cleanup level or laboratory PQL in monitoring wells installed at the Site.

5.0 CONCLUSIONS

The cleanup action was conducted at the Site to clean up soil and groundwater with concentrations of DRO, GRO, and BTEX that were above the MTCA Method A cleanup levels. The cleanup action included removal of an 8,000-gallon gasoline UST and a 1,750-gallon diesel UST; excavation of approximately 200 tons of soil with concentrations of TPH above the MTCA Method A cleanup levels in the vicinity of the former fuel dispenser; installation of groundwater monitoring wells at the Site; and completion of four consecutive quarters of groundwater monitoring. The removal of USTs and excavation of soil in the vicinity of the fuel dispensers at the Site resulted in removal of soils containing concentrations of TPH above the MTCA Method A cleanup levels to the maximum extent practical. However, structural tiebacks, horizontal timbers, cables, and pilings associated with the bulkhead adjacent to the fuel dispenser excavation area extended into the excavation area and limited soil removal to a depth of 6 feet bgs in the northern portion of the excavation. To prevent undermining the bulkhead, soil with residual concentrations of DRO, GRO, and BTEX constituents above the MTCA Method A soil cleanup levels for soil was left in place at a depth of 5 feet near the northern wall of the bulkhead and at a depth of 6 feet at the northwestern corner of the former fuel dispenser excavation area.

Soil samples were collected at the Site based on observations of suspected contamination during Site redevelopment. Concentrations of DRO, GRO, and BTEX were not detected above the MTCA Method A cleanup levels in the soil samples collected from the areas where suspected contamination was observed. Soil samples collected from the excavated utility trench proximate to buried treated timbers were analyzed for carcinogenic cPAHs. The analytical result of one soil sample soil sample collected from the center of the center of the trench excavation exceeded the MTCA Method A cleanup level for cPAHs in soil. Due to Site redevelopment activities, additional samples could not be collected from the area surrounding FE-3. The exceedance at FE-3 can be attributed to the buried timbers that were likely treated with creosote.

Groundwater monitoring was conducted during four consecutive quarters at the three points of compliance monitoring wells that were installed after removal of USTs and the fuel dispenser excavation and after the completion of Site redevelopment. The analytical results for the groundwater samples collected from the four consecutive monitoring events confirm that concentrations of DRO, GRO, and BTEX are below the applicable MTCA Method A groundwater cleanup levels at the points of compliance for groundwater at the Site.

Based on the results of the UST removal, excavation of soils in the vicinity of the fuel dispensers, and four consecutive quarters of groundwater monitoring, the concentration of COCs are below the cleanup levels at the points of compliance and meet the cleanup standards for the Site. However, discrete and limited areas of soil with residual concentrations of TPH above eth cleanup levels remain beneath the bulkhead and proximate to the former location of the fuel pump. The MTCA requirements for a No Further Action determination from Ecology have been met by demonstrating that the cleanup action protects human health and the environment and complies with the threshold requirements of Section 360 of WAC 173-340, with the exception of the limited area near the bulkhead.

6.0 REFERENCES

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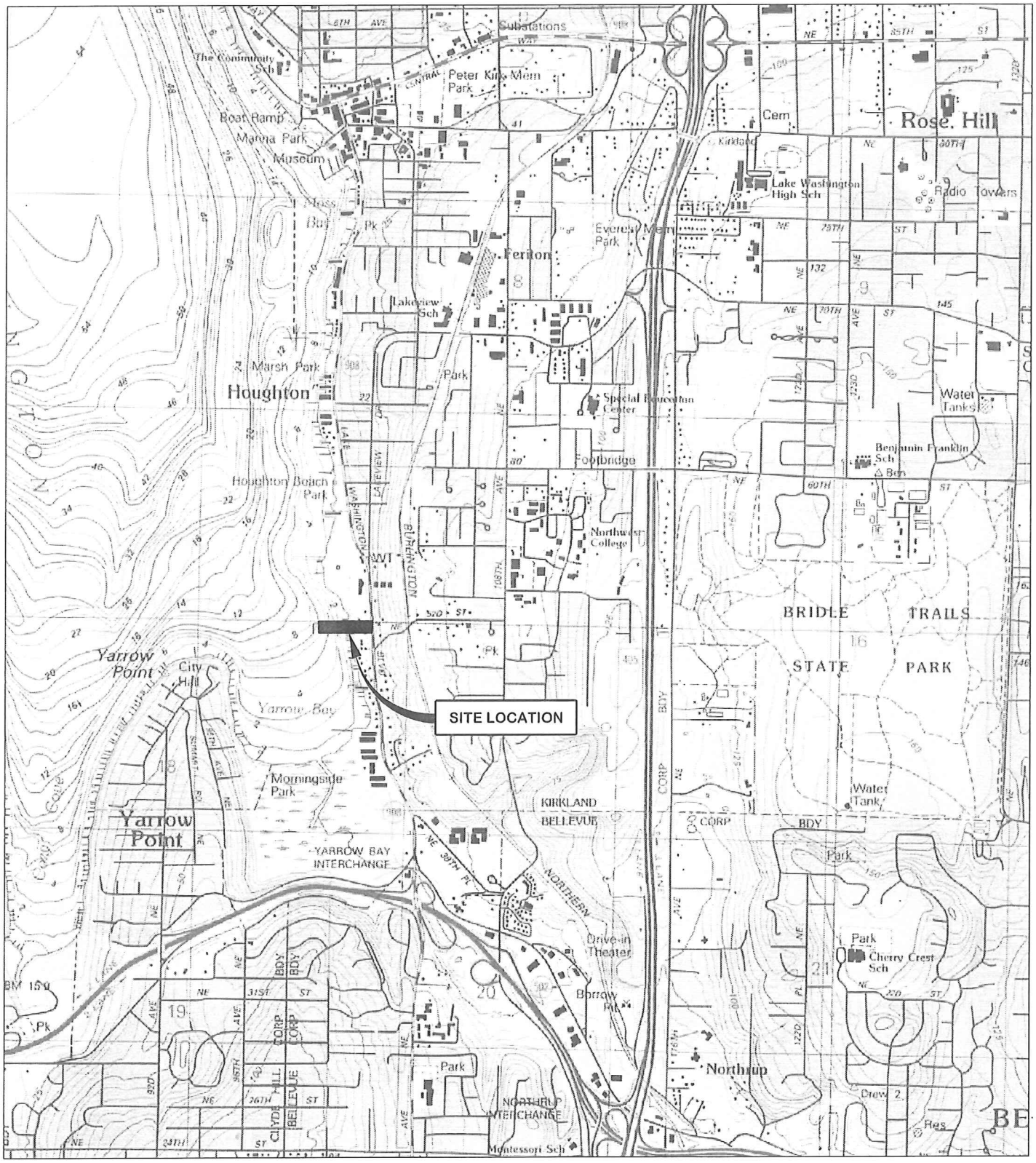
FIGURES

CLOSURE REPORT
Yarrow Bay Marina
Kirkland, Washington

Farallon PN: 112-001



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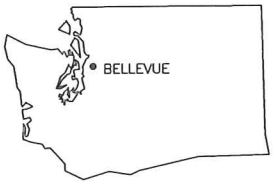
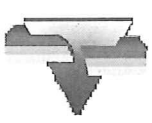


