REMEDIAL INVESTIGATION PROPOSAL

Historical Manufactured Gas Plant Activities
Siltronic Corporation Property
7200 NW Front Avenue
Portland, Oregon

November 17, 2006

HAI Project No. 5237

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Prepared for:

NW Natural
Portland, Oregon

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1.0 INTRODUCTION

1.1 Basis

NW Natural retained Hahn and Associates, Inc. (HAI) to prepare this Remedial Investigation (RI) Proposal to describe the approach for determining the nature and extent of apparent manufactured gas plant (MGP) waste-related impacts at the Siltronic Corporation (Siltronic) property, 7200 NW Front Avenue, Portland, Oregon (Figures 1 and 2). This RI proposal is submitted in accordance with NW Natural's Voluntary Agreement with DEQ (No. WMCVC-NWR-94-13) dated August 8, 1994 as amended July 19, 2006.

Previous investigations conducted by NW Natural on the Siltronic property focused on the evaluation of potential contaminant pathways to the Willamette River, and were completed pursuant to an Order Requiring RI and Source Control Measures (DEQ No. ECVC-NWR-00-27), issued jointly to both Siltronic and NW Natural. These previous activities also included a detailed review of available chemical and lithological data, as well as known potential sources of contamination at the Siltronic property.

Prior investigations and existing data have been summarized in a document entitled *Updated Phase I Site Characterization Summary Report, Siltronic Corporation Property*, Portland, Oregon, dated July 22, 2005 (HAI, 2005), and a November 2003 *Source Control Evaluation Report* (Anchor, 2003).

Other RI activities, related to non-MGP associated waste management practices, are being conducted by Siltronic under a separate order from DEQ and relate to chlorinated solvent contamination. Additional investigations to evaluate pesticide impacts are being conducted by Rhone-Poulenc on the Siltronic property.

1.2 Purpose

The purpose of this RI Proposal is to describe NW Natural's proposed approach to delineating the nature and extent of potential MGP-related impacts on the Siltronic property and to provide data necessary to evaluate

potentially complete media-specific exposure pathways (e.g., soil, groundwater, surface water, air) in support of human health and ecological risk assessment.

2.0 SITE BACKGROUND

Siltronic operates a silicon wafer fabricating facility on an 85-acre site along the western bank of the Willamette River in a section of northwest Portland zoned by the City as “Heavy Industrial”. A general description of the property, including an overview of former MGP operations, is provided below.

2.1 Description

The property, situated immediately northwest of the Burlington Northern / Santa Fe (BNSF) railroad bridge, is generally rectangular in shape. Property boundaries include the Willamette River to the northeast; BNSF railroad berms to the southwest and southeast; and a property line shared with NW Natural and Koppers Industries, Inc. (KII) to the northwest (i.e., the former Gasco-facility property). US Highway 30 (NW St. Helens Road), an automobile storage facility, a former rock quarry, and the Tualatin Mountains lie beyond the BNSF right-of-way to the southwest. Beyond the southeastern BNSF right-of-way lie the Rhone-Poulenc/Aventis CropScience, ESCO Corp., Gould / NL Industries, and Elf Atochem North America properties, all of which are undergoing environmental investigation and/or cleanup.

Additional site features include a narrow greenway that has been created along the full riverfront portion of the property, as well as an approximate 100-foot wide City of Portland utility easement that divides the property from the northwest to the southeast (Figure 2). Underground utilities that exist within the City of Portland easement include oil, gasoline, natural gas, water, and sewer pipelines, as well as electric and telephone cables.

2.2 Manufactured Gas Plant Operations

The Portland Gas & Coke Company (PG&C) built and operated an oil gasification plant on the current NW Natural property, north of the Siltronic property, between 1912 and 1956. PG&C owned a portion of the Siltronic property from 1939 until 1960, during which time company records and aerial

photograph review indicate waste management activities were conducted on an approximately 400 foot-wide strip of the northern portion of the Siltronic property proximate to the current NW Natural / Siltronic property boundary. No MGP production areas were located on the footprint of the current Siltronic property.

In order to better understand the nature of MGP-related waste management areas historically located on the Siltronic property, PG&C historical operations, including a description of products, by-products, and wastes, are described herein, based on various resources as previously described in HAI (2005c).

The Gasco facility used the "Pacific Coast Oil Gas Process" throughout the plant's life. This process involved thermal cracking of oil at near atmospheric pressure in a cylindrical shell containing heated refractory checker brick. In this process, heavy oils were introduced to the gasified vessel after pre-heating the checker brick to 2,000°F. These oils were then thermally cracked as they moved downward through the gasifier producing gas, lampblack, and tar. The lampblack and tar were subsequently removed from the gas after which the gas passed through purifiers where sulfur and other impurities were removed.

Residuals from the MGP process, including tars, lampblack, tar/oil/water emulsions, and spent oxide gas purification wastes, were either reclaimed and sold as a byproduct, stockpiled, or managed as a waste.

Once natural gas became available in the 1950s, much of the MGP plant was shut down, with plant operations ceasing in 1956. With the arrival of natural gas, PG&C changed its name to the Northwest Natural Gas Company, and is now known as NW Natural. The Northwest Natural Gas Company constructed a liquefied natural gas (LNG) plant at the adjacent Gasco site in the late 1960's, at which time most of the old gasification plant was demolished.

3.0 CONCEPTUAL SITE MODEL

3.1 Potential Contaminant Sources Attributable to MGP-Related Waste Management

PG&C operated an oil MGP on the Gasco property, north of Siltronic, from 1912 until 1956. PG&C owned a portion of the Siltronic property from 1939 until 1960, during which time waste management activities appear to have been conducted at three portions of the present-day Siltronic property, all located at the northern end of the property proximate to the Gasco site, with a fourth activity, conducted by others after NW Natural sold the property, being potentially attributable to the redistribution of MGP wastes within the fill.

Former 400-foot Wide Effluent Pond Overflow Area: An approximate 10-acre area immediately south of the common Siltronic/Gasco property line received tar and tar/oil/water emulsifications from effluent pond overflow and from direct placement of MGP residuals between 1941 and 1956. Soil and groundwater impacts attributable to this feature are present at the Siltronic site. Estimates based on tar thickness measurements made in 1960 indicate approximately 40,000 cubic yards of tarry materials were present in this area subsequent to cessation of all MGP-related activities at the Gasco site, which occurred in 1956. Volumes of oil/water effluent, historically discharged to this area between 1951 and 1956, are not known. Regarding the tar thickness, measurements made in 1960 by CH2M Hill using a sounding rod indicate 1 to 4 feet of tar across the southern portion of the lowland area, increasing in thickness to between 7 and 14 feet to the north at the former outlet location on and proximate to the current NW Natural/Siltronic property line (Figures 3 and 4). These thicknesses would represent conditions prior to any removal or redistribution that may have occurred as part of site filling activities between 1966 and 1975.

Former Depression or Excavation**:** South of the former lowland area, approximately 2 to 3 feet of tar was identified at the base of this approximate 0.5-acre apparent excavation when evaluated in 1960 (Figures 3 and 4). This feature was first observed in aerial photographs dated 1955, as is a road from the effluent pond area at the Gasco site to this location. Estimates based on tar thickness measurements made in 1960 indicate up to approximately 2,000 cubic yards of tarry materials may have been present in this area subsequent to cessation of all MGP-related activities at the Gasco site. The function of this depression / excavation is unknown.

Former Spent Oxide / Gas Purifier Waste Storage Pile: Spent oxide (also called purifier box wastes) was generated from the use of iron oxide (iron-impregnated wood chips) or lime as solid reactants for the removal of sulfur from the oil gas. Spent oxide is primarily a blend of iron sulfides, sulfur, iron oxides and wood substrate and/or lime. Spent oxide material may also contain hydrocarbons that passed through the upstream gas processing equipment, as well as trace metals and cyanide that would be removed from the gas along with the sulfur.

Company records indicate an estimated 34,000 cubic yard stockpile of spent oxide / gas purification wastes were formerly stored immediately south of the common Siltronic/Gasco property line near the western corner of the Siltronic property (Figures 3 and 4). Aerial photographs indicate the stockpile was present at this location between 1952 and 1966, several years after NW Natural sold the property.

3.2 Potential Contaminant Sources Attributable to Redistribution of MGP Materials as Fill

Site filling activities were conducted on the Siltronic property between 1966 and 1975. Filling involved placement of 1.5 million cubic yards of material on the property, including approximately 700,000 cubic yards of dredge spoils from unidentified locations and 800,000 cubic yards of material imported from a quarry. Depending upon origin, dredged sediments could reasonably have been impacted by many different sources of potential contamination, including ship traffic, industrial operations (such as MGP, wood treating facilities, shipyards, pesticide manufacturing, or petroleum terminals), agricultural activities, or urban run-off. During the time of filling activities, the property was owned by Mr. Victor Rosenfeld and Mr. H.A. Anderson.

Observations of tar or oil during various investigations or construction activities at the Siltronic site, as well as dark soils visible in aerial photographs between 1967 and 1971 (HAI, 2005c), suggest the possibility that MGP-related wastes from the 400-foot wide effluent pond overflow area and/or the spent oxide pile may have been redistributed and combined with fill placed at various portions of the Siltronic property during filling activities (1966-1975), after NW Natural sold the property in 1960 (Figure 4).

3.3 Process Residuals and Contaminants of Interest at Oil Gas MGP Sites

Polynuclear aromatic hydrocarbons (PAHs) and to lesser extent, other semi-volatile organic compounds (SVOCs) such as carbazole, dibenzofuran, 2-methylnaphthalene, and phenols, are present in the raw materials, byproducts, and residues of the oil gasification process as summarized in the following table.

Oil Gas MGP Process Residuals

Process Residual	Description	Contaminants of Interest
Tar	sludge generated from tar/oil/water separation	Semi-volatile organics (acid extractable and base/neutral organics-predominantly PAHs); Volatile Aromatic Hydrocarbons (BTEX)
Lampblack	Solid residue resulting from gasification of heavy oil	Semi-volatile organics (acid extractable and base/neutral organics-predominantly PAHs)
Tar/Oil/Water Emulsions	Residual generated during gas production and heat recovery	Semi-volatile organics (acid extractable and base/neutral organics); Volatile Aromatic Hydrocarbons (BTEX)
Purifier Box Wastes (Spent Lime & Spent Oxide)	Resulting from use of lime and metal oxides for removal of sulfur (primarily hydrogen sulfide), and cyanide from product gas	Trace metals, Cyanide (predominantly as ferrocyanates); PAHs and BTEX due to incorporation of tar or lampblack during gas purification; possible low pH; nitrate, sulfate, sulfide
Light/Middle/Heavy Oil (Byproduct for processing)	Resulting from product gas clean-up, heat recovery, and through tar/oil/water separation and subsequent processing and tar/hydrocarbon processing	Semi-volatile organic (acid extractable and base/neutral organics-predominantly PAHs); Volatile Aromatic Hydrocarbons (BTEX)
Naphthalene	Resulting from gas clean up and light oil processing	Naphthalene

The monocyclic aromatic hydrocarbons benzene, toluene, ethylbenzene, and xylene are present in the motor fuels and light oils that were produced at the Gasco facility and are COIs for the proposed RI.

Trace metals are typically present within MGP gas purification materials, with the specific metals present being a function of feedstock type (e.g., oil versus coal). Based on testing of soils for an extensive suite of metals as part of both the Gasco RI (HAI, 1998, 2005a), and as part of activities conducted to date at the Siltronic site (HAI, 2005c), the metals arsenic, cadmium, chromium, copper, lead, nickel, and zinc have been identified as COIs for the proposed RI. These metals have all been identified in the literature (reference) as being potentially present in MGP residues, and have also been identified in one or more soil samples at the Gasco and/or Siltronic site at a concentration greater than typical background concentrations for the region.

Cyanide may be present at former MGP sites due to a common presence of this constituent in gas purification spent oxide box residuals, with the primary form being ferric-ferrocyanide complexes. These complexes, if present, often result in a blue coloration known as Prussian Blue (Hayes, 1996). The chemical form of cyanide that causes toxicity is non-complexed, or free cyanide (CN^- or HCN). Free cyanide has been identified as a COI for the proposed RI.

Based on the preceding, COIs for inclusion within the proposed RI are as follows:

Contaminants of Interest

PAHs	Phenolics and Acid Extractables	Volatile Aromatics	Inorganics	Metals
Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,I,)perylene Benzo(k)fluoranthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Naphthalene Indeno(1,2,3-cd)pyrene Phenanthrene Pyrene	Carbazole Dibenzofuran 2,4-Dimethylphenol 3,4-Dimethylphenol 1-Methylnaphthalene 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Phenol	Benzene Toluene Ethylbenzene Xylene	Free Cyanide	Arsenic Cadmium Chromium Copper Lead Nickel Zinc

3.4 Hydrogeology

Hydrogeological conditions at the Siltronic and adjacent Gasco properties have been characterized by HAI and others through the completion of numerous phases of investigation. Logs for soil and monitoring well borings installed on the Siltronic property are included within HAI (2005c), with logs available from more recently installed borings included within Appendix A. Construction information for monitoring wells and temporary well points installed at the Siltronic property are included in Table 1. The location of borings and monitoring wells on these properties are depicted on Figure 5.

Based on results of investigatory activities completed to date, and as previously described in HAI (2005c), groundwater occurs in three hydrologic zones beneath the Siltronic site: the unconfined surficial fill water-bearing zone (WBZ), the semi-confined alluvial WBZ, and the bedrock aquifers of the Columbia River Basalt Group (CRBG).

3.4.1 Surficial Fill WBZ

Surficial fill at the Siltronic property consists of 700,000 cubic yards of dredge materials and 800,000 cubic yards of other imported materials. Prior to filling, during the 1941 to 1956 timeframe, MGP residuals (tar, oil/water emulsions, spent oxide materials) were discharged, placed, or stored on the northern former lowland portion of the Siltronic property (Figure 4). Surficial fill at portions of the Siltronic property has been found to contain impacts potentially attributable to re-distribution of MGP residues at the site, and/or as a function of multiple other sources that may have impacted dredged sediments prior to placement on the site. All fill-related activities at the Siltronic property were conducted by others after NW Natural sold the Siltronic parcel in 1960.

An isopach map depicting the thickness of the surficial fill unit across the Gasco and Siltronic properties is included as Figure 6. The thickness of the surficial fill unit across the site ranges from approximately 2 to 25 feet near the Tualatin Mountains to a maximum of 35 to 42 feet in the central – northern portion of the Siltronic property. Along the bank of the Willamette River, the surficial fill unit ranges in thickness from approximately 24 to 40 feet. Fill identified adjacent to the river was predominantly found to consist of fine- to coarse-grained sand and gravelly sand, with occasional concrete,

brick, or glass fragments. However, at several locations, a much finer-grained material, predominantly a sandy silt to silt with occasional gravel, was identified.

As depicted on Figure 7, the overall groundwater flow direction within the surficial fill zone WBZ across a majority of the site is to the northeast, towards the Willamette River, where this zone becomes very thin to seasonally absent. A groundwater divide exists near the southwestern portion of the site, with flow within the surficial fill back to the south and toward North Doane Creek, located off-site on property owned by the Burlington Northern Railroad Company (BNSF). A downward hydraulic gradient between the surficial fill WBZ and the alluvial WBZ is typical, and groundwater in the surficial WBZ will migrate to the alluvial WBZ in areas where the intervening silt unit thins or otherwise does not impede downward flow.

3.4.2 Silt Unit

Beneath the surficial fill WBZ is a laterally extensive fine-grained low conductivity silt unit, the properties of which preclude it from being characterized as a water-bearing zone. Figure 8 depicts the interpreted elevation contours for the surface of the silt unit. As depicted on Figure 8, the silt unit has been found to be absent below some upland near-shore areas at the Gasco property. Further, an overall linear depression in the surface of the silt is apparent trending southeast to northwest across the central portion of the Siltronic and Gasco properties, possibly corresponding to the location of a historic surficial drainage feature.