WASHINGTON



FARALLON CONSULTING
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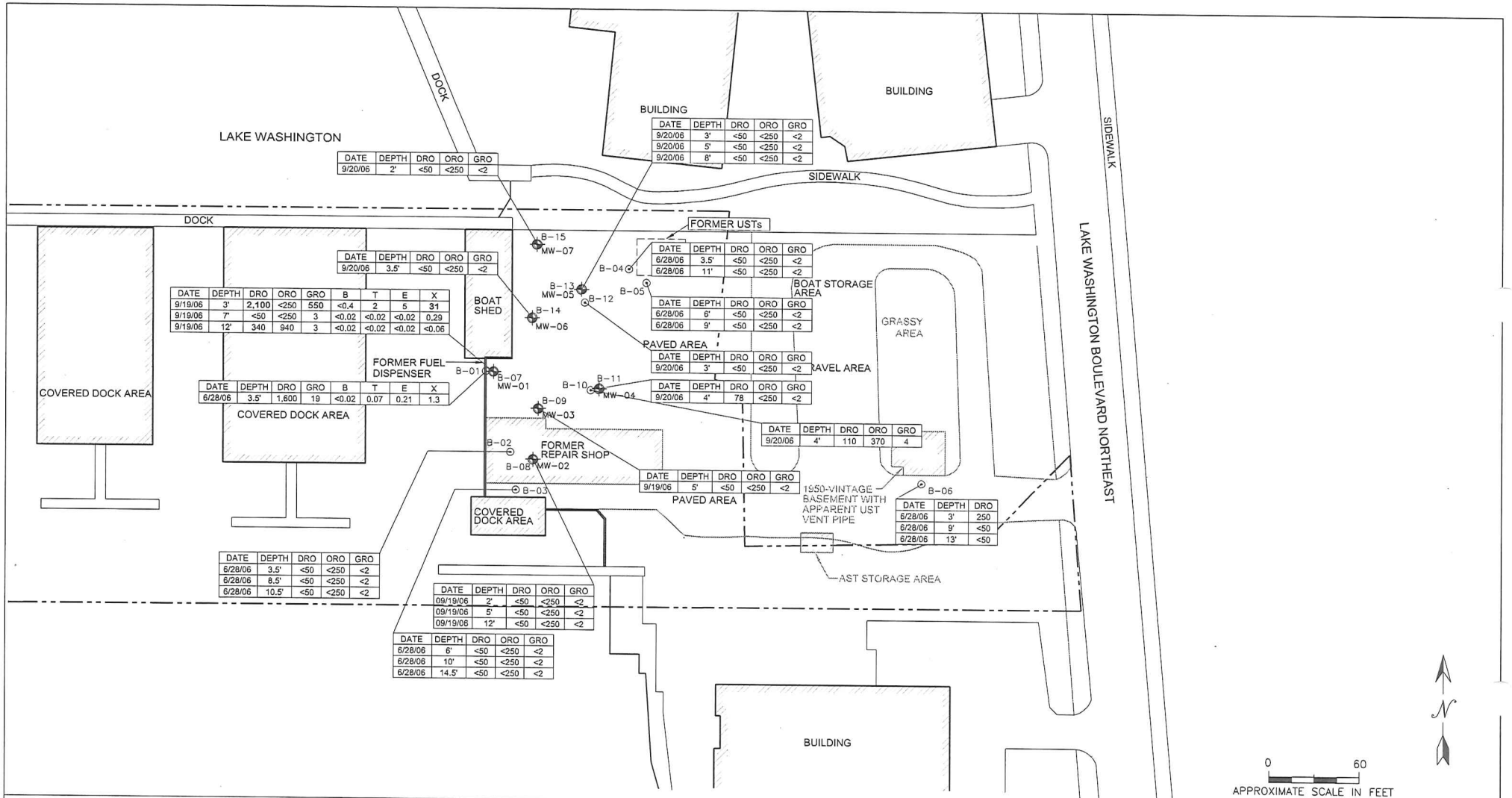
FIGURE 1

SITE VICINITY MAP
YARROW BAY MARINA WESTERN PARCEL
5207 LAKE WASHINGTON BOULEVARD NE
KIRKLAND, WASHINGTON

FARALLON PN: 112-001

Drawn By: DEW	Checked By: DC	Date: 1/06/10	Disk Reference: 112001



DATE	DEPTH	DRO	ORO	GRO
9/20/06	2'	<50	<250	<2

DATE	DEPTH	DRO	ORO	GRO
9/20/06	3'	<50	<250	<2
9/20/06	5'	<50	<250	<2
9/20/06	8'	<50	<250	<2

DATE	DEPTH	DRO	ORO	GRO
9/20/06	3.5'	<50	<250	<2

DATE	DEPTH	DRO	ORO	GRO	B	T	E	X
9/19/06	3'	**2,100**	<250	**550**	<0.4	2	5	**31**
9/19/06	7'	<50	<250	3	<0.02	<0.02	<0.02	0.29
9/19/06	12'	340	940	3	<0.02	<0.02	<0.02	<0.06

DATE	DEPTH	DRO	GRO	B	T	E	X
6/28/06	3.5'	1,600	19	<0.02	0.07	0.21	1.3

DATE	DEPTH	DRO	ORO	GRO
6/28/06	3.5'	<50	<250	<2
6/28/06	8.5'	<50	<250	<2
6/28/06	10.5'	<50	<250	<2

DATE	DEPTH	DRO	ORO	GRO
09/19/06	2'	<50	<250	<2
09/19/06	5'	<50	<250	<2
09/19/06	12'	<50	<250	<2

DATE	DEPTH	DRO	ORO	GRO
6/28/06	6'	<50	<250	<2
6/28/06	10'	<50	<250	<2
6/28/06	14.5'	<50	<250	<2

DATE	DEPTH	DRO	ORO	GRO
6/28/06	3.5'	<50	<250	<2
6/28/06	11'	<50	<250	<2

DATE	DEPTH	DRO	ORO	GRO
6/28/06	6'	<50	<250	<2
6/28/06	9'	<50	<250	<2

DATE	DEPTH	DRO	ORO	GRO
9/20/06	3'	<50	<250	<2

DATE	DEPTH	DRO	ORO	GRO
9/20/06	4'	78	<250	<2

DATE	DEPTH	DRO	ORO	GRO
9/20/06	4'	110	370	4

DATE	DEPTH	DRO	ORO	GRO
9/19/06	5'	<50	<250	<2

DATE	DEPTH	DRO
6/28/06	3'	250
6/28/06	9'	<50
6/28/06	13'	<50

LEGEND

- SITE BOUNDARY
- MW-07 MONITORING WELL
- B-15 SOIL BORING
- UST UNDERGROUND STORAGE TANK

SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM
DEPTH IN FEET BELOW GROUND SURFACE
GRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS GASOLINE-RANGE ORGANICS
DRO = TPH AS DIESEL-RANGE ORGANICS
ORO = TPH AS OIL-RANGE ORGANICS
B = BENZENE
T = TOLUENE
E = ETHYLBENZENE
X = TOTAL XYLENES

BOLD = INDICATES CONCENTRATIONS EXCEED WASHINGTON STATE DEPARTMENT OF ECOLOGY MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVELS

< = INDICATES CONCENTRATIONS NOT DETECTED ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

BASEMAP DERIVED FROM: SOUND ENVIRONMENTAL STRATEGIES (7/2006)

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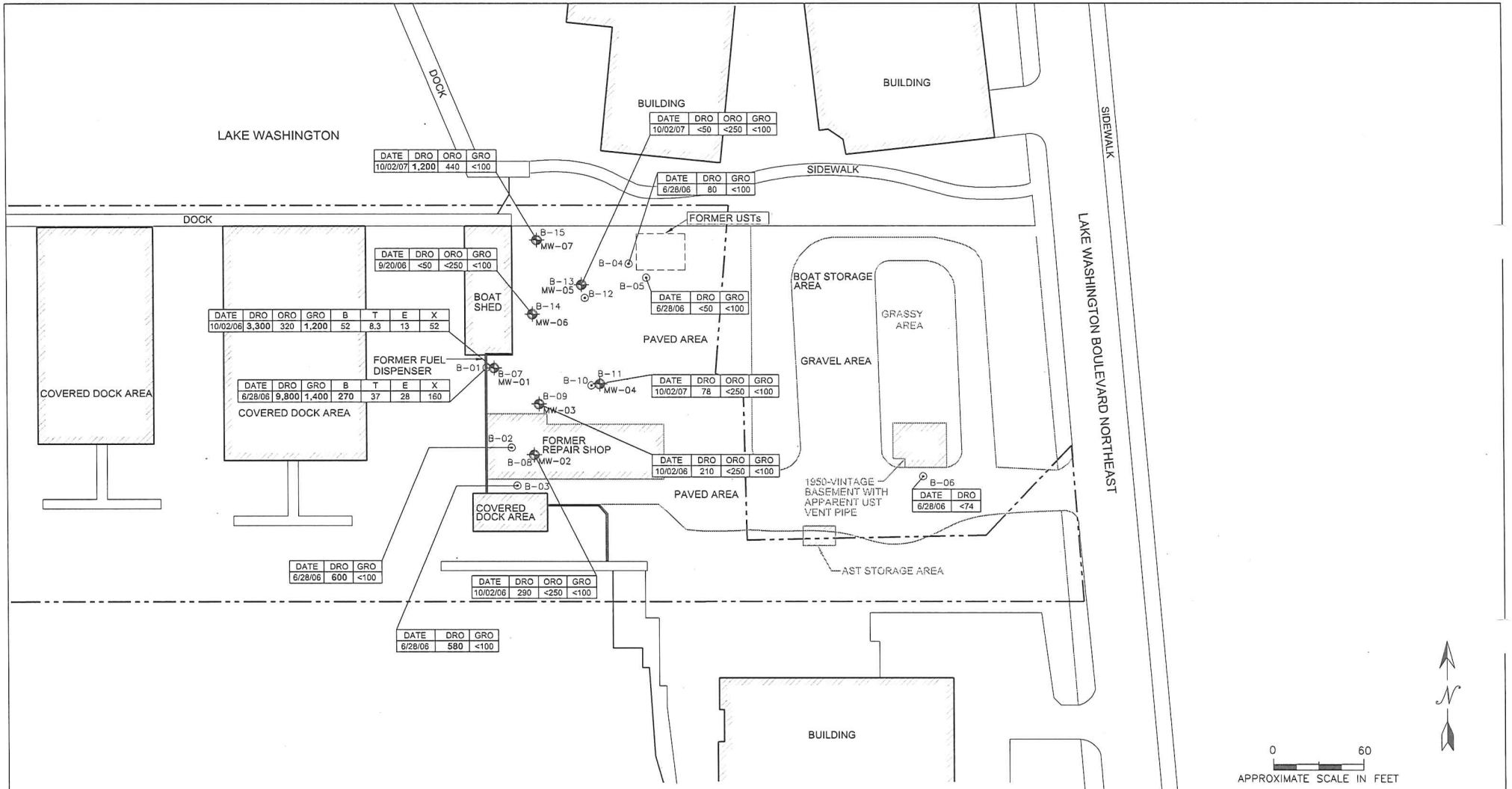
Issaquah, WA 98027

FIGURE 2

PRE-DEVELOPMENT SITE PLAN SHOWING
PRE-CLEANUP SOIL ANALYTICAL RESULTS
YARROW BAY MARINA WESTERN
5207 LAKE WASHINGTON BOULEVARD NE
KIRKLAND, WASHINGTON

FARALLON PN: 112-001

Drawn By:DEW	Checked By:DC	Date:1/06/10	Disk Reference:112001b



LEGEND

- SITE BOUNDARY
- MW-07 MONITORING WELL
- B-15 SOIL BORING
- UST UNDERGROUND STORAGE TANK

GROUNDWATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER

GRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS GASOLINE-RANGE ORGANICS

DRO = TPH AS DIESEL-RANGE ORGANICS

ORO = TPH AS OIL-RANGE ORGANICS

B = BENZENE
T = TOLUENE
E = ETHYLBENZENE
X = TOTAL XYLENES

BOLD = INDICATES CONCENTRATIONS EXCEED WASHINGTON STATE DEPARTMENT OF ECOLOGY MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVELS

< = INDICATES CONCENTRATIONS NOT DETECTED ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

BASEMAP DERIVED FROM: SOUND ENVIRONMENTAL STRATEGIES (7/2006)

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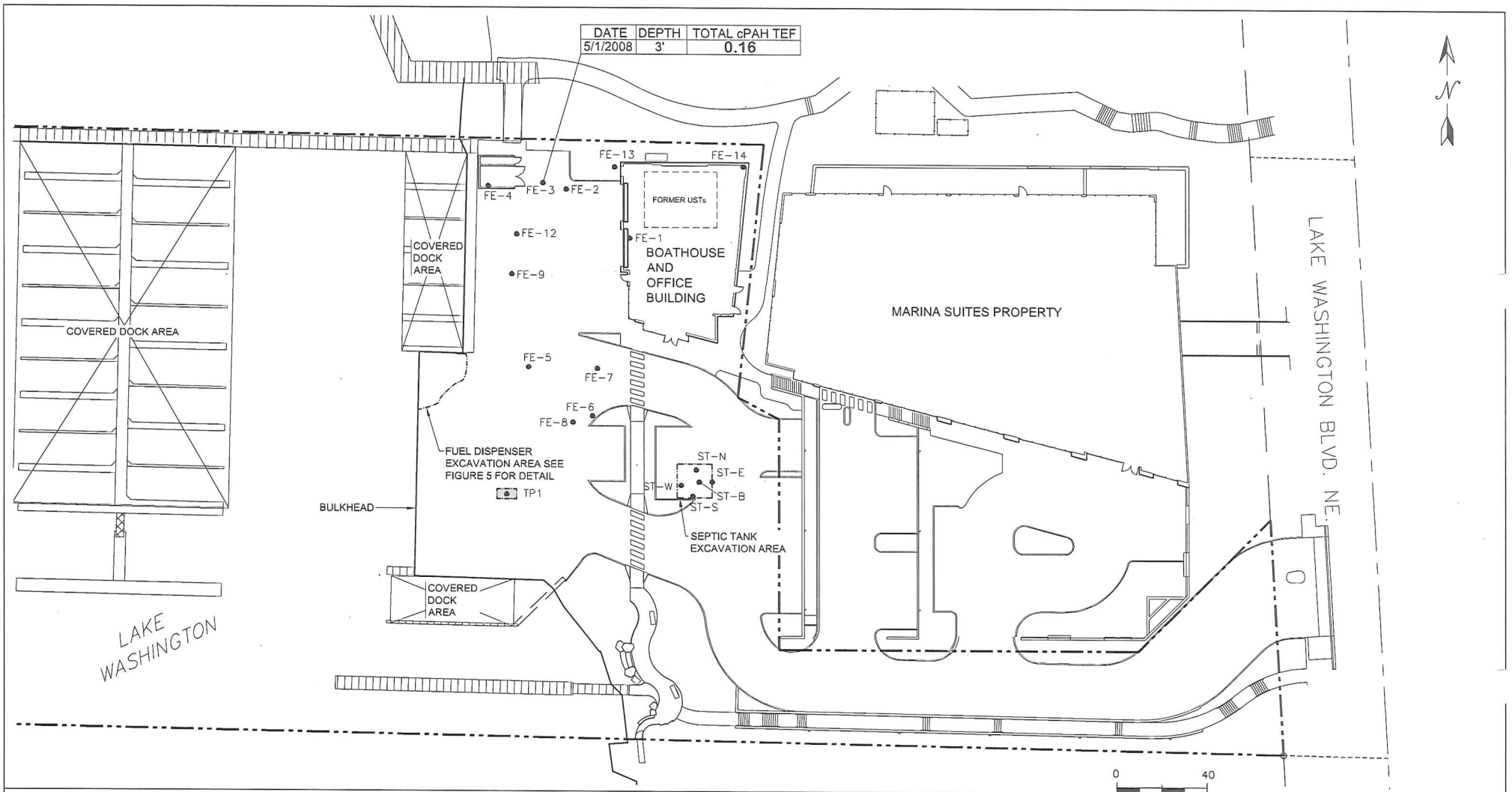
FIGURE 3

PRE-DEVELOPMENT SITE PLAN SHOWING
PRE-CLEANUP GROUNDWATER ANALYTICAL RESULTS
YARROW BAY MARINA WESTERN
5207 LAKE WASHINGTON BOULEVARD NE
KIRKLAND, WASHINGTON

FARALLON PN: 112-001

Drawn By:DEW	Checked By:DC	Date:1/06/10	Disk Reference:112001b



LEGEND

- SITE BOUNDARY
- FE-7 SOIL SAMPLE LOCATION
- TP1 ENVIRONMENTAL TEST PIT LOCATION
- UST UNDERGROUND STORAGE TANK

SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM

- DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS
- ORO = TPH AS OIL-RANGE ORGANICS
- GRO = TPH AS GASOLINE-RANGE ORGANICS
- cPAH = CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS
- **BOLD** = INDICATES CONCENTRATIONS EXCEED WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVELS

NOTES:

1. SOIL SAMPLES NOT SHOWING ANALYTICAL RESULTS DO NOT EXCEED WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVELS FOR GRO, DRO, AND ORO WITH THE EXCEPTION OF SOIL SAMPLE LOCATIONS FE-2 AND FE-4.
2. SOIL SAMPLE FE-2 THROUGH FE-4 WERE ANALYZED FOR cPAHs ONLY. THE TEQ CONCENTRATION FOR SOIL SAMPLES FE-2 AND FE-4 WAS BELOW THE MTCA METHOD A CLEANUP LEVEL. SOIL SAMPLE FE-3 EXCEEDED THE MTCA METHOD A CLEANUP LEVEL AS SHOWN ON THE FIGURE.
3. ALL LOCATIONS ARE APPROXIMATE