The silt unit has been found to range in thickness from approximately 70 feet near the central portion of the Siltronic site, thinning toward the river, where thicknesses of 1 to 3 feet are common at the northern end of the riverbank, becoming thicker (7 to 10 feet) across the southern two-thirds of the Siltronic shoreline (Figure 9). Beyond the riverbank, a thickening prism of silt has been identified extending 200 to 300 feet from the shoreline (HAI, 2005a,b).

The silt unit is typically found to exhibit coloration ranging from olive gray to green, with some areas of orange-brown mottling, with small sand lenses and vertical rootlet zones present within portions of the silt unit. Vertical migration of contaminants to the underlying alluvial WBZ has occurred at the northern portion of the Siltronic site where MGP-related dense non-aqueous phase liquid (DNAPL) has migrated through the silt (HAI, 2005c,d).

3.4.3 Alluvial Water-Bearing Zone

The alluvial WBZ consists of interbedded sands and silts underlying the silt unit, and ranges in thickness from 2 to 25 feet thick at the central and western portions of the Gasco/Siltronic area, to up to 175 feet adjacent to the river, near the northern corner of Siltronic. The sands within the alluvial unit are described as grey in color with localized areas of brown coloration, fine-grained, well sorted / poorly graded, sub-round to angular, and locally micaceous. Silt / sandy silt lenses identified within the sand were typically grey in coloration, and typically contain rootlets and shell fragments. A thin layer consisting of medium to coarse-grained sandy gravel has been observed at the base of the alluvial deposits at both the Siltronic and Gasco properties.

Overall groundwater flow direction in the alluvial WBZ is to the northeast toward the Willamette River, although a more northern component of flow is apparent at the basal portions of the alluvial WBZ (HAI, 2005c).

The Willamette River likely acts as a groundwater discharge boundary for at least the upper alluvial WBZ. The relationship between the lower alluvial WBZ and the river is not well understood. Figure 10 depicts typical groundwater elevations and interpreted flow direction for the upper alluvial WBZ.

3.4.4 Columbia River Basalt Group

The oldest and lowermost geologic unit of interest at the site consists of the Columbia River Basalt Group (CRBG). The Miocene-age CRBG, composed of a series of individual lava flows, generally forms the base (bedrock) of the Portland Basin and outcrops immediately to the southwest of the site in the Tualatin Mountains. The confined to semi-confined bedrock aquifers in the Columbia River Basalts have historically been of significance regionally.

Figure 11 provides elevation contours for the surface of the bedrock using available data from both the Siltronic and Gasco properties. These data indicate the basalt surface dips steeply to the northeast across the Gasco and Siltronic properties, with the top of the basalt occurring at a depth of approximately 36 feet bgs near the southern corner of the Gasco site, to depths of 215 feet bgs near the northern corner of the Siltronic site. Although, in general, the bedrock surface is anticipated to dip steeply from the Tualatin Hills towards the Willamette River, undulations in the surface

are observed. Investigatory activities conducted near the southern corner of the Siltronic property, as well as results of investigatory activities completed along the southeastern Siltronic property boundary, indicate the presence of a bedrock high, with the bedrock surface occurring at a depth of 108 to 115 feet bgs near the locations of wells RP-7 and WS-3, and rising towards the east corner of the Siltronic site adjacent to the Willamette River, where bedrock was encountered at a depth of 63 feet bgs at boring RP-1.

Recent investigatory activities completed by AMEC (2006a) along the upland shoreline indicate that the bedrock surface elevation rises vertically approximately 108 feet along the shoreline over a lateral distance of 400 feet between borings RP-11 (209 feet bgs) and SIL-03 (101 feet bgs). Further work conducted offshore by MFA (2005a) found that the bedrock surface rises to a depth of approximately 90 feet bgs (relative to the Siltronic ground surface), within approximately 400 feet of the northern Siltronic shoreline (Figure 11). At this time it is not clear if this sharp change in bedrock elevation, which may represent a trough-like surface striking parallel to the shoreline, is erosional, structural, or a combination of the two (e.g. erosion along a fault plane).

Because the vertical extent of MGP-related contamination is defined above the basal portions of the alluvial WBZ, groundwater within the CRBG has not been monitored as part of Gasco RI activities.

3.5 Summary of Site Impact Characterization

3.5.1 Groundwater

An evaluation of COIs in near-shore groundwater has previously been completed as part of Willamette River source control screening activities (Anchor 2006c). As a result, NW Natural has proposed groundwater and DNAPL-related pilot source control activities for the area immediately north of the Siltronic property between the river and the former tar effluent pond area (Anchor, 2006a,b). Full scale implementation of groundwater and DNAPL source control activities will be based on the results of the pilot activities in conjunction with off-shore characterization/plume delineation activities (Anchor 2006c) presently occurring offshore of the Siltronic and Gasco properties.

Available groundwater quality data for the Siltronic site are summarized in Tables 2 through 5 (temporary well point data) and Tables 6 through 9 (monitoring wells). Of these data, the chemicals benzene, naphthalene, and cyanide are key constituents with regard to evaluating contaminant distribution that may be related to MGP residuals. As such, the distribution of these chemicals within the surficial fill WBZ and within the upper and intermediate-depth intervals of the alluvial WBZ have been depicted on Figures 12 through 19. For graphical purposes, concentrations used for depicting the boundaries of the plumes were 5 parts per billion (ppb) benzene; 6.2 ppb naphthalene; and 0.14 parts per million (ppm) total cyanide – values derived from the DEQ Portland Harbor Joint Source Control Strategy document, below which the COIs were typically either non-detect, or in the case of total cyanide, were present at relatively uniform concentrations near laboratory method reporting levels. A brief summary of nature and extent of potential MGP-related impacts to groundwater is included below.

Surficial Fill WBZ

With regard to the surficial fill WBZ, detectable concentrations of benzene and naphthalene in groundwater (Figures 12 and 13) proximate to the Willamette River shoreline are primarily limited to the northern corner of the Siltronic property (down-gradient from the former lowland area), and are limited to relatively low concentrations. The greatest concentrations of these constituents occur at the northwestern portion of the Siltronic property proximate to the 400-foot wide former lowland area, where historical placement and discharge of MGP-related residuals occurred. Also within this area, but within the utility right-of-way, was a location where the Olympic fuel pipeline experienced a failure, with the magnitude of any release to the environment having not been documented (HAI, 2005c).

As depicted on Figure 14, concentrations of cyanide in groundwater greater than 0.14 ppm (total cyanide concentrations) are present within the surficial fill WBZ across the approximate northern half of the Siltronic property, and as with petroleum-hydrocarbon-based COIs, the highest concentrations are present in the area of the former lowland area where residual MGP wastes were historically discharged or placed.

COI data availability for groundwater within the surficial fill WBZ at the southern portion of the Siltronic property (undeveloped land and parking lot areas) is limited, with incomplete delineation of the lateral extent of the

benzene, naphthalene, and cyanide plumes within the fill through this area (Figures 12 through 14). Although limited, where data are available for this portion of the site, concentrations are significantly lower than those identified at the northwestern / former lowland portion of the site.

Alluvial WBZ

As depicted on Figures 15 and 16, existing data indicate that vertical migration of petroleum hydrocarbon-related chemicals from the surficial fill WBZ to the underlying alluvial WBZ is limited to the northern portion of the Siltronic property, correlating to the area of MGP-related DNAPL penetration through the silt unit beneath a portion of the former lowland area. With this regard, and as depicted on the referenced figures, the petroleum hydrocarbon plume has been delineated laterally and vertically along the shoreline, extending across a depth interval of approximately 60 to 150 feet bgs, and laterally along the shoreline from a location north of the common property boundary with Gasco, to a location approximately 375 to 450 feet upriver of the property line, correlating with the location of the former lowland area.

Similar to the petroleum-hydrocarbon impacts described above, as depicted on Figure 17, concentrations of total cyanide in groundwater greater than 0.14 ppm are present within the alluvial WBZ at the northern portion of the Siltronic property, with the greatest concentrations in the alluvial occurring beneath the zone of greatest impact within the surficial fill (i.e., the former lowland area / Fab 1 area).

As with the surficial fill WBZ, a low density of groundwater quality data points are available within the alluvial WBZ across the southern portion of the Siltronic property. Additional data regarding COI extent is needed in these areas to provide more complete plume delineation. Although additional data are recommended, the thickening of the silt unit at the southern portion of the site, the lack of historical active MGP residuals management in these areas (with exception of possible inclusion within fill), and the lack of observed impacts along the southern two-thirds of the Siltronic shoreline, do not suggest the presence of significant MGP-related impacts to the alluvial WBZ in these areas. Plume delineation to the north-northeast beneath the Willamette River channel is presently occurring as part of ongoing groundwater/DNAPL source control design activities (Anchor, 2006c).

3.5.2 Soils

Soil data available for the site are summarized in Tables 10 through 14. A majority of the data have been collected to characterize zones of visual impact and were collected independent of depth encountered. As such, with exception of surface sampling conducted above the rip-rap river embankment, relatively few data are available to describe nature and extent of COIs within surface soils (0 to 3 feet) or subsurface soils (0 to 12 feet) at the site.

Surface soil samples collected along the top of the embankment above the rip-rapped area at Siltronic did not contain total petroleum hydrocarbons or total cyanide, although PAHs and/or SVOCs were identified at low concentrations (less than 2.2 ppm) at the three northernmost locations (e.g., S-1 through S-3). Zinc was identified at the northernmost location (S-1) at a concentration slightly exceeding typical background concentrations. No evidence of overland erosion from the densely vegetated area at the top of the embankment to the heavily rip-rapped embankment, was observed.

Diesel and oil-range petroleum hydrocarbons, PAHs (91.2 ppm), and cyanide (13,000 ppm) were identified in a sample of embankment soils collected from the only area not completely armored with rip-rap, a location below the Fab 2 outfall. Bank soils are composed of fill. It is not clear if the identified impacts are associated with impacts attributable to the nature of the fill, or if the soils are impacted as a result of historical discharges from the Fab 2 outfall.

The greatest PAH concentrations in soil identified to date all correspond to a sample of tar collected at a depth of 30 feet bgs at the extreme northern corner of the Siltronic site (boring P-1), a location near the former tar effluent pond outlet to the Willamette River. The greatest BTEX concentrations in soil were all identified within a sample containing visible oil that was collected at a depth of 20 feet bgs within the fill in the former lowland/overflow area.

A summary of the primary chemicals identified within soils at the Siltronic property to date, including the maximum concentration, location, and depth of the maximum detection, are summarized in the following table.

Chemicals Detected in Soil with Maximum Concentrations and Location

Analyte	Date	Location	Depth (feet bgs)	Maximum Concentration (mg/Kg)	Comment
PAHs					
Benzo(a)anthracene	8/17/2001	P-1	30	817	Tar
Benzo(a)pyrene	8/17/2001	P-1	30	1,280	Tar
Benzo(b)fluoranthene	8/17/2001	P-1	30	638	Tar
Benzo(ghi)perylene	8/17/2001	P-1	30	1,120	Tar
Benzo(k)fluoranthene	8/17/2001	P-1	30	743	Tar
Chrysene	8/17/2001	P-1	30	940	Tar
Dibenzo(a,h)anthracene	8/17/2001	P-1	30	143	Tar
Indeno(1,2,3-cd)pyrene	8/17/2001	P-1	30	623	Tar
Acenaphthene	8/17/2001	P-1	30	2,800	Tar
Acenaphthylene	8/17/2001	P-1	30	151	Tar
Anthracene	8/17/2001	P-1	30	997	Tar
Fluoranthene	8/17/2001	P-1	30	3,020	Tar
Fluorene	8/17/2001	P-1	30	1,240	Tar
Naphthalene	8/17/2001	P-1	30	60,900	Tar
Phenanthrene	8/17/2001	P-1	30	6,650	Tar
Pyrene	8/17/2001	P-1	30	3,400	Tar
SVOCs					
Carbazole	8/17/2001	P-1	30	413	Tar
2-Chlorophenol		S-3	0.2	0.0707	
Dibenzofuran	8/17/2001	P-1	30	230	Tar
1-Methylnaphthalene	7/14/2003	GP-11	15	31	
2-Methylnapthalene	8/17/2001	P-1	30	2,180	Tar
Phenol		S-3	0.2	0.077	
VOCs					
Acetone	10/7/2002	GP-12	18	0.492	Tar
Benzene	7/16/2003	GP-10	20	218	Oil
Benzene,1,2,4-trimethyl	7/16/2003	GP-10	20	178	Oil
Benzene, 1,3,5-trimethyl-	7/16/2003	GP-10	20	56.7	Oil
n-Butylbenzene	9/3/2003	WS-10	26	4.76	
sec-Butylbenzene	8/17/2001	P-1	30	1.92	Tar
o-Chlorotoluene	3/19/2002	GP-2-01	23.5	2.93	Tar
1,1-Dichloroethylene (DCE)[1]	10/4/2003	WS-15	55	0.617	
cis-1,2- DCE[1]	7/16/2003	GP-10	20	208	
Ethylbenzene	7/16/2003	GP-10	20	162	Oil
4-Isopropyltoluene	3/19/2002	GP-18	12.5	6.39	

Analyte	Date	Location	Depth (feet bgs)	Maximum Concentration (mg/Kg)	Comment
n-Propylbenzene	9/3/2003	WS-10	26	5.54	Oil
Styrene	6/29/2004	GP-16	23	4.64	
Toluene	7/16/2003	GP-10	20	223	Oil
1,1,1-Trichloroethane[1]	4/30/1985	WS-15	55	0.617	
Trichloroethene (TCE)[1]	7/16/2003	GP-10	20	557	
Vinyl chloride[1]	7/16/2003	GP-8	25	0.105	
Xylenes (total)	7/16/2003	GP-10	20	358	Oil
Inorganics					
Cyanide (total)	8/6/2001	P-8	2	15,000	
Aluminum	11/17/2005	RP-11	7.5	8,780	
Antimony	8/19/2001	Fab 2 OF	0.2	3.3	
Arsenic	8/21/2001	S-4	0.2	4.4	
Cadmium	8/14/2001	P-2	22.5	1.04	
Calcium	11/17/2005	RP-11	7.5	3,630	
Chromium	9/19/2001	Fab 2 OF	0.2	30.9	
Cobalt	6/19/2001	Catch bsn	-	21.3	
Copper	9/19/2001	Fab 2 OF	0.2	286	
Iron	8/21/2001	S-4	0.2	38,000	
Lead	8/14/2001	P-2	22.5	75.3	
Magnesium	11/17/2005	RP-11	7.5	2,590	
Manganese	8/21/2001	S-4	0.2	758	
Mercury	-	-	-	not detected	
Nickel	8/14/2001	P-2	22.5	45.3	
Potassium	11/17/2005	RP-11	7.5	525	
Selenium		-	-	not detected	
Silver	6/19/2001	Catch bsn	-	1.3	
Sodium	11/17/2005	RP-11	7.5	327	
Titanium	8/21/2001	S-1	0.2	1,920	
Vanadium	8/21/2001	S-4	0.2	102	
Zinc	9/19/2001	Fab 2 OF	0.2	846	

1= chlorinated solvents are associated with Siltronic (non-MGP-related) spent TCE release.

3.5.3 DNAPL

Petroleum-related DNAPL is present in the subsurface at the Siltronic site, with DNAPL present both within the surficial fill WBZ, and in a more isolated area (extreme northern portion of the property), within the underlying alluvial WBZ. The occurrence of the DNAPL on the northern portion of the Siltronic property is the result of MGP residual management activities at the former northern lowland portion of the site as described in Section 3.1.

In contrast to the northern portion of the site, the occurrence of DNAPL elsewhere on the site appears limited to the surficial fill and is more patchy and limited. DNAPL in these locations appears to be a function of incorporation of MGP residuals into site fill and/or import of impacted fill onto the property (HAI, 2005d).

Figures 20 through 22 depict the estimated extent of DNAPL (liquid) and tar (solid to semi-solid) within the surficial fill (Figure 20) and upper and intermediate depth horizons within the alluvial unit (Figures 21 and 22) at the Siltronic and Gasco properties. Tables 19 and 20 provide a summary of the visual description of soil core at the Siltronic property leading to the interpretations included in Figures 20 through 22. Available chemical and physical data for the DNAPL at the Siltronic property, as characterized by MFA (2005b), are provided in Appendix B.

A detailed description and evaluation of the presence and extent of DNAPL at the Siltronic property has previously been documented in HAI (2005d), with DEQ attaching comments to the report in correspondence dated May 26, 2006 (DEQ, 2006). With the exception of a few areas at the site, DEQ is in agreement that the lateral and vertical extent of MGP-related DNAPL has been adequately delineated with respect to Willamette River source control, with additional data collection to be focused on source control design needs. As a result, planning for the development and implementation of pilot groundwater and DNAPL-related source control activities immediately north of the Siltronic property between the river and the former tar effluent pond area have been proposed by NW Natural (Anchor 2006a,b). Full scale implementation of source control activities will be based on the results of the pilot activities in conjunction with off-shore characterization/plume delineation activities (Anchor 2006c) presently occurring offshore of the Siltronic and Gasco properties.

A general summary of DNAPL-related conditions at the Siltronic property is as follows:

- Free-phase (e.g., likely present at levels greater than residual saturation) DNAPL has been identified within the surficial fill WBZ at the north-central portion of the former lowland portion of the site (well WS-10-27), where several feet of DNAPL have accumulated.

- Evidence of DNAPL within the surficial fill is indicated elsewhere within the surficial fill unit, primarily in the northern former lowland area, but also as zones apparently mixed into the fill at other portions of the site (Figure 20).

- Free-phase DNAPL identified within the alluvial WBZ has been limited to the northern corner of the property at a location proximate to the western end of the Fab 1 structure, where DNAPL has been observed in soils as deep as 74 feet bgs (WS-16) and is present as a free-phase (6 to 10 foot accumulation) at the base of a well screened between 70 to 85 feet bgs (WS-15-85). Silt layer(s) within the alluvial WBZ appear to be controlling vertical and lateral DNAPL movement, with the DNAPL at these locations having likely migrated from areas beneath the adjacent effluent tar pond at Gasco, and/or from beneath the northern portion of the former 400-foot wide effluent pond overflow area.

- DNAPL has been identified at deeper intervals between the former overflow area and the Willamette River at the extreme northern corner of Siltronic, where several feet of DNAPL has been identified at the base of two deep wells (WS-11-125 and WS-14-125), screened well below the base of the river between an elevation of -75 and -90 feet msl. Because the depth of the DNAPL at the WS-11 and WS-14 locations is below the base of the river (-40 feet msl), migration to the river is not a concern.

- Observation of soil conditions, as well as the resulting groundwater plume distribution, suggests deep penetration of DNAPL may have occurred in proximity to the Gasco/Siltronic property boundary (B-32 and B-33) and/or near the western end of the Fab 1 structure (WS-15; WS-16, B-1-8), where the silt unit is relatively lower in elevation and is less thick.

- DNAPL identified in borings installed at the southern and western portion of the Siltronic property appear to be the result of the incorporation of oily soils into the fill during site filling activities. Data do not indicate DNAPL migration to the underlying alluvial WBZ. Additional delineation and characterization of DNAPL within the fill at these areas is needed to determine extent and mobility potential.

- DEQ has concluded that the lateral and vertical extent of DNAPL has been delineated and characterized sufficiently to move the project forward to source control and that data do not suggest large zones of DNAPL migration between the uplands and the river. However, DEQ has stated their opinion (DEQ, 2006) that thin stringers or lenses of DNAPL may exist within the upper portions of the alluvial WBZ at the northern portion of Siltronic (north of boring P-5) that may not be have been identified by visual core evaluation. This possibility is being evaluated as part of the off-shore investigatory work presently occurring off-shore of the northern Siltronic property and the full extent of the Gasco shoreline, with groundwater/DNAPL pilot source control work proposed immediately north of the Siltronic property line, with ultimate expansion of controls onto the Siltronic property.

3.5.4 Surface Water and Catch Basin Sediments

Stormwater samples from the Fab 1 outfall sampling point, and from the end of pipe at the Fab 2 and Administration Building outfalls, were collected by HAI as previously reported in HAI (2005b) and Anchor (2003). These results are summarized in Table 15, and summarized below:

- Benzene, PAHs, SVOCs, and cyanide were not identified in stormwater samples collected from any of the three outfalls. With regard to detected VOCs, acetone [34.4 parts per billion (ppb)] and chloroform (2.69 ppb) – neither COIs with regard to MGP residuals, were identified in the stormwater sample collected at the Fab 1 sampling outfall.

- Metals, which are naturally-occurring in the environment, were identified in unfiltered water samples collected from all three stormwater outfall sampling locations. Of the metals identified, only zinc was identified at concentrations greater than screening values (Anchor 2003).

- Catch basin soils/sludge, which contain soils derived from localized overland erosion, as well as stormwater impacted by routine above-ground operations (e.g., oil and fuel drippage from vehicle parking lot and paved drive areas), contained oil-range petroleum hydrocarbons (9,000 ppm), low levels of total PAHs (2.6 ppm), and low levels of toluene (10 ppm) and cyanide (0.4 ppm). Other than possible contribution of zinc, the catch basin solids did not appear to adversely impact effluent from the outfalls.

Due to the potential for site-related COIs to migrate from the Siltronic property to Doane Creek on BNSF property immediately southwest of the site via shallow groundwater discharge or bank erosion, evaluation of seasonal effluent discharge from the Doane Creek drainage area during 2005 was previously documented in HAI (2006). Doane Creek discharges to the Willamette River via an underground culvert that opens to the river embankment at City Outfall 22C, located immediately upriver of the Siltronic property. Sampling locations related to the Doane Creek/Outfall 22C evaluation is included in Figure 23. A summary of the results from the Doane Creek/Outfall 22C investigation activities (Tables 16 through 18) follows:

- Observations of estimated discharge rates at the Outfall 22C location relative to observed surface water flow into the up-stream end of the Outfall 22C culvert pipe suggests that shallow groundwater may be seeping into the culvert pipe in proximity to the southern end of Siltronic/northern end of Rhone-Poulenc properties. Groundwater seepage into the buried culvert leading to Outfall 22C appeared to make up the majority of flow at the outfall during the late Summer / early Fall sampling event when overall groundwater levels are low and stormwater is otherwise not entering the system.

- PAHs were identified at all culvert locations and at the Outfall 22C location during one or more of the sampling events, indicating that there are multiple sources of low level PAHs to surface waters within the basin, including, as observed during the June 2005 storm-related sampling at the Tualatin Hills drainage culvert, runoff from right-of-ways/commercial or industrial properties to the west of NW St. Helens Road.

- The greatest PAH concentrations within surface water were identified within standing water at the Koppers drainage culvert, although it was only during the storm event sampling in June that this outfall appeared

to be contributing to flow within Doane Creek / City Outfall 22C. In addition to short-term response to storm runoff, this culvert would be a source of water to Outfall 22C primarily during the batch stormwater discharge events conducted by Koppers.

- Certain PAHs and cyanide, identified at concentrations slightly greater than SLVs within water discharged from Outfall 22C, were greatest during the early Fall, when a majority of flow is suspected as being derived from groundwater infiltration adjacent to the Outfall 22C culvert. However, the overall flow rate from Outfall 22C during the low groundwater/no rain event was significantly less than during the high groundwater/no rain and high groundwater/rain events resulting in lower mass loading to the river from the discharge.

- No VOCs were identified at any sampling station at any time during 2005, with exception of chlorobenzene, which was identified at a concentration well below SLVs, at the NDL location in February 2005.

- Arsenic and manganese were the only metals identified within water discharging from Outfall 22C during any of the 2005 sampling events that exceeded an SLV. The identified concentrations of these metals were fairly consistent through time and between sampling locations, with lower concentrations in the mainly undeveloped Tualatin Hills drainage, suggesting the identified concentrations may be typical of overall urban runoff.

- Copper and various PAHs greater than SLVs were identified within sediments at the immediate upstream end of the Outfall 22C culvert (the NDP), while no PAHs or other constituents were identified within sediments at concentrations greater than SLVs within the Doane Creek channel itself. The higher constituent concentrations at the NDP relative to the Doane Creek Channel may be attributable to the lower energy/depositional environment at this location where it backs up prior to discharge into the culvert pipe.

3.5.5 Air

NW Natural has completed air quality studies at the Siltronic site (Summer and Winter seasons) to evaluate the potential volatilization of aromatic hydrocarbons (e.g., benzene, toluene, ethylbenzene, xylene [BTEX] and naphthalene) present in soil or groundwater to indoor air at the property. Air

sampling stations were located across the property, and included pressurized and non-pressurized structures above areas with the greatest soil and groundwater impacts (e.g., above the northern and northwestern portions of the site – corresponding to the former 400-foot wide effluent pond overflow area). All air sampling activities, locations, and results related to these activities have previously been reported to DEQ (HAI, 2005b,d).

Results of NW Natural's air sampling activities do not indicate the presence of aromatic hydrocarbons at levels that would suggest contribution from on-site soil and/or groundwater impacts (HAI, 2005b,d). Benzene was the only COI to be identified in air samples at concentrations exceeding DEQ Risk-Based Concentrations (RBCs). Because of the relatively small range and low concentrations of benzene detected in air samples, no correlation was identified between sample locations and possible sources of benzene related soil and/or groundwater impact. All identified benzene concentrations were below Oregon OSHA PELs, NIOSH, and ACGIH guidelines, and were within the range of concentrations identified at DEQ north and northwest Portland air monitoring stations, which collect samples of ambient urban air.

Siltronic has also completed an air quality study within the Fab 1 structure to evaluate both potential TCE impacts to indoor air, as well as possible MGP-related impacts to indoor air (MFA, 2004a). Air sampling stations were located within that portion of the Fab 1 structure located above the former 400 foot-wide effluent pond overflow area. Results of this study, as provided in MFA (2004a), did not identify the presence of MGP COIs in indoor air at concentrations greater than DEQ RBCs.

Based on the completed studies, personnel at the Siltronic property are not being exposed to unsafe levels of MGP-related COIs. The air pathway does not appear to be of concern, and further evaluation of this pathway is not warranted.

3.6 Potential Contaminant Transport Pathways and Exposure Routes

The Siltronic property is occupied entirely by an industrial facility. Figures 24 and 25 diagram the potential exposure pathways for the human health and ecological conceptual site models. The significance of the identified potentially complete exposure pathways will be assessed as part of the human health and ecological risk assessments. The air pathway, although identified as potentially complete, has been assessed previously by HAI (2005b,d) and MFA (2004a), with results indicating that this potential pathway is not significant.

Figure 24 shows that there are three general types of human populations that could have the potential for current or reasonably likely future exposures to Site chemicals:

- On-site workers expected to be present on a routine basis
- On-site excavation or construction workers potentially present on a non-routine, short-term duration basis.
- General public that may periodically visit the Site for business purposes or gain unauthorized access to the site on a one-time or irregular basis (i.e., trespasser).

Groundwater impacts are present within both the surficial fill WBZ and the alluvial WBZ at portions of the Siltronic property. The groundwater gradient for the alluvial WBZ is toward the Willamette River, while a groundwater divide exists within the shallow surficial fill WBZ – with gradients both to the northeast towards the Willamette River, and to the southwest towards Doane Creek, which is a man-made ditch (open and hard-piped). Doane Creek discharges to the Willamette River immediately south of the site through a culvert at City of Portland Outfall 22C (Figure 23). Site surface water runoff enters the Willamette River via stormwater outfalls and is anticipated to continue to do so in the future.

With exception of surface water recharge, no existing or reasonably likely future beneficial use of groundwater exists at or within proximity to the Siltronic property (Anchor 2004 and MFA 2005a) and as such groundwater usage-related exposures within the known Locality of Facility (e.g., Gasco/Siltronic properties) are not reasonably likely. The down-gradient limit of groundwater impact beyond the Willamette River shoreline has not

been delineated. The LOF, and potential groundwater exposure pathways, will be re-evaluated as data regarding the lateral limits of the groundwater plume are delineated in that direction.

The southern and southeastern areas of the property are presently undeveloped, generally unpaved, and characterized by native and non-native shrubs and trees. This area of the site may represent potential exposure of terrestrial organisms to shallow surface soil as shown on Figure 25. General types of ecological populations that could have the potential for current or reasonably likely future exposures to Site chemicals in shallow soils are terrestrial plants (foliar and root uptake) and animals (dermal and ingestion uptake). With regard to surface water, off-site terrestrial and aquatic animals may have current or reasonably likely future exposures to Site chemicals from uptake of surface water in Doane Creek or the Willamette River.

3.7 Exposure Scenarios

As shown on Figure 24, the following potential upland human health exposure scenarios may be present at the Site:

1. Occupational (worker, visitor, trespasser)
    a. Incidental ingestion of soil
    b. Dermal contact with soil
    c. Outdoor inhalation of airborne chemicals (dust and volatiles) from soils and groundwater
    d. Indoor inhalation of airborne volatile chemicals from soils and groundwater
2. Excavation Worker
    a. Incidental ingestion of soil
    b. Dermal contact with soil
    c. Inhalation of airborne chemicals (dust and volatiles) from soils and groundwater
    d. Dermal contact with groundwater (where present at shallower than 12 feet bgs).

Groundwater is not and will not be used on the Siltronic site for any purpose (MFA, 2005a). Therefore, the groundwater route to industrial workers is incomplete, with exception of volatilization of chemicals from uppermost groundwater (surficial fill WBZ) through soils to the ground surface. Groundwater exposure to excavation workers via dermal contact is a potential exposure pathway at portions of the site where groundwater occurs above a depth of 12 feet bgs. The assumed excavation depth of 12 feet bgs is consistent with that as requested by DEQ for evaluation of the potential excavation worker exposure pathway at the adjacent Gasco site (Eric Blischke to Bob Wyatt, March 26, 2001).

As shown on Figure 25, the following potential upland ecological exposure scenarios may be present at the Site:

1. Foliar and root uptake (plants) or dermal and ingestion uptake (terrestrial animals) of chemicals in surface soils (upper 3 feet)

2. Foliar and root uptake (plants) or dermal and ingestion uptake (terrestrial and aquatic animals) of chemicals in surface water (Doane Creek and Willamette River)

3. Uptake by respiration of volatilized airborne chemicals

4. Secondary uptake (food web) by ingestion of plants and/or animals

There are no surface water features on the site, so no on-site human health or ecological exposure via this route is expected. A possible complete exposure route may exist with regard to off-site surface water features, including Doane Creek and the Willamette River. Potential exposure routes related to the Willamette River water and sediments are being addressed in the Portland Harbor RI/FS.

4.0 ADDITIONAL DATA NEEDS

Based on the existing site characterization and the CSM as summarized herein, additional data needs have been identified such that RI objectives may be achieved. These additional data needs are described below.

4.1.1 Groundwater

- The lateral extent of petroleum and cyanide impacts to groundwater beneath the river at the northern portion of the Siltronic property (former lowland area) have not been delineated in the down-gradient direction off-shore to the northeast, and it is not clear what the groundwater discharge/recharge regime may be with regard to this plume further into the main channel. Data needs with respect to off-shore plume delineation and source control design are presently being addressed as part of Gasco / Siltronic Groundwater Source evaluation activities (Anchor, 2006c), and Source Control Pilot Study activities (Anchor, 2006a,b), and so are not addressed further herein.

- Additional groundwater quality data acquisition related to COIs within the surficial fill WBZ are necessary adjacent to the western and southern property boundaries of Siltronic such that evaluation of potential groundwater discharge to Doane Creek and/or to the buried culvert leading to Outfall 22C may be conducted.

- Additional groundwater quality data for COIs within the surficial fill WBZ and the alluvial WBZ within the eastern portion of the property (parking lot and undeveloped areas), and proximate to the western corner of the property (wastewater treatment plant area) are necessary to supplement the current understanding of COI distribution at the site.

- Although total cyanide data are available in groundwater across portions of the site, free cyanide data are not. Groundwater samples from select existing permanent groundwater monitoring wells at the Siltronic property will be collected to be analyzed for free cyanide as needed to supplement the existing understanding of nature and extent.