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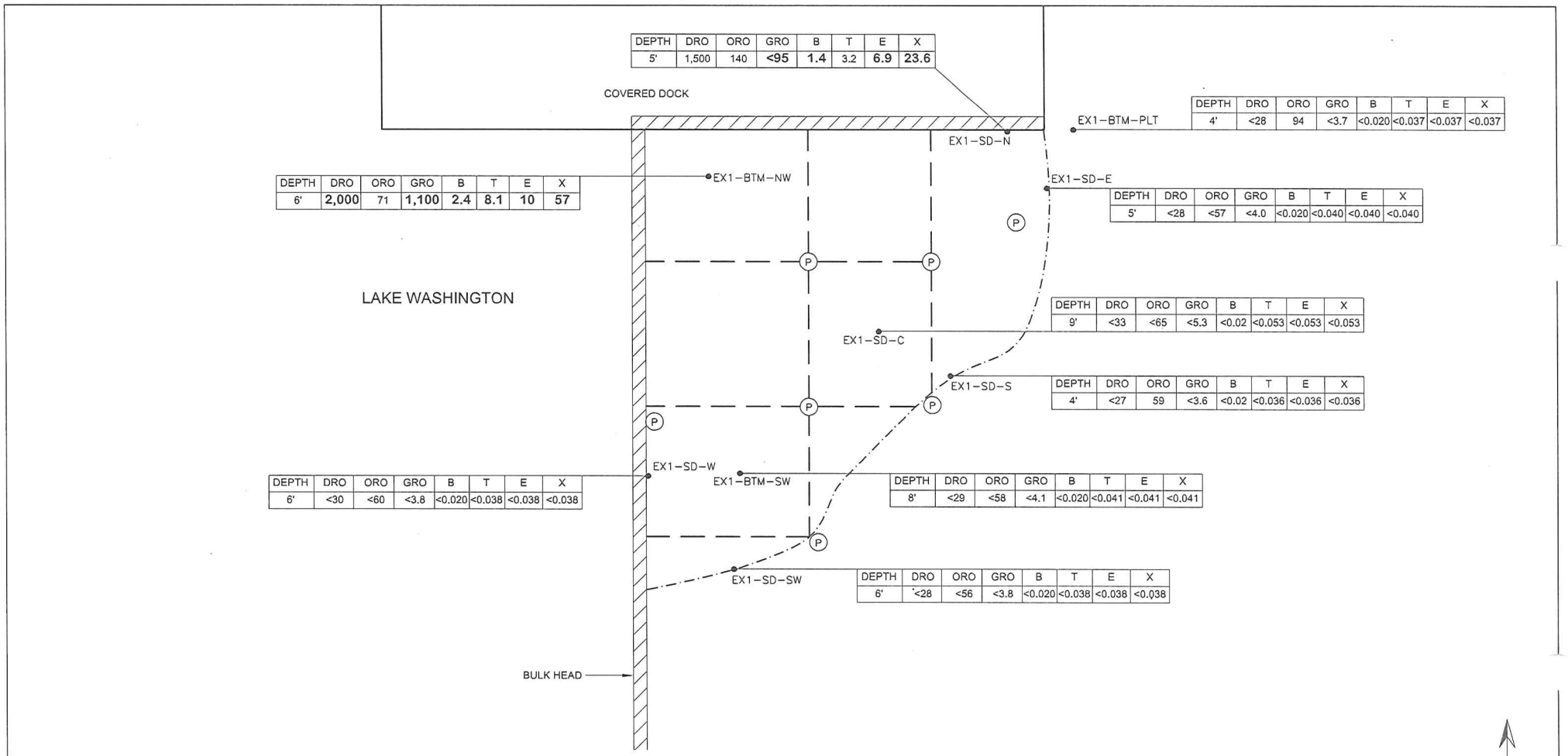
FIGURE 4

SITE PLAN SHOWING SOIL SAMPLE LOCATIONS
YARROW BAY MARINA WESTERN
5207 LAKE WASHINGTON BOULEVARD NE
KIRKLAND, WASHINGTON

FARALLON PN: 112-001

Drawn By:DEW	Checked By:DC	Date:1/06/10	Disk Reference:112001b



DEPTH	DRO	ORO	GRO	B	T	E	X
5'	1,500	140	**<95**	**1.4**	3.2	**6.9**	**23.6**

DEPTH	DRO	ORO	GRO	B	T	E	X
4'	<28	94	<3.7	<0.020	<0.037	<0.037	<0.037

DEPTH	DRO	ORO	GRO	B	T	E	X
6'	**2,000**	71	**1,100**	**2.4**	**8.1**	**10**	**57**

DEPTH	DRO	ORO	GRO	B	T	E	X
5'	<28	<57	<4.0	<0.020	<0.040	<0.040	<0.040

DEPTH	DRO	ORO	GRO	B	T	E	X
9'	<33	<65	<5.3	<0.02	<0.053	<0.053	<0.053

DEPTH	DRO	ORO	GRO	B	T	E	X
4'	<27	59	<3.6	<0.02	<0.036	<0.036	<0.036

DEPTH	DRO	ORO	GRO	B	T	E	X
6'	<30	<60	<3.8	<0.020	<0.038	<0.038	<0.038

DEPTH	DRO	ORO	GRO	B	T	E	X
8'	<29	<58	<4.1	<0.020	<0.041	<0.041	<0.041

DEPTH	DRO	ORO	GRO	B	T	E	X
6'	<28	<56	<3.8	<0.020	<0.038	<0.038	<0.038

LEGEND

EX1-BTM-NW ● SOIL SAMPLE LOCATION

LIMITS OF EXCAVATION

HORIZONTAL TIE BACK CABLES

(P) PILINGS

UST UNDERGROUND STORAGE TANK

SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM
DEPTH IN FEET BELOW GROUND SURFACE
GRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS GASOLINE-RANGE ORGANICS
DRO = TPH AS DIESEL-RANGE ORGANICS
ORO = TPH AS OIL-RANGE ORGANICS
B = BENZENE
T = TOLUENE
E = ETHYLBENZENE
X = TOTAL XYLENES

BOLD = INDICATES CONCENTRATIONS EXCEED WASHINGTON STATE DEPARTMENT OF ECOLOGY MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVELS

< = INDICATES CONCENTRATIONS NOT DETECTED ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

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FIGURE 5

FORMER FUEL DISPENSER EXCAVATION AREA
SOIL SAMPLE ANALYTICAL RESULTS
YARROW BAY MARINA WESTERN PARCEL
5207 LAKE WASHINGTON BOULEVARD NE
KIRKLAND, WASHINGTON

FARALLON PN: 112-001

Drawn By:DEW	Checked By:DC	Date:1/06/10	Disk Reference:112001b

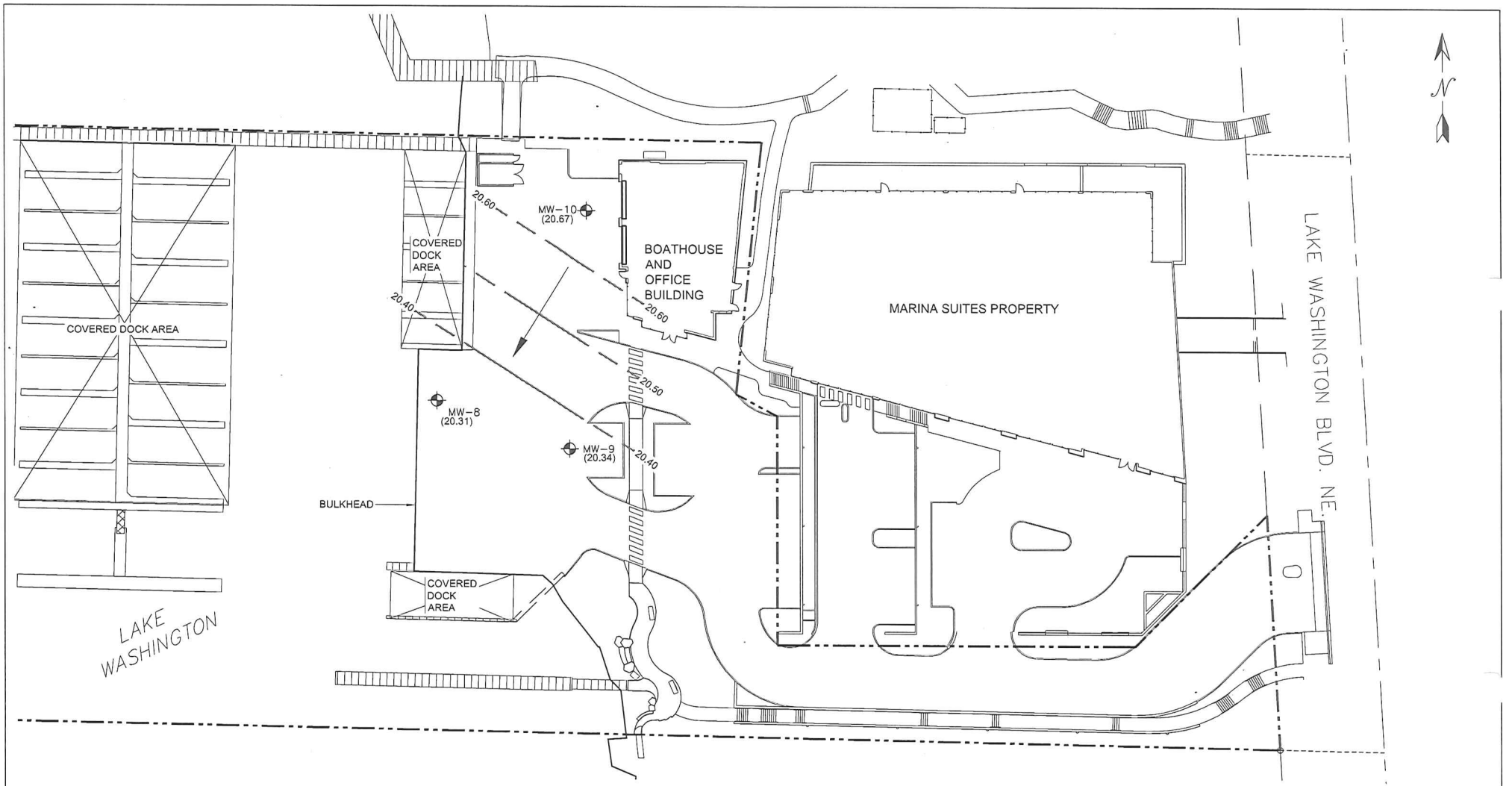

FIGURE 6

GROUNDWATER ELEVATION CONTOUR MAP
DECEMBER 5, 2008
YARROW BAY MARINA WESTERN
5207 LAKE WASHINGTON BOULEVARD NE
KIRKLAND, WASHINGTON

FARALLON PN: 112-001

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Drawn By:DEW	Checked By:DC	Date:1/06/10	Disk Reference:112001b

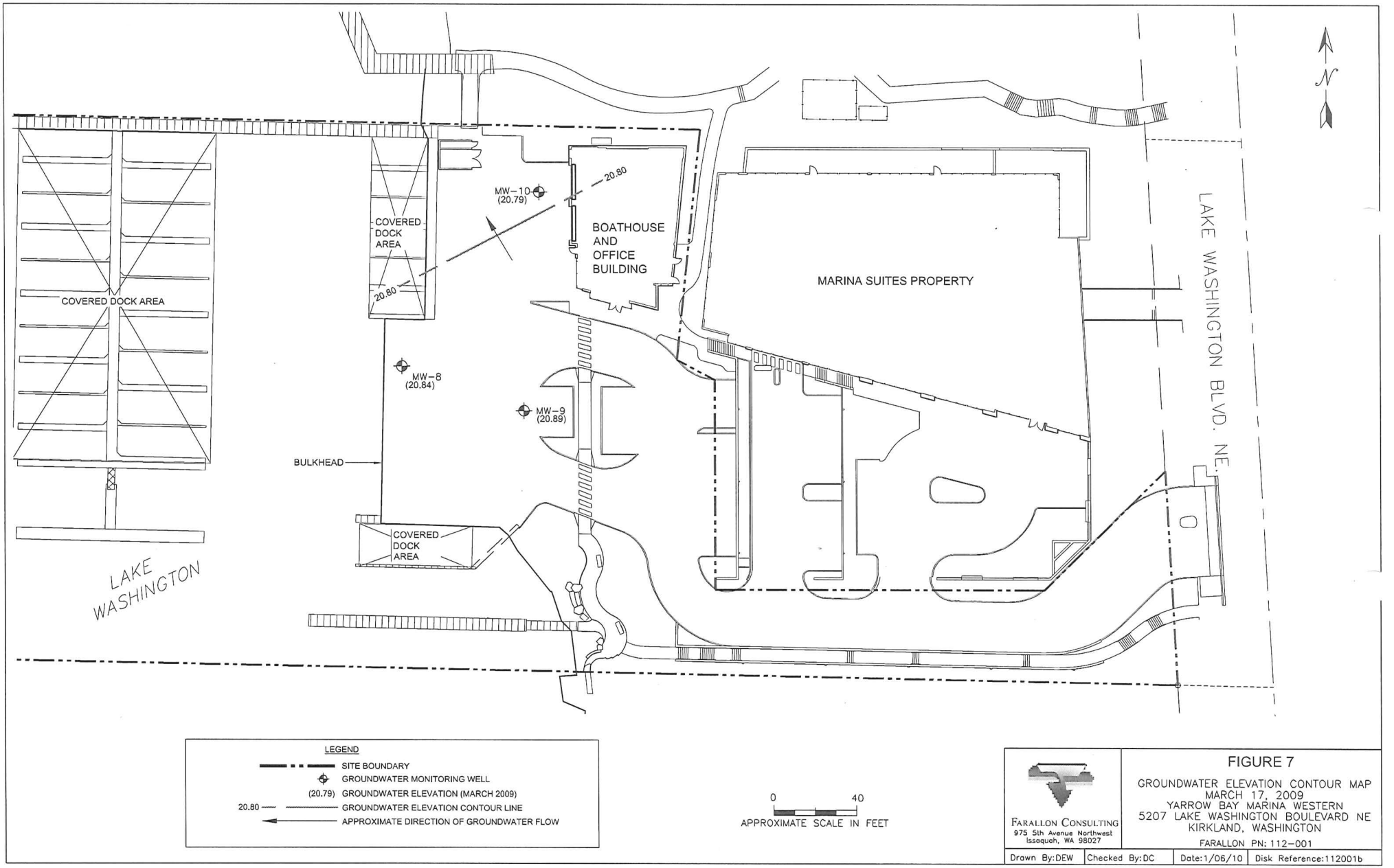

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FIGURE 7

GROUNDWATER ELEVATION CONTOUR MAP
MARCH 17, 2009
YARROW BAY MARINA WESTERN
5207 LAKE WASHINGTON BOULEVARD NE
KIRKLAND, WASHINGTON