4.1.2 Soil

- Based on potential exposure pathways, there is a need for additional COI data collection across the site to support risk assessment activities related to exposure to COIs within surface soils (upper 3 feet bgs-site worker and ecological) and subsurface soils (upper 12 feet bgs – excavation worker).

- Several soil sampling locations should be selected to confirm previous total cyanide sampling results (e.g., P-4, P-8 and embankment at the Fab 2 outfall).

- Although a visual survey of embankment soils along Doane Creek has not resulted in the identification of locations with potential MGP residual incorporation or impact, COI data are not available with regard to potentially-erodable soils along Doane Creek. As such, samples of potentially-erodable surface soils along the embankment for Doane Creek should be collected for characterization of COI presence and concentration.

- In addition to COI data within the upper 12 feet bgs, visual characterization and field screening of the full thickness of surficial fill, with identification of the top of the silt unit across the site, will benefit the nature and extent evaluation of potential MGP residuals, as well as enhancements to the hydrogeological CSM. Soil samples from below a depth of 12 feet bgs may be selected for COI analysis if core screening suggests the presence of possible MGP residuals, and assuming additional characterization of these residuals would be of benefit with regard to potential source characterization.

4.1.3 DNAPL

- Additional investigation to delineate the extent of DNAPL and evaluate its potential mobility is warranted. Soil characterization activities as described above in Section 4.1.2 will be used to describe the nature and presence of DNAPL within the surficial fill across the site, including the perimeter of the property adjacent to Doane Creek and the Doane Creek/Outfall 22C buried culvert. DNAPL saturation and mobility testing of select soil core is warranted to support evaluation of relative DNAPL levels (% void space filled) and mobility potential.

- The presence or absence of DNAPL at the former apparent tar disposal excavation below the eastern end of the Fab 1 structure should be evaluated.

- Evaluation of the presence and nature of DNAPL should be conducted near the Willamette River shoreline within the surficial fill at a location upland from the former “dredging-induced sheen” (e.g., GP-33, P-4, SIL-01 location), as well as at the location of the former Western Transportation operation (e.g., P-7).

4.1.4 Surface Water

As summarized in Section 3.4.4, COIs within water discharged from city Outfall 22C (Doane Creek discharge) show seasonal variation in concentration, with exceedances of screening levels at the outfall having been identified. Potential COI pathways to Doane Creek that require additional evaluation include: 1) evaluation of shallow groundwater quality adjacent to Doane Creek and the buried culvert leading to Outfall 22C; 2) quality of erodable bank soils; and 3) evaluation and/or control of effluent discharges to Doane Creek from the Koppers, Inc. lease portion of the adjacent Gasco site. Items 1 and 2 are identified as data gaps in Sections 4.1.1 (groundwater) and 4.2.1 (soil). The Koppers effluent discharge pathway is proposed for sampling in the Gasco Source Control Screening and Data Gaps Report (Anchor 2006) recently submitted to DEQ as part of source control evaluation activities at the NW Natural Gasco property and is not included herein.

4.1.5 Air

Available data have been sufficient to document that this potential exposure pathway is not significant. No additional air quality characterization data needs have been identified.

5.0 RI OBJECTIVES AND APPROACH

NW Natural's proposed approach to the RI activities at the Siltronic portion of the NW Natural Site, including RI objectives and the framework / approach for data collection concerning potentially complete and significant pathways, are provided below.

5.1 RI Objectives

The following are RI objectives provided in the Voluntary Agreement for the Gasco Site (DEQ No. WMCVC-NWR-94-13), as amended in the First Addendum, effective July 19, 2006.

- Determine the magnitude, nature, and extent of apparent MGP waste-related contamination at the NW Natural Site [defined to include the Gasco property (7900 NW St. Helens Road) and the Siltronic property (7200 NW Front Avenue) – to the extent that impacts attributable to MGP operations at the Gasco site may be present on the Siltronic property]. The investigation shall focus on, but not be limited to, petroleum-related contaminants such as volatile aromatic hydrocarbons, PAHs, and inorganic contaminants such as metals, cyanide, and hydrogen sulfide.
- Identify hazardous substances that have been released to the environment,
- Determine the full nature and extent of hazardous substances in affected media on and off-site,
- Determine the distribution of hazardous substance concentrations,
- Determine the direction and rate of migration of hazardous substances,
- Identify migration pathways,
- Identify the environmental impact and risk to human health and/or the environment,
- Develop the information necessary to select a remedial action,
- Identify hot spots of contamination, if any, at the facility.

5.2 Characterization Approach

The following sections describe the components of characterization activities related to each media. Details regarding specific sampling locations, scope of work, methodologies, and analytical testing, will be included within the RI Work Plan. Preliminary or scoping level sampling locations are depicted on Figure 26.

5.2.1 Soil Characterization

- Relative to the potential mixing of MGP residuals into fill across the site, additional COI data relative to surface soils (upper 3 feet bgs) and subsurface soils (upper 12 feet bgs) will be collected. Due to the heterogeneous nature of the source being evaluated (possible MGP residuals mixed into fill), soil sampling activities will occur on a pre-selected grid pattern to be established at the site. Soil sampling will occur using truck-mounted direct push equipment, with collection of continuous soil core from top to bottom of each boring. All borings will be advanced at a minimum of through the entire thickness of surficial fill, terminating within the upper several feet of the underlying silt/alluvial zones. Select boring locations will be advanced with the use of dual tube methodology through the silt unit to evaluate conditions within the silt/alluvial zones.

  From the above-described borings, one surface soil sample (upper 3 feet bgs) and one subsurface soil sample (upper 12 feet bgs) will be selected for laboratory analysis of COIs, with specific depth selection to be based on direct observation/field screening results. Follow-up testing at select locations, using total petroleum hydrocarbon (TPH) testing methods, may be used to provide data concerning vertical delineation of impacts.

- In addition to sampling locations based on a grid layout, a deep push probe boring location will be advanced adjacent to the eastern end of the Fab 1 structure to evaluate subsurface conditions proximate to the former tar-containing excavation (B-101-8 or B-102-8 vicinity). Several other boring locations predominantly near the western (wastewater treatment plant) corner and the southern/eastern (parking lot and undeveloped areas) portions of the property will be selected from the gridded borings to be advanced into the upper alluvial WBZ to facilitate

description of subsurface conditions in these areas and for the collection of alluvial WBZ groundwater data (Section 5.2.2).

- Soil samples will be collected from a depth of 9.5 feet and 2 feet at the former P-5 and P-8 locations, respectively. These locations and depths correspond to samples where total cyanide was previously detected at relatively elevated concentrations (greater than 8,000 ppm). Samples from the same locations and depths will be collected in an effort to replicate previous total cyanide testing results.

- Samples of river embankment soils will be collected from the Fab 2 area outfall location to replicate previous findings. Soil samples will similarly be collected, assuming access beneath the rip-rap allows, along the embankment immediately up-river and immediately down-river of the Fab 2 outfall location.

- Samples of potentially-erodable surface soils along the embankment for Doane Creek will be collected for characterization of COI presence and magnitude.

5.2.2 Groundwater Characterization

- Groundwater samples will be collected from temporary well points constructed within push probe borings at select locations in the grid pattern described above. Groundwater samples from the surficial fill, to be analyzed for the full list of COIs, will be collected from locations adjacent to Doane Creek and the buried culvert leading to City Outfall 22C to evaluate the potential groundwater pathway to Doane Creek/Willamette River. Select locations within the surficial fill and underlying alluvial WBZ will also be selected for groundwater sample collection, to assist in plume delineation at the east-central (parking lot and undeveloped) and the western (wastewater treatment plant) portions of the site.

- Certain COIs, such as free cyanide, have not been analyzed to date at any groundwater monitoring well located at the Siltronic property. Assuming access is provided, samples from select existing permanent groundwater monitoring wells at the Siltronic property will be collected to be analyzed for COIs as needed to supplement the existing understanding of nature and extent.

- Using the results of the temporary well point sampling activities, a second phase of investigation, to include installation of monitoring wells and/or piezometers at the site, may be proposed. Two surficial fill WBZ wells, as described in Section 5.2.3, are proposed for installation during the first phase of investigation.

5.2.3 DNAPL

- Borings as described above in Section 5.1.2 will be used to describe the presence and nature of DNAPL within the surficial fill across the site, including the perimeter of the property adjacent to Doane Creek and the Doane Creek/Outfall 22C buried culvert. Core screening for the presence of DNAPL or other potential MGP residuals, will be conducted on soils from all push probe borings. Intervals of undisturbed core will be collected from various portions of the site, based on field screening suggestive of the presence of DNAPL, for initial and residual DNAPL saturation testing.

- Uncertainties regarding the presence or absence of DNAPL near the Willamette River shoreline within the surficial fill at a location upland from the former “dredging-induced sheen” (e.g., GP-33, P-4, SIL-01 location), as well as at the location of the former Western Transportation operation (e.g., P-7) will be evaluated through the installation of surficial fill WBZ wells at these two locations.

5.2.4 Surface Water Characterization

- Surface waters potentially within the LOF relative to MGP COIs include the Willamette River and Doane Creek. Willamette River impacts are being characterized as part of the Superfund investigation conducted by the Lower Willamette Group, with ongoing investigation of groundwater beneath the river adjacent to the Gasco and Siltronic properties presently being conducted by NW Natural. As pilot source control activities move forward, data needs to evaluate design options to effectively control pathways to the Willamette River will be identified and addressed.

- Additional data are necessary to evaluate the nature of possible COI discharge to Doane Creek and to the buried culvert pipe that carries these waters to the Willamette River at the Outfall 22C location. These

additional data collection activities have been proposed herein under Section 5.2.1 (soil) and 5.2.2 (groundwater).

5.3 Schedule

An RI Work Plan will be provided to DEQ for review within 60 days of approval of the RI Proposal as described herein. The RI Work Plan will contain a schedule for completion of the proposed RI components.

6.0 LIMITATIONS AND SIGNATURES

The information presented in this report was collected, analyzed, and interpreted following the standards of care, skill, and diligence ordinarily provided by a professional in the performance of similar services as of the time the services were performed. This report and the conclusions and/or recommendations contained in it are based solely upon research and/or observations, and physical sampling and analytical activities, if any, that were conducted at the Client's request.

The information presented in this report is based only upon activities witnessed by HAI or its contractors, and/or upon information provided to HAI by the Client and/or its contractors. The analytical data presented in this report, if any, document only the concentrations of the target analytes in the particular sample, and not the property as a whole.

Unless otherwise specified in writing, this report has been prepared solely for the use by the Client and for use only in connection with the evaluation of the subject property. Any other use by the Client or any use by any other person shall be at the user's sole risk, and HAI shall have neither liability nor responsibility with respect to such use.

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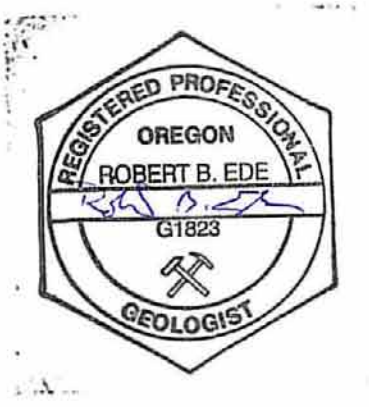
Date November 17, 2006



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8.0 GLOSSARY OF ABBREVIATIONS

AMEC	AMEC Earth & Environment, Inc.
bgs	below existing ground surface
BNSF	Burlington Northern Santa Fe Railroad Company
BTEX	benzene, toluene, ethylbenzene, and xylenes
COIs	contaminants of interest
CRBG	Columbia River Basalt Group
DEQ	Oregon Department of Environmental Quality
DNAPL	dense non-aqueous phase liquid
EPA	U.S. Environmental Protection Agency
HAI	Hahn and Associates, Inc.
LNG	liquefied natural gas
MFA	Maul Foster & Alongi, Inc.
MGP	manufactured gas plant
MSL	mean sea level
NAPL	non-aqueous phase liquid
NPDES	National Pollution Discharge Elimination System
PAHs	polynuclear aromatic hydrocarbons
PG&C	Portland Gas & Coke
ppb	parts per billion
ppm	parts per million
RI	Remedial Investigation
Siltronic	Siltronic Corporation (formerly Wacker Siltronic)
SVOCs	semi volatile organic compounds
TCE	trichloroethene
TPH	total petroleum hydrocarbons
UST	underground storage tank
VOCs	volatile organic constituents
WBZ	water-bearing zone

TABLES

TABLE 1 – Summary of Boring and Monitoring Well Construction

Designation	Type	Installed By	Date Completed	Status	Slot Size	Sand Pack	Well Diameter	Ground Surface	Top of Casing	Boring Depth	Screen Interval		
					(inches)	(Colorado)	(inches)	(feet msl)	(feet msl)	(feet bgs)	(feet msl)	(feet bgs)	(feet msl)
WS-1-22 (MW-1)	MW	CH2M Hill	Apr-85	Active	0.010		2	32	35.18	31.5	0.5	7.0 to 22.0	25.0 to 10.0
WS-2-22 (MW-2)	MW	CH2M Hill	Apr-85	Active	0.010	-	2	32.58	33.67	31.5	1.1	7.5 to 22.0	25.1 to 10.6
WS-3-27 (MW-3)	MW	CH2M Hill	Apr-85	Active	0.010	-	2	34	37.02	41.5	-7.5	12.0 to 27.0	22.0 to 7.0
WS-4-22 (MW-4)	MW	CH2M Hill	Apr-85	Abandoned	0.010	-	2	32.4		41.5	-9.1	6.5 to 21.5	25.9 to 10.9
WS-5-20 (MW-5)	MW	CH2M Hill	Apr-85	Active	0.010	-	2	32.4	37.83	31.5	0.9	5.0 to 20.0	27.4 to 12.4
WS-6-24 (MW-6)	MW	CH2M Hill	Apr-85	Active	0.010	-	2	32.4	36.37	31.5	0.9	9.0 to 24.0	23.4 to 8.4
WS-7-25 (MW-7)	MW	CH2M Hill	Apr-85	Abandoned	0.010	-	2	32.4		41.5	-9.1	10.0 to 25.0	22.4 to 7.4
WS-8-33	MW	HAI	12-Sep-01	Active	0.010	10-20	2	34.54	34.28	33.0	1.5	22.5 to 32.5	12.0 to 2.0
WS-8-59	MW	HAI	12-Sep-01	Active	0.010	10-20	2	34.54	34.16	59.0	-24.5	48.5 to 58.5	-14.0 to -24.0
WS-9-34	MW	HAI	13-Sep-01	Active	0.010	10-20	2	34.84	33.51	34.0	0.8	22.5 to 33.5	12.3 to 1.3
WS-10-27	MW	MFA	6-Sep-03	Active	0.010	10-20	2	35.12	34.829	106.0	-70.9	11.0 to 26.0	24.1 to 9.1
WS-11-125	MW	MFA	3-Oct-03	Active	0.010	10-20	2	33.32	33.207	207.0	-173.7	109.0 to 124.0	-75.7 to -90.7
WS-11-161	MW								33.225			145.0 to 160.0	-111.7 to -126.7
WS-12-125	MW	MFA	21-Sep-03	Active	0.010	10-20	2	34.51	32.770	207.0	-172.5	109.0 to 124.0	-74.5 to -89.5
WS-12-161	MW								34.150			145.0 to 160.0	-110.5 to -125.5
WS-13-69	MW	MFA	11-Oct-03	Active	0.010	10-20	2	34.80	33.150	207.0	-172.2	52.6 to 67.6	-17.8 to -32.8
WS-13-105	MW								34.530			89.0 to 104.0	-54.2 to -69.2
WS-14-125	MW	MFA	9-Jul-04	Active	0.010	10-20	2	33.82	33.620	210.0	-176.2	109.0 to 124.0	-75.2 to -90.2
WS-14-161	MW								33.500			145.0 to 160.0	-111.2 to -126.2
WS-15-85	MW	MFA	23-Jul-04	Active	0.010	10-20	2	34.66	34.210	196.0	-161.3	70.0 to 85.0	-35.3 to -50.3
WS-15-140	MW								34.230			125.0 to 140.0	-90.3 to -105.3
WS-16-125	MW	MFA	5-Aug-04	Active	0.010	10-20	2	34.61	34.340	236.0	-201.4	109.0 to 124.0	-74.4 to -89.4
WS-16-161	MW								34.380			145.0 to 160.0	-110.4 to -125.4

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Designation	Type	Installed By	Date Completed	Status	Slot Size	Sand Pack	Well Diameter	Ground Surface	Top of Casing	Boring Depth	Screen Interval		
					(inches)	(Colorado)	(inches)	(feet msl)	(feet msl)	(feet bgs)	(feet msl)	(feet bgs)	(feet msl)
WS-17-52	MW	MFA	13-Aug-04	Active	0.010	10-20	2	35.48	35.060	122.0	-86.5	41.0 to 51.0	-5.5 to -15.5
WS-17-94	MW								34.990			78.0 to 93.0	-42.5 to -57.5
W-03-I (MW-3)	MW	G&M	25-Jun-90	Active	0.010	10-20	4	34.77		61.5	-26.7	55.0 to 60.0	-20.2 to -25.2
W-03-81	MW	URS	16-Feb-00	Active	0.010	10-20	2			91.5		75.0 to 80.0	
RP-01-31	MW	URS	10-Feb-00	Active	0.010	10-20	2			31.5		25.0 to 30.0	
RP-01-51	MW	URS	9-Feb-00	Active	0.010	10-20	2			51.0		45.0 to 50.0	
RP-01-65	MW	URS	8-Feb-00	Active	0.010	10-20	2			66.0		59.0 to 64.0	
RP-03-26	MW	URS	17-Feb-00	Abandoned	0.010	10-20	2			26.5		20.0 to 25.0	
RP-03-63	MW	URS	17-Feb-00	Abandoned	0.010	10-20	2			64.0		57.4 to 62.4	
RP-03-30R	MW	URS	9-Oct-00	Active	0.010	10-20	2			30.0		23.0 to 28.0	
RP-03-52R	MW	URS	9-Oct-00	Active	0.010	10-20	2			52.0		46.0 to 51.0	
RP-06-30	MW	URS	8-Feb-00	Active	0.010	10-20	2			31.5		24.5 to 29.5	
RP-06-87	MW	URS	7-Feb-00	Active	0.010	10-20	2			88.0		81.0 to 86.0	
RP-07-30	MW	AMEC	22-Apr-02	Active	0.010	10-20	2			30.0		25.0 to 30.0	
RP-07-55	MW	AMEC	22-Apr-02	Active	0.010	10-20	2			55.0		50.0 to 55.0	
RP-07-84	MW	AMEC	22-Apr-02	Active	0.010	10-20	2			85.0		79.0 to 84.0	
RP-07-119	MW	AMEC	30-Apr-02	Active	0.010	10-20	2			119.0		114.0 to 119.0	
RP-11-30	MW	AMEC	2-Dec-05	Active	0.010	10-20	2			40.0		15.0 to 30.0	
RP-11-160	MW	AMEC	1-Dec-05	Active	0.010	10-20	2			160.0		150.0 to 160.0	
RP-11-216	MW	AMEC	29-Nov-05	Active	0.010	10-20	2			216.0		210.0 to 216.0	
P-1	Probe-Upland	HAI	17-Aug-01	Abandoned	-	-	-	33.64	-	64.0	-30.4	24.0 to 28.0	9.6 to 5.6
												54.0 to 58.0	-20.4 to -24.4
P-2	Probe-Upland	HAI	14-Aug-01	Abandoned	-	-	-	33.86	-	100.0	-66.1	28.0 to 32.0	5.9 to 1.9
												54.0 to 58.0	-20.1 to -24.1
												96.0 to 100.0	-62.1 to -66.1

TABLE 1 – Summary of Boring and Monitoring Well Construction

Designation	Type	Installed By	Date Completed	Status	Slot Size	Sand Pack	Well Diameter	Ground Surface	Top of Casing	Boring Depth	Screen Interval		
					(inches)	(Colorado)	(inches)	(feet msl)	(feet msl)	(feet bgs)	(feet msl)	(feet bgs)	(feet msl)
P-3	Probe-Upland	HAI	20-Aug-01	Abandoned	-	-	-	34.74	-	90.0	-55.3	28.5 to 32.5	6.2 to 2.2
												55.0 to 59.0	-20.3 to -24.3
												96.0 to 100.0	-61.3 to -65.3
P-4	Probe-Upland	HAI	10-Aug-01	Abandoned	-	-	-	34.29	-	64.0	-29.7	28.0 to 32.0	6.3 to 2.3
												50.0 to 54.0	-15.7 to -19.7
P-5	Probe-Upland	HAI	13-Aug-01	Abandoned	-	-	-	34.22	-	100.0	-65.8	29.0 to 33.0	5.2 to 1.2
												52.0 to 56.0	-17.8 to -21.8
												96.0 to 100.0	-61.8 to -65.8
P-6	Probe-Upland	HAI	2-Aug-01	Abandoned	-	-	-	35.38	-	64.0	-28.6	20.0 to 24.0	15.4 to 11.4
												32.0 to 36.0	3.4 to -0.6
												46.0 to 50.0	-10.6 to -14.6
P-7	Probe-Upland	HAI	8-Aug-01	Abandoned	-	-	-	34.98	-	64.0	-29.0	21.0 to 25.0	14.0 to 10.0
												58.0 to 62.0	-23.0 to -27.0
P-8	Probe-Upland	HAI	6-Aug-01	Abandoned	-	-	-	34.50	-	86.0	-51.5	28.0 to 32.0	6.5 to 2.5
												50.0 to 54.0	-15.5 to -19.5
												80.0 to 84.0	-45.5 to -49.5
P-9	Probe-Upland	HAI	7-Aug-01	Abandoned	-	-	-	34.84	-	64.0	-29.2	31.0 to 35.0	3.8 -0.2
P-10	Probe-Upland	HAI	3-Aug-01	Abandoned	-	-	-	34.92	-	64.0	-29.1	31.0 to 35.0	3.9 to -0.1
P-11	Probe-Upland	HAI	17-Aug-01	Abandoned	-	-	-	35.05	-	20.0	15.1	- to -	- to -
GP-02-01	Probe-Upland	LTI	19-Mar-02	Abandoned	-	-	-	35.53	-	100.0	-64.5	35.0 to 38.0	0.5 to -2.5
GP-02-02	Probe-Upland	LTI	20-Mar-02	Abandoned	-	-	-	35.21	-	100.0	-64.8	23.0 to 27.0	12.2 to 8.2
												56.0 to 60.0	-20.8 to -24.8
GP-02-03	Probe-Upland	LTI	21-Mar-02	Abandoned	-	-	-	34.38	-	99.5	-65.1	31.0 to 35.0	3.4 to -0.6
												56.0 to 60.0	-21.6 to -25.6
GP-4	Probe-Upland	MFA	30-Sep-02	Abandoned	-	-	-	33.99	-	100.0	-66.0	66.0 to 70.0	-32.0 to -36.0
												96.0 to 100.0	-62.0 to -66.0

TABLE 1 – Summary of Boring and Monitoring Well Construction

Designation	Type	Installed By	Date Completed	Status	Slot Size	Sand Pack	Well Diameter	Ground Surface	Top of Casing	Boring Depth	Screen Interval		
					(inches)	(Colorado)	(inches)	(feet msl)	(feet msl)	(feet bgs)	(feet msl)	(feet bgs)	(feet msl)
GP-5	Probe-Upland	MFA	8-Oct-02	Abandoned	-	-	-	33.25	-	100.0	-66.8	66.0 to 70.0	-32.8 to -36.8
												93.0 to 97.0	-59.8 to -63.8
GP-6	Probe-Upland	MFA	2-Oct-02	Abandoned	-	-	-	35.56	-	100.0	-64.4	72.0 to 76.0	-36.4 to -40.4
												96.0 to 100.0	-60.4 to -64.4
GP-7	Probe-Upland	MFA	4-Oct-02	Abandoned	-	-	-	34.12	-	100.0	-65.9	76.0 to 80.0	-41.9 to -45.9
												96.0 to 100.0	-61.9 to -65.9
GP-8	Probe-Upland	MFA	16-Jul-03	Abandoned	-	-	-	34.80	-	25.0	9.8	20.0 to 24.0	13.1 to 9.1
GP-9	Probe-Upland	MFA	17-Jul-03	Abandoned	-	-	-	34.84	-	25.0	9.8	20.0 to 24.0	13.5 to 9.5
GP-10	Probe-Upland	MFA	16-Jul-03	Abandoned	-	-	-	34.82	-	25.0	9.8	20.0 to 24.0	13.4 to 9.4
GP-11	Probe-Upland	MFA	16-Jul-03	Abandoned	-	-	-	33.04	-	96.5	-63.5	36.0 to 40.0	-4.3 to -8.3
												66.0 to 70.0	-34.3 to -38.3
												92.0 to 96.0	-92.0 to -96.0
GP-12	Probe-Upland	MFA	29-Jun-04	Abandoned	-	-	-	34.46	-	20.0	14.5	15.0 to 19.0	19.5 to 15.5
GP-13	Probe-Upland	MFA	29-Jun-04	Abandoned	-	-	-	34.39	-	20.0	14.4	15.0 to 19.0	19.4 to 15.4
GP-14	Probe-Upland	MFA	30-Jun-04	Abandoned	-	-	-	34.40	-	20.0	14.4	15.0 to 19.0	19.4 to 15.4
GP-15	Probe-Upland	MFA	29-Jun-04	Abandoned	-	-	-	34.65	-	20.0	14.7	15.0 to 19.0	19.7 to 15.7
GP-16	Probe-Upland	MFA	29-Jun-04	Abandoned	-	-	-	34.70	-	25.0	9.7	20.0 to 24.0	14.7 to 10.7
GP-17	Probe-Upland	MFA	29-Jun-04	Abandoned	-	-	-	35.20	-	20.0	15.2	15.0 to 19.0	20.2 to 16.2
GP-18	Probe-Upland	MFA	30-Jun-04	Abandoned	-	-	-	35.14	-	24.0	11.1	20.0 to 24.0	15.1 to 11.1
GP-19	Probe-Upland	MFA	30-Jun-04	Abandoned	-	-	-	34.93	-	20.0	14.9	15.0 to 19.0	19.9 to 15.9

TABLE 1 – Summary of Boring and Monitoring Well Construction

Designation	Type	Installed By	Date Completed	Status	Slot Size	Sand Pack	Well Diameter	Ground Surface	Top of Casing	Boring Depth	Screen Interval		
					(inches)	(Colorado)	(inches)	(feet msl)	(feet msl)	(feet bgs)	(feet msl)	(feet bgs)	(feet msl)
GP-20	Probe-Upland	MFA	19-Jul-04	Abandoned	-	-	-	35.29	-	30.0	5.3	15.0 to 19.0	20.3 to 16.3
												26.0 to 30.0	9.3 to 5.3
GP-21	Probe-Upland	MFA	19-Jul-04	Abandoned	-	-	-	34.10	-	30.0	4.1	16.0 to 20.0	18.1 to 14.1
												26.0 to 30.0	8.1 to 4.1
GP-22	Probe-Upland	MFA	19-Jul-04	Abandoned	-	-	-	34.37	-	30.0	4.4	26.0 to 30.0	8.4 to 4.4
GP-23	Probe-Upland	MFA	19-Jul-04	Abandoned	-	-	-	34.90	-	30.0	4.9	26.0 to 30.0	8.9 to 4.9
GP-24	Probe-Upland	MFA	19-Jul-04	Abandoned	-	-	-	35.65	-	30.0	5.7	26.0 to 30.0	9.7 to 5.7
GP-33	Probe-Upland	MFA	28-Apr-05	Abandoned	-	-	-	32.90	-	203.0	-170.1	36 to 40	-3.1 to -7.1
												58 to 62	-25.1 to -29.1
												90 to 94	-57.1 to -61.1
												110 to 114	-77.1 to -81.1
												150 to 154	-117.1 to -121.1
												201 to 205	-168.1 to -172.1
GP-34	Probe-Upland	MFA	28-Apr-05	Abandoned				***34***	-	28.0	6.0	26 to 30	8.0 to 4.0
GP-35	Probe-Upland	MFA	28-Apr-05	Abandoned				***34***	-	28.0	6.0	26 to 30	8.0 to 4.0
GP-36	Probe-Upland	MFA	3-May-05	Abandoned	-	-	-	32.90	-	207.0	-174.1	36 to 40	-3.1 to -7.1
												58 to 62	-25.1 to -29.1
												90 to 94	-57.1 to -61.1
												108 to 112	-75.1 to -79.1
												148 to 152	-115.1 to -119.1
												205 to 209	-172.1 to -176.1
GP-37	Probe-Upland	MFA	5-May-05	Abandoned	-	-	-	33.40	-	203.0	-169.6	36 to 40	-2.6 to -6.6
												60 to 64	-26.6 to -30.6
												90 to 94	-56.6 to -60.6
												110 to 114	-76.6 to -80.6
												154 to 158	-120.6 to -124.6
												201 to 205	-167.6 to -171.6

TABLE 1 – Summary of Boring and Monitoring Well Construction

Designation	Type	Installed By	Date Completed	Status	Slot Size	Sand Pack	Well Diameter	Ground Surface	Top of Casing	Boring Depth	Screen Interval		
					(inches)	(Colorado)	(inches)	(feet msl)	(feet msl)	(feet bgs)	(feet msl)	(feet bgs)	(feet msl)
SIL-01	Sonic-Upland	AMEC	31-Oct-05	Abandoned	-	-	-	***33***		218.0	-185.0	26.5 to 30.5	6.5 to 2.5
												96.0 to 100.0	-63.0 to -67.0
												126.0 to 130.0	-93.0 to -97.0
												156.0 to 160.0	-123.0 to -127.0
												184.0 to 188.0	-151.0 to -155.0
												212.0 to 217.0	-179.0 to -184.0
SIL-02	Sonic-Upland	AMEC	15-Nov-05	Abandoned	-	-	-	***35***		235.0	-200.0	28.0 to 32.0	7.0 to 3.0
												96.0 to 100.0	-61.0 to -65.0
												126.0 to 130.0	-91.0 to -95.0
												156.0 to 160.0	-121.0 to -125.0
												186.0 to 190.0	-151.0 to -155.0
												214.0 to 216.0	-179.0 to -181.0
SIL-03	Sonic-Upland	AMEC	6-Dec-05	Abandoned	-	-	-	***35***		130.0	-95.0	31.0 to 35.0	4.0 to 0.0
												95.0 to 99.0	-60.0 to -64.0
												110.0 to 130.0	-75.0 to -95.0
SIL-04	Sonic-Upland	AMEC	9-Dec-05	Abandoned	-	-	-	***35***		120.0	-85.0	26.0 to 30.0	9.0 5.0
												70.0 to 74.0	-35.0 -39.0
												80.0 to 89.0	-45.0 -54.0

TABLE 1 – Summary of Boring and Monitoring Well Construction

Designation	Type	Installed By	Date Completed	Status	Slot Size (inches)	Sand Pack (Colorado)	Well Diameter (inches)	Ground Surface (feet msl)	Top of Casing (feet msl)	Boring Depth (feet bgs)	Screen Interval (feet msl)	Screen Interval (feet bgs)	Screen Interval (feet msl)
In-Water Borings													
GP-25	Probe-In Water	MFA	1-Oct-04	Abandoned	-	-	-	1.40	-	151.0	-149.6	0 to 2	1.4 to -0.6
												34 to 36	-32.6 to -34.6
												72 to 74	-70.6 to -72.6
												87 to 89	-85.6 to -87.6
												114 to 116	-112.6 to -114.6
												149 to 151	-147.6 to -149.6
GP-26	Probe-In Water	MFA	6-Oct-04	Abandoned	-	-	-	-8.10	-	128.0	-136.1	0 to 2	-8.1 to -10.1
												28 to 30	-36.1 to -38.1
												58 to 60	-66.1 to -68.1
												81 to 83	-89.1 to -91.1
												108 to 110	-116.1 to -118.1
												126 to 128	-134.1 to -136.1
GP-27	Probe-In Water	MFA	11-Oct-04	Abandoned	-	-	-	-32.10	-	110.0	-142.1	0 to 2	-32.1 to -34.1
												13 to 15	-45.1 to -47.1
												32 to 34	-64.1 to -66.1
												57 to 59	-89.1 to -91.1
												82 to 84	-114.1 to -116.1
												108 to 110	-140.1 to -142.1
GP-28	Probe-In Water	MFA	15-Oct-04	Abandoned	-	-	-	3.40	-	160.0	-156.6	0 to 2	3.4 to 1.4
												34 to 36	-30.6 to -32.6
												72 to 74	-68.6 to -70.6
												87 to 89	-83.6 to -85.6
												114 to 116	-110.6 to -112.6
												158 to 160	-154.6 to -156.6
GP-29	Probe-In Water	MFA	21-Oct-04	Abandoned	-	-	-	-36.60	-	117.0	-153.6	0 to 2	-36.6 to -38.6
												20 to 22	-56.6 to -58.6
												44 to 46	-80.6 to -82.6
												66 to 68	-102.6 to -104.6
												86 to 88	-122.6 to -124.6
												115 to 117	-151.6 to -153.6