FARALLON PN: 112-001

Drawn By: DEW	Checked By: DC	Date: 1/06/10	Disk Reference: 112001b

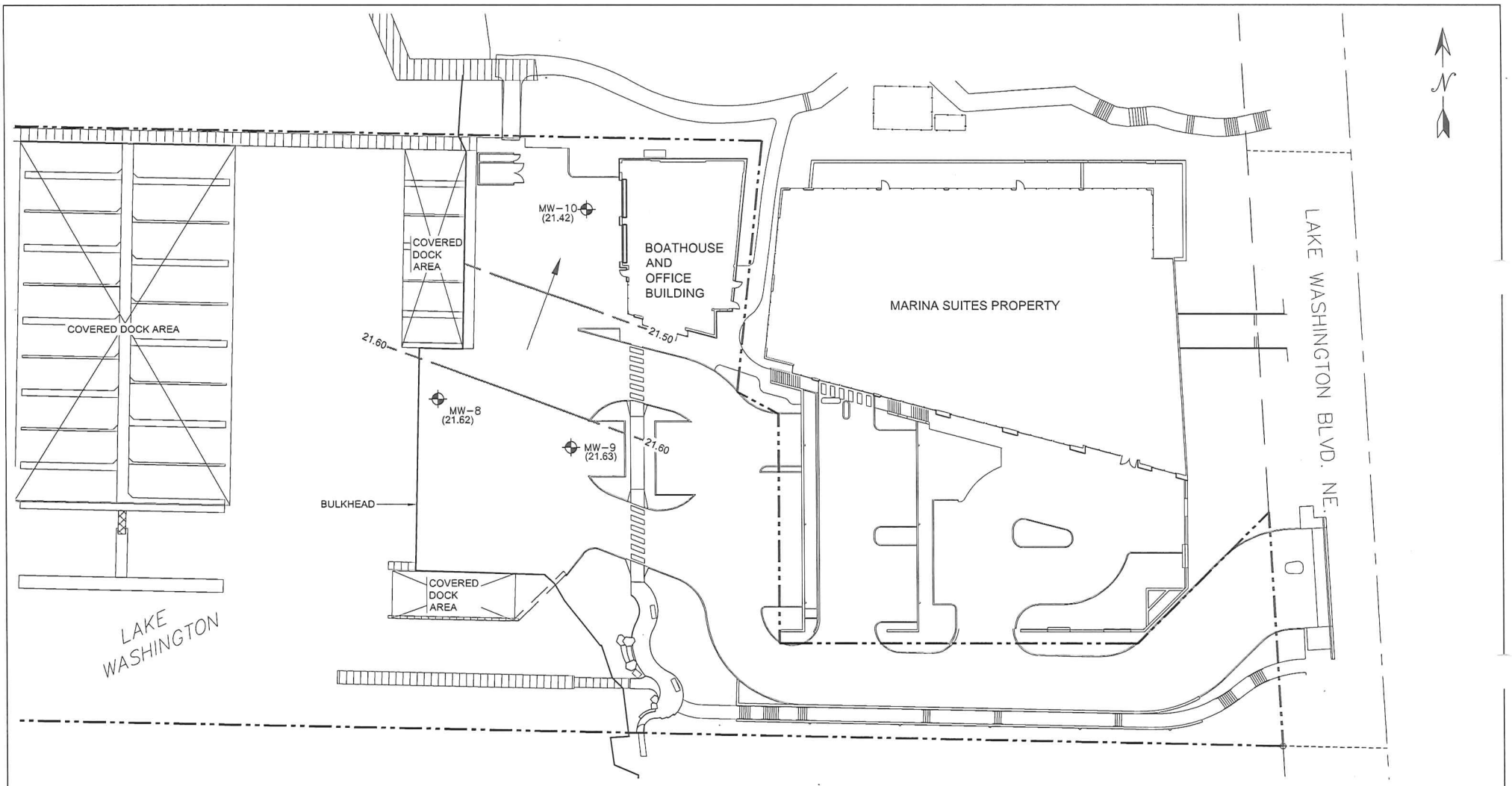

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FIGURE 8

GROUNDWATER ELEVATION CONTOUR MAP
JUNE 17, 2009
YARROW BAY MARINA WESTERN
5207 LAKE WASHINGTON BOULEVARD NE
KIRKLAND, WASHINGTON

FARALLON PN: 112-001

Drawn By: DEW	Checked By: DC	Date: 1/06/10	Disk Reference: 112001b

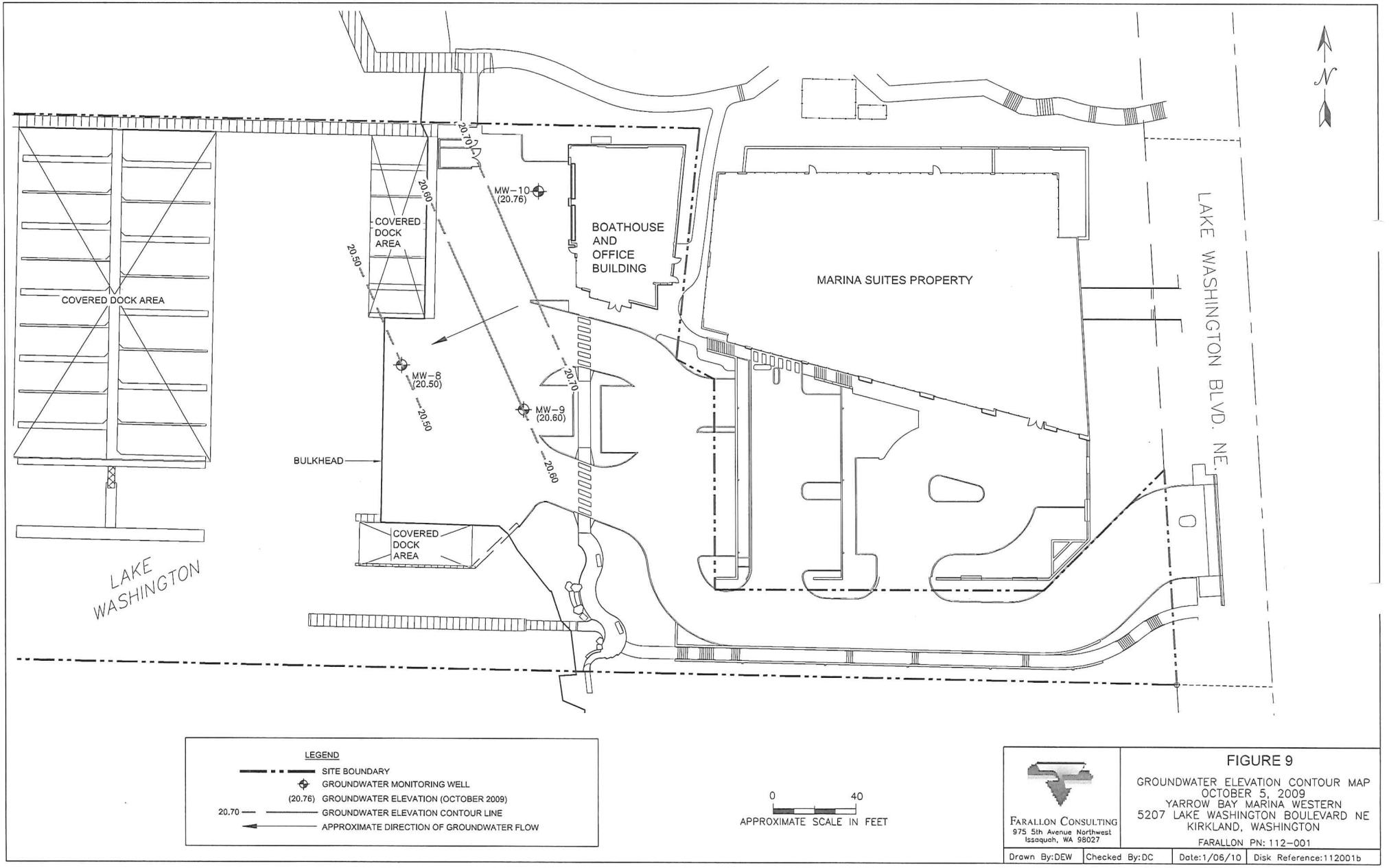

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FIGURE 9

GROUNDWATER ELEVATION CONTOUR MAP
OCTOBER 5, 2009
YARROW BAY MARINA WESTERN
5207 LAKE WASHINGTON BOULEVARD NE
KIRKLAND, WASHINGTON

FARALLON PN: 112-001

Drawn By: DEW	Checked By: DC	Date: 1/06/10	Disk Reference: 112001b

TABLES

CLOSURE REPORT
Yarrow Bay Marina
Kirkland, Washington

Farallon PN: 112-001

Table 1
Summary of Historical Soil Analytical Results
Yarrow Bay Marina - Western Parcel
5207 Lake Washington Boulevard Northeast, Kirkland, Washington
Farallon PN: 112-001

Sample Identification	Sample Date	Sample Depth (feet)	Analytical Results (milligrams per kilogram)[1]						
			DRO[2]	ORO[2]	GRO[3]	Benzene[4]	Toluene[4]	Ethyl-benzene[4]	Total Xylenes[4,5]
B-01-03.5	6/28/2006	3.5	1,600	--	19	<0.02	0.07	0.21	1.3
B-02-0.3.5	6/28/2006	3.5	<50	--	<2	<0.03	<0.05	<0.05	<0.15
B-02-08.5	6/28/2006	8.5	<50	--	<2	<0.03	<0.05	<0.05	<0.15
B-02-10.5	6/28/2006	10.5	<50	--	<2	<0.03	<0.05	<0.05	<0.15
B-03-06	6/28/2006	6	<50	--	<2	<0.03	<0.05	<0.05	<0.15
B-03-10	6/28/2006	10	<50	--	<2	<0.03	<0.05	<0.05	<0.15
B-03-14.5	6/28/2006	14.5	<50	--	<2	<0.03	<0.05	<0.05	<0.15
B-04-03.5	6/28/2006	3.5	<50	--	<2	<0.02	<0.02	<0.02	<0.06
B-04-11	6/28/2006	11	<50	--	<2	<0.02	<0.02	<0.02	<0.06
B-05-06	6/28/2006	6	<50	--	<2	<0.02	<0.02	<0.02	<0.06
B-05-09	6/28/2006	9	<50	--	<2	<0.02	<0.02	<0.02	<0.06
B-06-03	6/28/2006	3	250	--	--	--	--	--	--
B-06-09	6/28/2006	9	<50	--	--	--	--	--	--
B-06-13	6/28/2006	13	<50	--	--	--	--	--	--
B-07-3.0	9/19/2006	3	**2,100**	<250	**550**	<0.4	2	5	**31**
B-07-7.0	9/19/2006	7	<50	<250	3	<0.02	<0.02	<0.02	0.29
B-07-12	9/19/2006	12	340	940	5	<0.02	<0.02	<0.02	<0.06
B-08-2	9/19/2006	2	<50	<250	<2	<0.02	<0.02	<0.02	<0.06
B-08-5	9/19/2006	5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06
B-08-12	9/19/2006	12	<50	<250	<2	<0.02	<0.02	<0.02	<0.06
B-09-5	9/19/2006	5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06
B-10-4	9/20/2006	4	110	370	4	<0.02	<0.02	<0.02	<0.06
B-11-4	9/20/2006	4	78	<250	<2	<0.02	<0.02	<0.02	<0.06
B-12-3	9/20/2006	3	<50	<250	<2	<0.02	<0.02	<0.02	<0.06
B-13-3	9/20/2006	3	<50	<250	<2	<0.02	<0.02	<0.02	<0.06
B-13-5	9/20/2006	5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06