TABLE 1 – Summary of Boring and Monitoring Well Construction

Designation	Type	Installed By	Date Completed	Status	Slot Size	Sand Pack	Well Diameter	Ground Surface	Top of Casing	Boring Depth	Screen Interval		
					(inches)	(Colorado)	(inches)	(feet msl)	(feet msl)	(feet bgs)	(feet msl)	(feet bgs)	(feet msl)
GP-30	Probe-In Water	MFA	25-Oct-04	Abandoned	-	-	-	-31.60	-	118.0	-149.6	0 to 2	-31.6 to -33.6
												23 to 25	-54.6 to -56.6
												48 to 50	-79.6 to -81.6
												73 to 75	-104.6 to -106.6
												93 to 95	-124.6 to -126.6
												116 to 118	-147.6 to -149.6
GP-31	Probe-In Water	MFA	27-Oct-04	Abandoned	-	-	-	-36.60	-	113.0	-149.6	0 to 2	-36.6 to -38.6
												20 to 22	-56.6 to -58.6
												44 to 46	-80.6 to -82.6
												67 to 69	-103.6 to -105.6
												87 to 89	-123.6 to -125.6
												111 to 113	-147.6 to -149.6
GP-32	Probe-In Water	MFA	29-Oct-04	Abandoned	-	-	-	-36.10	-	121.0	-157.1	0 to 2	-36.1 to -38.1
												22 to 24	-58.1 to -60.1
												44 to 46	-80.1 to -82.1
												68 to 70	-104.1 to -106.1
												88 to 90	-124.1 to -126.1
												119 to 121	-155.1 to -157.1
GP-38	Probe-In Water	MFA	9-May-05	Abandoned	-	-	-	-38.60	-	1.0	-39.6	0 to 1	-38.6 to -39.6
GP-39	Probe-In Water	MFA	10-May-05	Abandoned	-	-	-	-40.60	-	1.0	-41.6	0 to 1	-40.6 to -41.6
GP-40	Probe-In Water	MFA	10-May-05	Abandoned	-	-	-	-38.10	-	1.0	-39.1	0 to 1	-38.1 to -39.1
GP-41	Probe-In Water	MFA	10-May-05	Abandoned	-	-	-	-39.10	-	3.0	-42.1	0 to 1	-39.1 to -40.1
												2 to 3	-41.1 to -42.1
GP-42	Probe-In Water	MFA	10-May-05	Abandoned	-	-	-	-40.60	-	3.0	-43.6	0 to 1	-40.6 to -41.6
											0.0	2.0 to 3	-42.6 to -43.60
GP-43	Probe-In Water	MFA	11-May-05	Abandoned	-	-	-	-38.1	-	1	-39.1	0 to 1	-38.1 to -39.1
												0 to 1	-38.1 to -39.1
GP-44	Probe-In Water	MFA	11-May-05	Abandoned	-	-	-	-28.6	-	1	-29.6	0 to 1	-28.6 to -29.6
GP-45	Probe-In Water	MFA	11-May-05	Abandoned	-	-	-	-28.6	-	1.0	-29.6	0.0 to 1	-28.6 to -29.6
GP-46	Probe-In Water	MFA	11-May-05	Abandoned	-	-	-	6.4	-	1.0	5.4	0.0 to 1	6.4 to 5.4
GP-47	Probe-In Water	MFA	11-May-05	Abandoned	-	-	-	4.9	-	3.0	1.9	0.0 to 1	4.9 to 3.9
												2.0 to 3	2.9 to 1.9
GP-48	Probe-In Water	MFA	11-May-05	Abandoned	-	-	-	-38.6	-	1.0	-39.6	0.0 to 1	-38.6 to -39.6

TABLE 1 – Summary of Boring and Monitoring Well Construction

Designation	Type	Installed By	Date Completed	Status	Slot Size	Sand Pack	Well Diameter	Ground Surface	Top of Casing	Boring Depth	Screen Interval		
					(inches)	(Colorado)	(inches)	(feet msl)	(feet msl)	(feet bgs)	(feet msl)	(feet bgs)	(feet msl)
GP-49	Probe-In Water	MFA	12-May-05	Abandoned	-	-	-	-40.6	-	87.0	-127.6	0.0 to 1	-40.6 to -41.6
												18.0 to 22	-58.6 to -62.6
												35.0 to 39	-75.6 to -79.6
												50.0 to 54	-90.6 to -94.6
												65.0 to 69	-105.6 to -109.6
												85.0 to 89	-125.6 to -129.6
GP-50	Probe-In Water	MFA	12-May-05	Abandoned	-	-	-	-38.6	-	1.0	-39.6	0.0 to 1	-38.6 to -39.6
GP-51	Probe-In Water	MFA	13-May-05	Abandoned	-	-	-	-34.6	-	3.0	-37.6	0.0 to 1	-34.6 -35.6
												2.0 3	
GP-52	Probe-In Water	MFA	13-May-05	Abandoned	-	-	-	-35.6	-	3.0	-38.6	0.0 to 1	-35.6 to -36.6
												2.0 to 3	-37.6 to -38.6
GP-53	Probe-In Water	MFA	13-May-05	Abandoned	-	-	-	-38.6	-	3.0	-41.6	0.0 to 1	-38.6 to -39.6
												2.0 to 3	-40.6 to -41.6
GP-54	Probe-In Water	MFA		Abandoned	-	-	-	-33.6	-	1.0	-34.6	0.0 to 1	-33.6 to -34.6
GP-55	Probe-In Water	MFA	16-May-05	Abandoned	-	-	-	-35.6	-	5.0	-40.6	0.0 to 1	-35.6 to -36.6
												2.0 to 3	-37.6 to -38.6
												4.0 to 5	-39.6 to -40.6
GP-56	Probe-In Water	MFA	16-May-05	Abandoned	-	-	-	-36.1	-	3.0	-39.1	0.0 to 1	-36.1 to -37.1
												2.0 to 3	-38.1 to -39.1
GP-57	Probe-In Water	MFA	16-May-05	Abandoned	-	-	-	-34.6	-	1.0	-35.6	0.0 to 1	-34.6 to -35.6
GP-58	Probe-In Water	MFA	16-May-05	Abandoned	-	-	-	-40.6	-	1.0	-41.6	0.0 to 1	-40.6 to -41.6
GP-59	Probe-In Water	MFA	17-May-05	Abandoned	-	-	-	-38.1	-	0.0	-38.1	0.0 to 0	-38.1 to -38.1
GP-60	Probe-In Water	MFA	17-May-05	Abandoned	-	-	-	-24.6	-	0.0	-24.6	0.0 to 0	-24.6 to -24.6
GP-61	Probe-In Water	MFA	18-May-05	Abandoned	-	-	-	-39.1	-	5.0	-44.1	0.0 to 1	-39.1 to -40.1
												2.0 to 3	-41.1 to -42.1
												4.0 to 5	-43.1 to -44.1
GP-62	Probe-In Water	MFA	18-May-05	Abandoned	-	-	-	-28.6	-	5.0	-33.6	0.0 to 1	-28.6 to -29.6
												2.0 to 3	-30.6 to -31.6
												4.0 to 5	-32.6 to -33.6
GP-63	Probe-In Water	MFA	19-May-05	Abandoned	-	-	-	-39.6	-	5.0	-44.6	0.0 to 1	-39.6 to -40.6
												2.0 to 3	-41.6 to -42.6
												4.0 to 5	-43.6 to -44.6
GP-64	Probe-In Water	MFA	19-May-05	Abandoned	-	-	-	-34.6	-	5.0	-39.6	0.0 to 1	-34.6 to -35.6
												2.0 to 3	-36.6 to -37.6
												4.0 to 5	-38.6 to -39.6

TABLE 1 – Summary of Boring and Monitoring Well Construction

Designation	Type	Installed By	Date Completed	Status	Slot Size	Sand Pack	Well Diameter	Ground Surface	Top of Casing	Boring Depth	Screen Interval		
					(inches)	(Colorado)	(inches)	(feet msl)	(feet msl)	(feet bgs)	(feet msl)	(feet bgs)	(feet msl)
GP-65	Probe-In Water	MFA	19-May-05	Abandoned	-	-	-	-40.6	-	3.0	-43.6	0.0 to 1	-40.6 to -41.6
												2.0 to 3	-42.6 to -43.6
GP-66	Probe-In Water	MFA	20-May-05	Abandoned	-	-	-	-40.6	-	113.0	-153.6	0.0 to 1	-40.6 to -41.6
												10.0 to 14	-50.6 to -54.6
												25.0 to 29	-65.6 to -69.6
												50.0 to 54	-90.6 to -94.6
												75.0 to 79	-115.6 to -119.6
												111.0 to 115	-151.6 to -155.6
GP-67	Probe-In Water	MFA	23-May-05	Abandoned	-	-	-	-30.6	-	3.0	-33.6	0.0 to 1	-30.6 to -31.6
												2.0 to 3	-32.6 to -33.6
GP--68	Probe-In Water	MFA	23-May-05	Abandoned	-	-	-	-34.6	-	5.0	-39.6	0.0 to 1	-34.6 to -35.6
												2.0 to 3	-36.6 to -37.6
												4.0 to 5	-38.6 to -39.6
GP-69	Probe-In Water	MFA	24-May-05	Abandoned	-	-	-	-35.6	-	5.0	-40.6	0.0 to 0	-35.6 to -35.6
												0.0 to 1	-35.6 to -36.6
												2.0 to 3	-37.6 to -38.6
												4.0 to 5	-39.6 to -40.6
GP-70	Probe-In Water	MFA	24-May-05	Abandoned	-	-	-	-34.6	-	5.0	-39.6	0.0 to 1	-34.6 to -35.6
												2.0 to 3	-36.6 to -37.6
												4.0 to 5	-38.6 to -39.6
GP-71	Probe-In Water	MFA	24-May-05	Abandoned	-	-	-	-38.6	-	3.0	-41.6	0.0 to 1	-38.6 to -39.6
												2.0 to 3	-40.6 to -41.6
GP-72	Probe-In Water	MFA	25-May-05	Abandoned	-	-	-	-43.6	-	44.0	-87.6	0.0 to 1	-43.6 to -44.6
												23.0 to 27	-66.6 to -70.6
												42.0 to 46	-85.6 to -89.6
GP-73	Probe-In Water	MFA	25-May-05	Abandoned	-	-	-	-36.6	-	5.0	-41.6	0.0 to 0	-36.6 to -36.6
												0.0 to 1	-36.6 to -37.6
												2.0 to 3	-38.6 to -39.6
												4.0 to 5	-40.6 to -41.6
GP-74	Probe-In Water	MFA	26-May-05	Abandoned	-	-	-	-39.6	-	23.0	-62.6	0.0 to 1	-39.6 to -40.6
												4.0 to 5	-43.6 to -44.6
												21.0 to 25	-60.6 to -64.6

TABLE 1 – Summary of Boring and Monitoring Well Construction

Designation	Type	Installed By	Date Completed	Status	Slot Size	Sand Pack	Well Diameter	Ground Surface	Top of Casing	Boring Depth	Screen Interval		
					(inches)	(Colorado)	(inches)	(feet msl)	(feet msl)	(feet bgs)	(feet msl)	(feet bgs)	(feet msl)
GP-75	Probe-In Water	MFA	26-May-05	Abandoned	-	-	-	-32.6	-	5.0	-37.6	0.0 to 1	-32.6 to -33.6
												2.0 to 3	-34.6 to -35.6
												4.0 to 5	-36.6 to -37.6
GP-76	Probe-In Water	MFA	27-May-05	Abandoned	-	-	-	-25.6	-	5.0	-30.6	0.0 to 1	-25.6 to -26.6
												2.0 to 3	-27.6 to -28.6
												4.0 to 5	-29.6 to -30.6
GP-77	Probe-In Water	MFA	27-May-05	Abandoned	-	-	-	-34.6	-	0.0	-34.6	0.0 to 0	-34.6 to -34.6
GP-78	Probe-In Water	MFA	27-May-05	Abandoned	-	-	-	-36.1	-	0.0	-36.1	0.0 to 0	-36.1 to -36.1
GP-79	Probe-In Water	MFA	31-May-05	Abandoned	-	-	-	-34.1	-	0.0	-34.1	0.0 to 0	-34.1 to -34.1
GP-80	Probe-In Water	MFA	31-May-05	Abandoned	-	-	-	-15.6	-	32.0	-47.6	0.0 to 1	-15.6 to -16.6
												10.0 to 14	-25.6 to -29.6
												20.0 to 24	-35.6 to -39.6
												30.0 to 34	-45.6 to -49.6
GP-81	Probe-In Water	MFA	31-May-05	Abandoned	-	-	-	-33.6	-	5.0	-38.6	0.0 to 1	-33.6 to -34.6
												2.0 to 3	-35.6 to -36.6
												4.0 to 5	-37.6 to -38.6
GP-82	Probe-In Water	MFA	1-Jun-05	Abandoned	-	-	-	-23.6	-	5.0	-28.6	0.0 to 0	-23.6 to -23.6
												0.0 to 1	-23.6 to -24.6
												2.0 to 3	-25.6 to -26.6
												4.0 to 5	-27.6 to -28.6
GP-83	Probe-In Water	MFA	1-Jun-05	Abandoned	-	-	-	-31.1	-	12.0	-43.1	4.0 to 5	-35.1 to -36.1
												10.0 to 14	-41.1 to -45.1
GP-84	Probe-In Water	MFA	1-Jun-05	Abandoned	-	-	-	-31.6	-	3.0	-34.6	0.0 to 1	-31.6 -32.6
												2.0 to 3	-33.6 to -34.6

AMEC = AMEC Earth & Environmental, Inc.
bgs = below ground surface
bml = below mud line
G&M = Geraghty & Miller, Inc.
HAI = Hahn and Associates, Inc.
LTI = Limno-Tech, Inc.
MFA = Maul Foster & Alongi, Inc.
msl = mean sea level, City of Portland datum
URS = URS Corporation

bold and italics elevation is estimated based on proximate ground surface elevations