Table 1
Summary of Historical Soil Analytical Results
Yarrow Bay Marina - Western Parcel
5207 Lake Washington Boulevard Northeast, Kirkland, Washington
Farallon PN: 112-001

Sample Identification	Sample Date	Sample Depth (feet)	Analytical Results (milligrams per kilogram)[1]						
			DRO[2]	ORO[2]	GRO[3]	Benzene[4]	Toluene[4]	Ethyl-benzene[4]	Total Xylenes[4,5]
B-13-8	9/20/2006	8	<50	<250	<2	<0.02	<0.02	<0.02	<0.06
B-14-3.5	9/20/2006	3.5	<50	<250	<2	<0.02	<0.02	<0.02	<0.06
B-15-2	9/20/2006	2	<50	<250	<2	<0.02	<0.02	<0.02	<0.06
MTCA Method A Cleanup Levels for Soil[6]			**2,000**	**2,000**	**30**	**0.03**	**7**	**6**	**9**

NOTES:

Results in **bold** denote concentrations above applicable cleanup levels.

-- = denotes sample not analyzed

< indicates result is less than laboratory practical quantization limit or analyte not detected at or above the reporting limit listed.

[1]Samples analyzed by Friedman & Bruya, Inc. of Seattle, Washington

[2]Analyzed by Northwest Method NWTPH-Dx.

[3]Analyzed by Northwest Method NWTPH-Gx.

[4]Analyzed by U.S. Environmental Protection Agency Method 8260B or 8021B.

[5]Total xylenes = m,p-xylenes + o-xylenes.

[6]Washington State Model Toxics Control Act Cleanup Regulation Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised November 2007.

BTEX = benzene, toluene, ethylbenzene, and xylenes

DRO = TPH as diesel-range organics

GRO = TPH as gasoline-range organics

MTCA = Model Toxics Control Act Cleanup Regulation

ORO = TPH as oil-range organics

TPH = total petroleum hydrocarbons

Table 2
Summary of Historical Groundwater Analytical Results
Yarrow Bay Marina - Western Parcel
5207 Lake Washington Boulevard Northeast, Kirkland, Washington
Farallon PN: 112-001

Sample Identification	Sample Date	Analytical Results (micrograms per liter)[1]						
		DRO[2]	ORO[2]	GRO[3]	Benzene[4]	Toluene[4]	Ethyl-benzene[4]	Total Xylenes[4,5]
B-01	6/28/2006	**9,800**	--	**1,400**	**270**	37	28	160
B-02	6/28/2006	**600**	--	<100	<1	<1	<1	<3
B-03	6/28/2006	**580**	--	<100	<1	<1	<1	<3
B-04	6/28/2006	80	--	<100	<1	<1	<1	<3
B-05	6/28/2006	<50	--	<100	<1	<1	<1	<3
B-06	6/28/2006	<74	--	--	--	--	--	--
MW-01	10/2/2006	**3,300**	320[6]	**1,200**	**52**	8.3	13	52
MW-02	10/2/2006	290	<250	<100	<1	<1	<1	<3
MW-03	10/2/2006	210	<250	<100	<1	<1	<1	<3
MW-04	10/2/2006	78	<250	<100	<1	<1	<1	<3
MW-05	10/2/2006	<50	<250	<100	<1	<1	<1	<3
MW-06	10/2/2006	<50	<250	<100	<1	<1	<1	<3
MW-07	10/2/2006	**1,200**	440	<100	<1	<1	<1	<3
MTCA Method A Cleanup Levels for Groundwater[7]		**500**	**500**	**800**	**5**	**1,000**	**700**	**1,000**

NOTES:

Results in **bold** denote concentrations above applicable cleanup levels.

-- = denotes sample not analyzed

< indicates result is less than laboratory practical quantization limit or analyte not detected at or above the reporting limit listed.

[1]Samples analyzed by Friedman & Bruya, Inc. of Seattle, Washington

[2]Analyzed by Northwest Method NWTPH-Dx.

[3]Analyzed by Northwest Method NWTPH-Gx.

[4]Analyzed by U.S. Environmental Protection Agency Method 8260B or 8021B.

[5]Total xylenes = m,p-xylenes + o-xylenes.

[6]The pattern of peaks present is not indicative of motor oil. The results of motor oil were caused by an overlap from diesel-range material

[7]Washington State Model Toxics Control Act Cleanup Regulation Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised November 2007.

BTEX = benzene, toluene, ethylbenzene, and xylenes

DRO = TPH as diesel-range organics

GRO = TPH as gasoline-range organics

MTCA = Model Toxics Control Act Cleanup Regulation

ORO = TPH as oil-range organics

TPH = total petroleum hydrocarbons

Table 3
Summary of Fuel Dispenser Soil Excavation Analytical Results
Yarrow Bay Marina - Western Parcel
5207 Lake Washington Boulevard Northeast, Kirkland, Washington
Farallon PN: 112-001

Sample Location	Sample Identification	Sample Date	Sample Depth (feet bgs)[1]	Analytical Results (milligrams per kilogram)[2]						
				DRO[3]	ORO[3]	GRO[4]	Benzene[5]	Toluene[5]	Ethyl-benzene[5]	Total Xylenes[5,6]
EX1-BTM-NW	EX1-BTM-NW-6	3/27/2008	6	**2,000**	71	**1,100**	**2.4**	**8.1**	**10**	**57**
EX1-SD-C	EX1-BTM-C-9	3/27/2008	9	<33	<65	<5.3	<0.02	<0.053	<0.053	<0.053
EX1-SD-SW	EX1-SD-SW-6	3/28/2008	6	<28	<56	<3.8	<0.020	<0.038	<0.038	<0.038
EX1-BTM-SW	EX1-BTM-SW-8	3/28/2008	8	<29	<58	<4.1	<0.020	<0.041	<0.041	<0.041
EX1-SD-W	EX1-SD-W-6	3/28/2008	6	<30	<60	<3.8	<0.020	<0.038	<0.038	<0.038
EX1-SD-E	EX1-SD-E-5	3/31/2008	5	<28	<57	<4.0	<0.020	<0.040	<0.040	<0.040
EX1-SD-N	EX1-SD-N-5	3/31/2008	5	1,500	140	**<95**	**1.4**	3.2	**6.9**	**23.6**
EX1-SD-S	EX1-SD-S-4	3/31/2008	4	<27	59	<3.6	<0.020	<0.036	<0.036	<0.036
EX1-BTM-PLT	EX1-BTM-PLT-4	3/31/2008	4	<28	94	<3.7	<0.020	<0.037	<0.037	<0.037
MTCA Method A Cleanup Levels for Soil[7]				**2,000**	**2,000**	**30**	**0.03**	**7**	**6**	**9**

NOTES:

Results in **bold** denote concentrations above applicable cleanup levels.

< denotes analyte not detected at or above the reporting limit listed.

[1]Depth in feet below ground surface (bgs).

[2]Samples analyzed by OnSite Environmental Inc. of Redmond, Washington.

[3]Analyzed by Northwest Method NWTPH-Dx. Sample extract treated with acid/silica gel cleanup procedure.

[4]Analyzed by Northwest Method NWTPH-Gx.

[5]Analyzed by U.S. Environmental Protection Agency Method 5035A.

[6]Total xylenes = m,p-xylenes + o-xylenes.

[7]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code as revised November 2007.