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	Other VOCs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (Upland)																			
P-1A	HAI	5237-020318-331	18-Mar-02	24-28	1. U	1. U	1. U	2. U	89.6	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-020318-333	18-Mar-02	54-58	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	3.99	1. U	1. U	1.2 U	U
(duplicate)		5237-020318-334	18-Mar-02	54-58	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	4.19	1. U	1. U	1.2 U	U
P-2	HAI	5237-010816-316	16-Aug-01	28-32	61.2	1. U	1. U	2.3	2.6	1. U	1. U	1. U	1. U	1 U	1. U	1. U	1. U	1.2 U	U
		5237-010816-317	16-Aug-01	54-58	2.1	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1 U	6.4	1. U	1. U	1.2 U	U
		5237-010816-318	16-Aug-01	96-100	117.	41.	4.1	2. U	3.8	1. U	1. U	1. U	1. U	12.6	6,780.	21.9	11,200.	720.	IPB=1.2
P-3	HAI	5237-010821-321	21-Aug-01	28.5-32.5	104.	29.9	10. U	22.3	933.	10. U	10. U	10. U	10. U	10. U	10. U	10. U	10. U	12. U	1,2,4-TMB=23.6
		5237-010821-323	21-Aug-01	55-59	23.6	10. U	10. U	10. U	53.7	10. U	10. U	10. U	10. U	10. U	312.	10. U	10. U	212.	U
		5237-010821-325	21-Aug-01	96-100	21.5	1. U	1. U	1. U	5.82	1. U	1. U	1. U	1. U	1. U	5.99	1. U	1. U	21.2	U
P-4	HAI	5237-010815-309	15-Aug-01	28-32	12.	1. U	1. U	2. U	2.99	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-010815-310	15-Aug-01	50-54	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	453.	4.32	33.3	29.6	U
P-5	HAI	5237-010815-311	15-Aug-01	29-33	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
(duplicate)		5237-010815-312	15-Aug-01	29-33	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-010815-313	15-Aug-01	52-56	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1.33	1. U	1. U	1.2 U	U
		5237-010815-314	15-Aug-01	96-100	1. U	1. U	1. U	2. U	16.6	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
P-6	HAI	5237-010802-300	2-Aug-01	32-36	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-010802-301	2-Aug-01	46-50	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
P-7	HAI	5237-010809-307	9-Aug-01	58-62	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
P-8	HAI	5237-010809-304	9-Aug-01	28-32	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-010809-305	9-Aug-01	50-54	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-010809-306	9-Aug-01	80-84	11.1	10. U	10. U	20. U	20. U	199.	425.	15.1	155.	10. U	10. U	10. U	10. U	21.1	U
P-9	HAI	5237-010816-320	16-Aug-01	31-35	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
GP02-01	LTI	GP02-01	20-Mar-02	35-38	3.25	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	85.3	1. U	1. U	2.01	U
		GP02-01 DUP	20-Mar-02	35-38	3.48	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	88.9	1. U	1. U	2.3	U
GP-02-02	LTI	GP02-02	20-Mar-02	23-27	4,970.	1,000. U	1,000. U	2,000. U	9,200.	1,000. U	1,000. U	1,000. U	1,000. U	1,000. U	21,500.	1,000. U	1,000. U	1,200. U	U
			21-Mar-02	56-60	1,060.	250. U	250. U	500. U	2,160.	250. U	250. U	250. U	250. U	250. U	57,900.	250. U	21,000.	300. U	U
			21-Mar-02	96-100	122.	47.8	43.1	31.4	302. E	1. U	1. U	1. U	1. U	171. E	975. E	1. U	575,000.	25.4	1,2,4-TMB=2.92 DCDFM=192 E
GP-02-03	LTI	GP02-03	21-Mar-02	31-35	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	4.29	1.2 U	U
			22-Mar-02	56-60	2.94	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	101.	1. U	33.4	204.	U

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	Other VOCs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (Upland)																			
GP-4	MFA	GP4-W-68.0	27-Sep-02	66-70	7.1	0.5 U	0.5 U	1.4	2. U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	21.	0.5 U	0.2 U	1.4	U
		GP4-W-98.0	30-Sep-02	96-100	87.	0.5 U	0.5 U	0.5 U	2. U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	21.	0.5 U	0.6	9.1	U
GP-5	MFA	GP5-W-68.0	7-Oct-02	66-70	22.	0.5 U	0.5 U	0.5 U	2. U	0.5 U	0.5 U	0.5 U	0.5 U	2.6	320.	1.5	2.6	54.	1,1-DCA=0.79
		GP5-W-95.0	8-Oct-02	93-97	210.	25. U	25. U	25. U	100. U	25. U	25. U	25. U	25. U	36.	12,000.	29.	12,000.	2,000.	U
GP-6	MFA	GP6-W-74.0	1-Oct-02	72-76	7.9	0.5 U	0.5 U	0.5 U	2. U	0.5 U	0.5 U	0.5 U	0.5 U	2.1	230.	3.7	360.	47.	U
		GP6-W-98.0	1-Oct-02	96-100	220.	25. U	25. U	25. U	100. U	25. U	25. U	25. U	25. U	39.	16,000.	39.	2,500.	2,700.	U
		GP-DUP	1-Oct-02	96-100	200.	25. U	25. U	25. U	100. U	25. U	25. U	25. U	25. U	36.	16,000.	39.	2,400.	2,600.	U
GP-7	MFA	GP7-W-78.0	3-Oct-02	76-80	35.	13. U	13. U	13. U	50. U	13. U	13. U	13. U	13. U	23.	6,900.	15.	1,000.	440.	U
		GP7-W-98.0	4-Oct-02	96-100	38.	13. U	13. U	13. U	50. U	13. U	13. U	13. U	13. U	36.	23,000.	23.	250.	6,300.	U
GP-8	MFA	GP8-W-24.0	16-Jul-03	20-24	1,900.	548.	28.1	358.	8,430.	U	U	U	U	10.9	1,330.	2.	616.	4.44	U
GP-9	MFA	GP9-W-24.0	17-Jul-03	20-24	1,270.	181.	26.4	106.9	6,990.	U	U	U	U	26.8	6,360.	11.7	273.	9.23	U
		GP9-W-24.0-Dup	17-Jul-03	20-24	1,020.	185.	28.2	113.	8,290.	U	U	U	U	30.6	5,530.	13.3	287.	8.49	U
GP-10	MFA	GP10-W-24.0	16-Jul-03	20-24	1,120.	340.	328.	302.	5,930.	U	U	U	U	46.7	3,590.	18.8	8.	8.75	U
GP-11	MFA	GP11-W-40.0	14-Jul-03	36-40	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
		GP11-W-70.0	15-Jul-03	66-70	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
		GP11-W-96.0	15-Jul-03	92-96	0.41	U	U	U	0.77	63.9	105.	U	U	U	U	U	0.62	0.46	U
GP-12	MFA	GP12-W-17	29-Jun-04	15-19	5.4	0.2 U	0.57	0.4 U	4.23	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	1.38	0.3 U	0.44	1.02	U
GP-13	MFA	GP13-W-17	29-Jun-04	15-19	1.42	0.43	1.24	0.22	13.1	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.78	0.3 U	0.41	0.2 U	U
GP-14	MFA	GP14-W-17	30-Jun-04	15-19	45.	4.86	2.65	8.97	14.6	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.51	0.3 U	0.75	0.2 U	U
GP-15	MFA	GP15-W-17	29-Jun-04	15-19	31.1	28.3	0.52	79.6	202.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.55	0.3 U	0.2 U	0.2 U	1,2,4-TMB=23.8 1,3,5-TMB=6.05 IPB=5.37 n-Butylbenzene=0.51 n-Propylbenzene=1.28
GP-16	MFA	GP16-W-22	29-Jun-04	20-24	119.	11.2	29.8	22.79	115.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=4.67 1,3,5-TMB=1.17 IPB=1.98 n-Propylbenzene=0.51 Styrene=0.63
GP-17	MFA	GP17-W-17	29-Jun-04	15-19	1,550.	456.	102.	650.	8,180.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Acetone=34.8 1,2,4-TMB=108 1,3,5-TMB=36.4 IPB=33.2 n-Propylbenzene=5.92

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (Upland)																			
GP-18	MFA	GP18-W-22	30-Jun-04	20-24	296.	80.9	58.5	150.3	661.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=20.8 1,3,5-TMB=10.9 IPB=10.8 n-Butylbenzene=0.41 n-Propylbenzene=2.08 4-IPT=0.7
GP-19	MFA	GP19-W-17	30-Jun-04	15-19	2,870.	709.	30.8	521.	7,410.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	1.34	0.3 U	0.78	0.6	1,2,3-TCP=0.850 1,2,4-TMB=110 1,3,5-TMB=39.6 IPB=43.8 n-Propylbenzene=9.8 4-IPT=7.04 tert-Butylbenzene=0.67
GP-20	MFA	GP20-W-18	19-Jul-04	15-19	224.	216.	13.2	208.	2,290.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=87.9 1,3,5-TMB=19.9 IPB=23.9 n-Propylbenzene=4.15 4-IPT=3.24
		GP20-W-28	19-Jul-04	26-30	1,550.	89.5	5.07	60.5	1,390.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=9.13 1,3,5-TMB=5.27 IPB=9.09 n-Butylbenzene=1.29 n-Propylbenzene=5.21 4-IPT=4.52
GP-21	MFA	GP21-W-18	19-Jul-04	16-20	1,020.	113.	62.8	171.7	2,090.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=41.0 1,3,5-TMB=13.5 IPB=13.3 n-Butlybenzene=0.55 n-Propylbenzene=3.07 4-IPT=1.56 Styrene=1.73

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (Upland)																			
GP-21	MFA	GP21-W-28	19-Jul-04	26-30	2,480.	611.	99.6	321.	4,450.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=90.6 1,3,5-TMB=31.5 IPB=25.0 n-Butlybenzene=1.0 n-Propylbenzene=6.74 4-IPT=4.0 sec-Butylbenzene=0.35 Styrene=1.66
GP-22	MFA	GP22-W-28	19-Jul-04	26-30	6,410.	1,050.	565.	705.	495,000.	100. U	150. U	150. U	150. U	100. U	100. U	150. U	100. U	100. U	U
GP-23	MFA	GP23-W-28	19-Jul-04	26-30	2,760.	365.	100. U	200. U	166,000.	100. U	150. U	150. U	150. U	100. U	100. U	150. U	100. U	100. U	U
GP-24	MFA	GP24-W-28	19-Jul-04	26-30	25,000.	627.	248.	818.	7,450.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Acetone=11.0 1,2,4-TMB=156 1,3,5-TMB=50.6 IPB=13.9 Carbon disulfide=7.57 n-Butylbenzene=1.0 n-Propylbenzene=6.08 4-IPT=2.86 sec-Butylbenzene=0.44
GP-33	MFA	GP33-W-38	28-Apr-05	36-40	0.77		1.36	0.2 U	1.73	0.2 U	0.3 U	0.3 U	0.3 U		1.28	0.3 U	0.2 U	0.2 U	Acetone=16.4
		GP33-W-60	28-Apr-05	58-62	0.51		0.24	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		54.3	0.49	12.7	2.81	U
		GP33-W-92	28-Apr-05	90-94	0.2 U		0.22	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		1.88	0.3 U	0.2 U	0.64	1,2-DCA=0.210
		GP33-W-112	28-Apr-05	110-114	0.47		0.33	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		4.74	0.3 U	0.2 U	0.61	U
GP-33	MFA	GP33-W-152	28-Apr-05	150-154	0.2 U		0.43	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	
		GP-33-W-203	28-Apr-05	201-205	0.2 U		0.72	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	MTBE=16.7
GP-34	MFA	GP34-W-28	28-Apr-05	26-30	0.2 U		0.2 U	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	U
GP-35	MFA	GP35-W-28	28-Apr-05	26-30	31.4		0.2 U	8.43	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=1.55 1,3,5-TMB=0.340 Isopropylbenzene=0.760
GP-36	MFA	GP36-W-38	3-May-05	36-40	0.2 U		0.2 U	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	U
		GP36-W-60	4-May-05	58-62	0.2 U		0.26	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	U
		GP36-W-92	4-May-05	90-94	2.76		0.32	1.37	2.56	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	U
		GP36-W-110	4-May-05	108-112	0.2 U		0.2	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	U
		GP36-W-150	4-May-05	148-152	0.2 U		0.2	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	U
		GP36-W-207	4-May-05	205-209	0.2 U		0.61	0.2 U	0.1 U	5.28	17.1	0.35	6.48		0.2 U	0.3 U	0.2 U	0.2 U	Chlorobenzene=5.28 MTBE=19.9

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (Upland)																			
GP-37	MFA	GP37-W-38	5-May-05	36-40	0.2 U		0.2 U	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	Acetone=42.5
		GP37-W-62	5-May-05	60-64	0.2 U		0.2 U	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		4.5	0.3 U	0.86	0.2 U	U
		GP37-W-92	5-May-05	90-94	0.2 U		0.23	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	U
		GP37-W-112	5-May-05	110-114	0.2 U		0.26	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	U
		GP37-W-156	5-May-05	154-158	0.2 U		0.34	0.2 U	0.1 U	0.2	0.3 U	0.3 U	0.3 U		0.2 U	0.3 U	0.2 U	0.2 U	U
		GP37-W-203	5-May-05	201-205	0.24		0.31	0.2 U	0.1 U	1.58	23	0.3 U	4.99		1.47	0.3 U	0.88	0.2 U	MTBE=20.8
SIL-01	AMEC	101-01	1-Nov-05	26.5-31.5	208. U	192. U	78.4 U	11.	1,500.	73.6 U	104. U	57.6 U	115. U	192 U	131.	160. U	102. U	160. U	
		115-01	11-Nov-05	96-100	15. J	0.34 J	0.6 J	0.94	7.2 J	0.05 U	0.07 U	0.04 U	0.07 U	0.12 U	3. J	0.1 U	0.95 J	3. J	Carbon Disulfide=1.4 J Chloroform=1.2 J
		116-01	11-Nov-05	126-130	5.3 J	0.23 J	0.61 J	0.32	3.1 J	0.05 U	0.07 U	0.04 U	0.07 U	0.12 U	25. J	0.1 U	1. J	7.9 J	2-Butanone (MEK)=8.6 J Carbon Disulfide=0.89 J Chloroform=3.2 J
		117-01	11-Nov-05	156-160	2.2 J	0.12 U	0.45 J	0.19	0.11 U	1.9 J	0.94 J	0.04 U	0.07 U	0.12 U	5.2 J	0.1 U	0.75 J	1.8 J	1,2-DCE=0.34 J 2-Butanone=6.4 J Carbon Disulfide=1.1 J Chloroform=0.61 J
		118-01	14-Nov-05	184-188	0.35 J	0.12 J	0.32 J	0.08 U	3.1	0.05 U	0.81 J	0.04 U	0.44 J	0.12 U	0.68 J	0.1 U	0.23 J	0.1 U	Carbon Disulfide=0.52 J Chloroform=0.63 J
		109-01	7-Nov-05	207-208	0.81 U	0.75 J	0.31 U	0.47 U	0.69 U	8.7	110.	0.23 U	30.	0.75 U	1.5 J	0.63 U	1.9 J	0.63 U	Chloroform=1.0 J
		114-01	8-Nov-05	212-217	1.09 U	1.01 J	0.41 U	2.41 U	0.93 U	11.	130.	0.3 U	35.	1.01 U	2. J	0.84 U	2.9	0.84 U	
SIL-02	AMEC	127-01	17-Nov-05	28-32	1.1	0.35 J	0.05 U	0.82 J	0.11 U	0.05 U	0.07 U	0.04 U	0.07 U	0.12 U	0.08 U	0.1 U	0.06 U	0.1 U	Acetone=4.4 J
		131-01	17-Nov-05	96-100	0.32 J	0.12 U	0.05 U	0.29 U	4.4	0.05 U	0.07 U	0.04 U	0.07 U	0.12 U	0.08 U	0.1 U	0.06 U	0.1 U	Acetone=3. J
		132-01	17-Nov-05	126-130	0.13 U	0.12 U	0.05 U	0.29 U	4.2	0.05 U	0.07 U	0.04 U	0.07 U	0.12 U	0.08 U	0.1 U	0.06 U	0.1 U	Acetone=2.2 J
		133-01	18-Nov-08	156-160	0.13 U	0.12 U	0.24 J	0.29 U	1.7	0.05 U	0.07 U	0.04 U	0.07 U	0.12 U	0.08 U	0.1 U	0.06 U	0.1 U	Acetone=7.6 J Carbon disulfide=0.5 J
		133-02	18-Nov-05	156-160	0.13 U	0.12 U	0.35 J	0.28 J	0.11 U	0.05 U	0.07 U	0.04 U	0.07 U	0.12 U	0.08 U	0.1 U	0.06 U	0.1 U	Acetone=8. J Carbon disulfide=0.61 J
		134-01	18-Nov-05	186-190	0.13 U	0.12 U	0.05 J	0.29 U	0.11 U	0.05 U	0.07 U	0.04 U	0.07 U	0.12 U	0.08 U	0.1 U	0.06 U	0.1 U	MTBE=0.72