DRO = total petroleum hydrocarbons (TPH) as diesel-range organics

GRO = TPH as gasoline-range organics

ORO = TPH as oil-range organics

Table 4
Summary of TPH Soil Sampling Analytical Results
Yarrow Bay Marina - Western Parcel
5207 Lake Washington Boulevard Northeast, Kirkland, Washington
Farallon PN: 112-001

Sample Location	Sample Identification	Sample Date	Sample Depth (feet bgs)[1]	Analytical Results (milligrams per kilogram)[2]						
				DRO[3]	ORO[3]	GRO[4]	Benzene[5]	Toluene[5]	Ethyl-benzene[5]	Total Xylenes[5,6]
Soil Sampling										
FE-1	FE-1-4-21-08	4/21/2008	5.0	<31	<63	<4.4	<0.020	<0.044	<0.044	<0.044
FE-5	FE-5-5-7-08	5/7/2008	3.0	<31	<61	<6.0	<0.020	<0.060	<0.060	<0.060
FE-6	FE-6-5-7-08	5/7/2008	3.0	<30	<60	<5.8	<0.020	<0.058	<0.058	<0.058
FE-7	FE-7-5-7-08	5/7/2008	3.0	<31	<62	<5.9	<0.020	<0.059	<0.059	<0.059
FE-8	FE-8-5-7-08	5/7/2008	1.5	<29	<59	<6.2	<0.020	<0.062	<0.062	<0.062
FE-9	FE-9-5-7-08	5/7/2008	1.5	<33	<65	<6.5	<0.020	<0.065	<0.065	<0.065
FE-12	FE-12-5-7-08	5/7/2008	1.0	<33	<66	<7.2	<0.020	<0.072	<0.072	<0.072
FE-13	FE-13-052208-8	5/22/2008	8.0	<35	<69	<8.4	<0.020	<0.084	<0.084	<0.084
FE-14	FE-14-052208-5	5/22/2008	5.0	<29	120	<5.8	<0.020	<0.058	<0.058	<0.058
Test Pit										
TP1	TP1-091808-3	9/18/2008	3.0	<29	62	<6.4	<0.020	<0.064	<0.064	<0.064
Septic Tank Excavation										
ST-N	YP-ST-061208-N	6/12/2008	3.0	<29	<57	<5.2	<0.020	<0.052	<0.052	<0.052
ST-E	YP-ST-061208-E	6/12/2008	3.0	<29	<58	<5.4	<0.020	<0.054	<0.054	<0.054
ST-S	YP-ST-061208-S	6/12/2008	3.0	<29	<57	<5.6	<0.020	<0.056	<0.056	<0.056
ST-W	YB-ST-061208-W	6/12/2008	3.0	82	110	<6.2	<0.020	<0.31	0.25	4.58
ST-B	YP-ST-061208-B	6/12/2008	8.0	<30	<60	<5.8	<0.020	<0.058	<0.058	<0.058
MTCA Method A Cleanup Levels for Soil[7]				**2,000**	**2,000**	**30**	**0.03**	**7**	**6**	**9**

NOTES:

Results in **bold** denote concentrations above applicable cleanup levels.

< denotes analyte not detected at or above the reporting limit listed.

DRO = total petroleum hydrocarbons (TPH) as diesel-range organics

GRO = TPH as gasoline-range organics

ORO = TPH as oil-range organics

[1]Depth in feet below ground surface (bgs).

[2]Samples analyzed by OnSite Environmental Inc. of Redmond, Washington.

[3]Analyzed by Northwest Method NWTPH-Dx. Sample extract treated with acid/silica gel cleanup procedure.

[4]Analyzed by Northwest Method NWTPH-Gx.

[5]Analyzed by U.S. Environmental Protection Agency Method 5035A.

[6]Total xylenes = m,p-xylenes + o-xylenes.

[7]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code as revised November 2007.

Table 5
Summary of cPAH Soil Sampling Analytical Results
Yarrow Bay Marina - Western Parcel
5207 Lake Washington Boulevard Northeast, Kirkland, Washington
Farallon PN: 112-001

Sample Location	Sample Identification	Sample Date	Sample Depth (feet bgs)	Analytical Results (milligrams per kilogram)[1]							
				Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenz(a,h) anthracene	Total cPAH TEF[2,3]
FE-2	FE-2-5-1-08	5/1/2008	3.0	0.012	0.019	0.017	<0.0091	0.013	<0.0091	<0.0091	0.0088
FE-3	FE-3-5-1-08	5/1/2008	3.0	0.38	0.41	0.17	0.049	0.096	0.026	0.012	**0.16**
FE-4	FE-4-5-1-08	5/1/2008	3.0	<0.0082	<0.0082	<0.0082	<0.0082	<0.0082	<0.0082	<0.0082	0.0031
MTCA Method A Cleanup Levels for Soil[4]											**0.10**

NOTES:

Results in **bold** denote concentrations above applicable cleanup levels.

bgs = below ground surface

< denotes analyte not detected at or above the reporting limit listed.

[1]Analyzed by U.S. Environmental Protection Agency Method 8270C SIMS.

[2]Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) derived using the total toxicity equivalency (TEQ) method in Section 708(8) of Chapter 173-340 of the Washington Administrative Code.

[3]For concentrations reported at less than the laboratory reporting limit, half the reporting limit was used to calculate the TEQ.

[4]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code as revised November 2007.

Table 6
Summary of Groundwater Elevation Data
Yarrow Bay Marina - Western Parcel
5207 Lake Washington Boulevard Northeast, Kirkland, Washington
Farallon PN: 112-001

Well Identification	Water Level Measurement Date	Elevation Top of Well Casing (feet)[1]	Depth to Water (feet)[2]	Groundwater Elevation (feet)
MW-8	12/05/08	24.20	3.89	20.31
	03/17/09		3.36	20.84
	06/17/09		2.58	21.62
	10/05/09		3.70	20.50
MW-9	12/05/08	24.21	3.87	20.34
	03/17/09		3.32	20.89
	06/17/09		2.58	21.63
	10/05/09		3.61	20.60
MW-10	12/05/08	23.93	3.26	20.67
	03/17/09		3.14	20.79
	06/17/09		2.51	21.42
	10/05/09		3.17	20.76

NOTES:

[1]Elevations from survey conducted on 12/8/08 by PACE Engineering.

[2]In feet below top of well casing.

Table 7
Summary of Groundwater Monitoring Analytical Results
Yarrow Bay Marina - Western Parcel
5207 Lake Washington Boulevard Northeast, Kirkland, Washington
Farallon PN: 112-001

Sample Location	Sampled By	Sample Date	Analytical Results (micrograms per liter)						
			GRO[1]	DRO[2]	ORO[2]	Benzene[1]	Toluene[1]	Ethylbenzene[1]	Total Xylenes[1]
MW-8	Farallon	12/05/08	<100	<250	<400	<1.0	<1.0	<1.0	<1.0
	Farallon	03/17/09	<100	<270	<430	<1.0	<1.0	<1.0	<1.0
	Farallon	06/17/09	<100	<260	<410	<1.0	<1.0	1.1	<1.0
	Farallon	10/05/09	<100	<270	<430	<1.0	<1.0	<1.0	<1.0
MW-9	Farallon	12/05/08	<100	<260	<420	<1.0	<1.0	<1.0	<1.0
	Farallon	03/17/09	<100	<270	<430	<1.0	<1.0	<1.0	<1.0
	Farallon	06/17/09	<100	<260	<420	<1.0	<1.0	<1.0	<1.0
	Farallon	10/05/09	<100	<270	<430	<1.0	<1.0	<1.0	<1.0
MW-10	Farallon	12/05/08	<100	<250	<400	<1.0	<1.0	<1.0	<1.0
	Farallon	03/17/09	<100	<270	<430	<1.0	<1.0	<1.0	<1.0
	Farallon	06/17/09	<100	<260	<420	<1.0	<1.0	<1.0	<1.0
	Farallon	10/05/09	<100	<260	<420	<1.0	<1.0	<1.0	<1.0
MTCA Method A Cleanup Levels for Groundwater[3]			**1,000**	**500**	**500**	**5**	**1,000**	**700**	**1,000**

NOTES:

Results in **bold** denote concentrations or reporting limit above applicable cleanup levels.

< denotes analyte not detected at or above the reporting limit listed.

— denotes sample not analyzed.

[1]Analyzed by Northwest Method NWTPH-Gx/BTEX.

[2]Analyzed by Northwest Method NWTPH-Dx.

[3]Washington State Model Toxics Control Act Cleanup Regulation Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised November 2007.

GRO = total petroleum hydrocarbons as gasoline-range organics

DRO = total petroleum hydrocarbons as diesel-range organics

ORO = total petroleum hydrocarbons as oil-range organics

BTEX = benzene, toluene, ethylbenzene, and xylenes