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
SIL-02	AMEC	119-01	14-Nov-05	214-216	0.13 U	0.12 U	0.05 J	0.29 U	4.7	1.1	31.	0.04 U	8.9	0.12 U	1.3	0.1 U	0.54 J	0.1 U	MTBE=22
SIL-03	AMEC	125-01	16-Nov-05	31-35	0.13 U	0.12 U	0.05 U	0.29 U	0.57 J	0.05 U	0.07 U	0.04 U	0.07 U	0.12 U	0.08	0.1 U	0.06 U	0.1 U	
		126-01	16-Nov-05	95-99	8.32 U	7.68 U	3.14 U	18.26 U	7.04 U	24.	240.	2.3 U	65.	7.68 U	4.5 J	6.4 U	11.	6.4 U	
		142-01	6-Dec-05	110-130	18.4 U	17. U	6.94 U	40.5 U	15.6 U	22.	300.	5.1 U	90.	17 U	3.2 J	14.2 U	12.	14.2 U	Chloroform=4.9 J
SIL-04	AMEC	136-01	18-Nov-05	26-30	0.13 U	0.12 U	0.05 U	0.29 U	0.11 U	0.05 U	0.07 U	0.04 U	0.07 U	0.12 U	0.08 U	0.1 U	0.06 U	0.1 U	Acetone=2.3 J Carbon disulfide=0.49 J
		137-01	21-Nov-05	70-74	0.13 U	0.12 U	0.05 U	0.29 U	0.11 U	0.05 U	0.43 J	0.04 U	0.07 U	0.12 U	0.08 U	0.1 U	0.06 U	0.1 U	
		144-01	9-Dec-05	80-89	6.93 U	6.39 U	2.61 U	15.25 U	5.86 U	18.	230.	6.9 J	64.	6.39 U	2.4 J	5.33 U	7.7	2.2 J	
GW-01	CH2M HILL	GW-01	10-Oct-90	24.5-25.0	221.	0.1 U	0.1 U	0.1 U											
GW-02	CH2M HILL	GW-02	10-Oct-90	24.5-25.0	181.	0.1 U	0.1 U	0.1 U											
GW-03	CH2M HILL	GW-03	11-Oct-90	24.5-25.0	13.5	1.5	1.8	5.6											
GW-04	CH2M HILL	GW-04-A	11-Oct-90	24.5-25.0	391.	68.	0.1 U	45.											
	CH2M HILL	GW-04-B	11-Oct-90	24.5-25.0	384.	75.	7.1	55.											
GW-06	CH2M HILL	GW-06	11-Oct-90	24.5-25.0	59.8	196.	4.6	17.9											
GW-07	CH2M HILL	GW-07	11-Oct-90	24.5-25.0	17,560.	126.	13.1	176.6											
GW-08	CH2M HILL	GW-08	11-Oct-90	24.5-25.0	285.	129.	0.1 U	65.4											
GW-09	CH2M HILL	GW-09	11-Oct-90	24.5-25.0	371.	74.4	13.1	66.6											
GW-10	CH2M HILL	GW-10	12-Oct-90	24.5-25.0	1,820.	471.	23.9	427.											
GW-11	CH2M HILL	GW-11-A	12-Oct-90	24.5-25.0	18,100.	2,520.	3,910.	3,510.											
	CH2M HILL	GW-11-B	12-Oct-90	24.5-25.0	23,300.	4,680.	5,960.	6,450.											
	CH2M HILL	GW-11-C	12-Oct-90	24.5-25.0	18,470.	4,510.	5,590.	6,422.											
GW-14	CH2M HILL	GW-14	12-Oct-90	24.5-25.0	8.6	0.1 U	0.1 U	0.1 U											
GW-15	CH2M HILL	GW-15	12-Oct-90	24.5-25.0	23.2	75.9	0.1 U	21.3											
GW-16	CH2M HILL	GW-16	13-Oct-90	24.5-25.0	12,600.	1,680.	214.	1,918.											
GW-17	CH2M HILL	GW-17-A	13-Oct-90	24.5-25.0	11,300.	1,680.	662.	2,458.											
	CH2M HILL	GW-17-B	13-Oct-90	24.5-25.0	10,930.	1,370.	574.	2,042.											
GW-18	CH2M HILL	GW-18	13-Oct-90	24.5-25.0	250.	64.2	20.4	87.3											
GW-19	CH2M HILL	GW-19	13-Oct-90	24.5-25.0	52.4	13.	0.1 U	20.6											
GW-20	CH2M HILL	GW-20-A	13-Oct-90	24.5-25.0	2,920.	1,690.	80.6	1,903.											
	CH2M HILL	GW-20-B	13-Oct-90	24.5-25.0	3,120.	1,720.	85.6	1,897.											
GW-21	CH2M HILL	GW-21	13-Oct-90	24.5-25.0	2,510.	37.6	349.	99.6											

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (Upland)																			
GW-22	CH2M HILL	GW-22-A	14-Oct-90	24.5-25.0	0.1 U	0.1 U	0.1 U	0.1 U											
	CH2M HILL	GW-22-B	14-Oct-90	24.5-25.0	1.	0.1 U	0.7 U	0.1 U											
GW-23	CH2M HILL	GW-23	14-Oct-90	24.5-25.0	335.	419.	0.1 U	91.9											
GW-24	CH2M HILL	GW-24	14-Oct-90	24.5-25.0	4,780.	926.	594.	1,550.											
GW-25	CH2M HILL	GW-25-A	15-Oct-90	24.5-25.0	0.1 U	0.1 U	0.1 U	0.1 U											
	CH2M HILL	GW-25-B	15-Oct-90	24.5-25.0	3.7	0.1 U	0.1 U	3.6											
GW-26	CH2M HILL	GW-26	15-Oct-90	24.5-25.0	5,920.	584.	910.	881.											
GW-27	CH2M HILL	GW-27-A	15-Oct-90	24.5-25.0	10,300.	1,220.	627.	1,847.											
	CH2M HILL	GW-27-B	15-Oct-90	24.5-25.0	11,400.	1,340.	320.	2,086.											
GW-28	CH2M HILL	GW-28	15-Oct-90	24.5-25.0	349.	0.1 U	9.7	22.4											
GW-29	CH2M HILL	GW-29	16-Oct-90	24.5-25.0	541.	263.	0.1 U	19.4											
Push Probe Boring Samples (In-water) [5]																			
GP-25	MFA	GP-25-W-2	30-Sep-04	0-2	1.15	2.66	0.57 U	5.73	7.91	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=18. 1,3,5-TMB=4.13 IPB=2.02 n-Butylbenzene=0.52 n-Propylbenzene=1.19 sec-Butylbenzene=0.3
		GP-25-W-36	30-Sep-04	34-36	0.62	1.42	0.67 U	1.35	151.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	14.	0.3 U	0.2 U	3.43	1,2,4-TMB=1.59 n-Butylbenzene=0.32
		GP-25-W-74	1-Oct-04	72-74	0.82	1.8	0.24 U	0.49	147.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	13.6	1,2,4-TMB=1.32 1,3,5-TMB=0.42 n-Butylbenzene=0.3
		GP-25-W-89	1-Oct-04	87-89	74.2	12.2	0.87 U	8.39	913.	0.2 U	0.3 U	0.3 U	0.3 U	4.88	1,360.	5.37	62.2	289.	1,2,4-TMB=9.83 1,3,5-TMB=2.49 4-IPT=0.87 IPB=1.3 n-Butylbenzene=0.57 n-Propyl benzene=0.58 1,1-DCA=0.98
		GP-25-W-116	1-Oct-04	114-116	64.2	5.31	2.63 U	1.68	197.	0.2 U	0.3 U	0.3 U	0.3 U	19.4	5,680.	28.4	952.	1,010.	1,2,4-TMB=1.35 1,3,5-TMB=0.32
		GP-25-W-151	30-Sep-04	149-151	1.46	2.12	0.69 U	2.03	76.5	24.6	94.4	4.67	43.9	0.2 U	2.49	0.3 U	1.39	0.2 U	1,2,4-TMB=1.24 n-Butylbenzene=0.3 MTBE=12.4

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water) [5]																			
GP-26	MFA	GP-26-W-2	6-Oct-04	0-2	0.2 U	1.1	0.2 U	1.44	103.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=5.12 1,3,5-TMB=1. 4-IPT=0.41 IPB=0.66 n-Butylbenzene=0.39 n-Propylbenzene=0.47
		GP-26-W-2D	6-Oct-04	0-2	0.75	1.52	0.77 U	1.94	89.8	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=6.16 1,3,5-TMB=1.27 4-IPT=0.45 IPB=1.15 n-Butylbenzene=0.38 n-Propylbenzene=0.53
		GP-26-W-30	6-Oct-04	28-30	0.2 U	0.46 U	0.84 U	1.01 U	2.97 U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP-26-W-60	6-Oct-04	58-60	281.	109.	51.6 U	111.9	6,840.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=35.8 1,3,5-TMB=9.73 4-IPT=1.66 IPB=4.99 Styrene=0.31 n-Propylbenzene=1.25 sec-Butylbenzene=0.62
		GP-26-W-83	6-Oct-04	81-83	17.5	26.2	6.52	23.96	1,730.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=14.5 1,3,5-TMB=4. 4-IPT=0.76 IPB=1.43 n-Butylbenzene=0.51 n-Propylbenzene=0.6 sec-Butylbenzene=0.31
		GP-26-W-110	6-Oct-04	108-110	21.4	10.	3.25 U	7.86	503.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	10.3	1,2,4-TMB=2.96 1,3,5-TMB=0.83 IPB=0.34
		GP-26-W-128	5-Oct-04	126-128	34.6	24.5	11.2	23.56	1,180.	0.2 U	30.2	0.3 U	2.83	0.2 U	284.	0.74	243.	94.	1,2,4-TMB=10.6 1,3,5-TMB=2.79 4-IPT=0.54 IPB=0.69 n-Butylbenzene=0.39 n-Propyl benzene=0.46
GP-27	MFA	GP-27-W-2	12-Oct-04	0-2	99.2	215.	5.44 U	143.7	6,800.	1.4	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=89.6 1,3,5-TMB=21.4 4-IPT=4.22 IPB=14.8 n-Butylbenzene=0.76 n-Propylbenzene=3.42 sec-Butylbenzene=0.48

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-27	MFA	GP-27-W-15	12-Oct-04	13-15	1.64	5.06	1.21	2.98	489.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	1.18	1,2,4-TMB=2.63 1,3,5-TMB=0.8 IPB=4.23 n-Propylbenzene=0.98 1,1-DCA=0.29
		GP-27-W-34	12-Oct-04	32-34	15.5	88.5	5.96	48.8	2,700.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	6.41 U	0.3 U	0.2 U	17.4	1,2,4-TMB=26.2 1,3,5-TMB=6.52 4-IPT=1.5 IPB=4.39 n-Butylbenzene=0.41 n-Propylbenzene=1.14 sec-Butylbenzene=0.31 1,1-DCA=0.3
		GP-27-W-59	12-Oct-04	57-59	3.64	39.1	1.51	22.46	1,430.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	9.62 U	0.3 U	0.2 U	51.6	1,2,4-TMB=14.7 1,3,5-TMB=3.78 4-IPT=0.85 IPB=22.79 n-Butylbenzene=0.38 n-Propylbenzene=0.66
		GP-27-W-84	12-Oct-04	82-84	2.62	6.03	0.67	1.49	430.	0.2 U	0.3 U	0.3 U	0.3 U	1.55	605.	2.19	20.4	70.8	1,2,4-TMB=2.78 1,3,5-TMB=0.78 IPB=0.69
		GP-27-W-110	11-Oct-04	108-110	30.8	45.7	2.24	45.3	1,860.	0.25	0.3 U	0.3 U	0.3 U	12.6	3,620.	9.76	605.	341.	1,2,4-TMB=23.2 1,3,5-TMB=6.17 4-IPT=1.39 IPB=2.26 n-Butylbezene=0.49 n-Propylbenzene=0.86
GP-28	MFA	GP-28-W-2	15-Oct-04	0-2	0.2 U	0.72	0.2 U	1.65	1. U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=1.26 IPB=0.51
		GP-28-W-36	15-Oct-04	34-36	0.2 U	0.2 U	0.2 U	0.4 U	1.65	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	3.27	U
		GP-28-W-74	15-Oct-04	72-74	67.8	1.48	2.97 U	1.2	83.	0.2 U	0.3 U	0.3 U	0.3 U	40.8	8,870.	68.2	251.	828.	U
		GP-28-W-89	15-Oct-04	87-89	103.	0.77	4.5	0.89	13.9	0.2 U	0.3 U	0.3 U	0.3 U	63.6	11,200.	23.7	8.8	6,390.	Chloroethane=4.21
		GP-28-W-116	15-Oct-04	114-116	0.2 U	1.88	0.2 U	1.54	90.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	27.	0.3 U	0.2 U	22.6	1,2,4-TMB=1.12 1,3,5-TMB=0.36
		GP-28-W-116D	15-Oct-04	114-116	0.2 U	1.96	0.2 U	1.69	13.7	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	13.1	0.3 U	0.2 U	11.7	1,2,4-TMB=1.49 1,3,5-TMB=0.41
		GP-28-W-160	14-Oct-04	158-160	0.2 U	0.36 U	0.2 U	0.7 U	1.13 U	5.52	73.6	1.49	27.6	0.2 U	76.8	0.3 U	7.91	16.	MTBE=9.56

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-29	MFA	GP-29-W-2	20-Oct-04	0-2	44.2	532.	13.3	306.	12,600.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	1.87	1,2,4-TMB=108. 1,3,5-TMB=45.1 IPB=33.8 n-Propylbenzene=6.21
		GP-29-W-22	20-Oct-04	20-22	0.72 U	52.8	2.74	27.3	2,740.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.99	0.3 U	0.2 U	18.4	1,2,4-TMB=22.7 1,3,5-TMB=5.88 4-IPT=1.23 IPB=2.25 Styrene=0.44 n-Butylbenzene=0.33 n-Propylbenzene=0.84
		GP-29-W-46	21-Oct-04	44-46	3.22	213.	9.38	154.1	6,940.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	1.84	0.3 U	0.2 U	11.6	1,2,4-TMB=89.5 1,3,5-TMB=23.9 4-IPT=4.16 IPB=12.7 n-Butylbenzene=0.94 n-Propylbenzene=2.46 sec-Butylbenzene=0.53
		GP-29-W-68	21-Oct-04	66-68	1.98 U	67.3	2.85 U	16.4	2,490.	0.2 U	0.3 U	0.42	0.3 U	0.2 U	668.	0.3 U	0.35	109.	1,2,4-TMB=35.9 1,3,5-TMB=10.2 4-IPT=2.53 IPB=4.21 Styrene=0.37 n-Butylbenzene=1.11 sec-Butylbenzene=0.71 1,1,2-TCA=0.37 Chloroform=0.54
		GP-29-W-88	21-Oct-04	86-88	1.88 U	143.	3.61 U	67.	6,010.	0.2 U	1.74	0.3 U	0.3 U	0.2 U	108.	0.3 U	0.64	61.3	1,2,4-TMB=68.1 1,3,5-TMB=19.6 4-IPT=3.91 IPB =9.25 n-Butylbenzene=0.96 n-Propylbenzene=3.03 sec-Butylbenzene=0.5
		GP-29-W-117	20-Oct-04	115-117	0.2 U	0.2 U	0.2 U	0.4 U	1. U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-30	MFA	GP-30-W-2	22-Oct-04	0-2	1.6	34.1	8.08	6.05	67.4	0.2 U	0.85	0.3 U	0.3 U	0.2 U	72.6	0.3 U	0.2 U	18.8	1,2,4-TMB=30.2 1,3,5-TMB=5.67 4-IPT=1.44 IPB=3.54 n-Butylbenzene=1.1 n-Propylbenzene=1.5 sec-Butylbenzene=0.45
		GP-30-W-25	25-Oct-04	23-25	32.2	1.85	1.94 U	0.24	4.44 U	0.2 U	0.3 U	0.3 U	0.3 U	14.3	1,900.	3.86	8.94	3,330.	1,2,4-TMB=1.1 1,3,5-TMB=0.32 IPB=0.67 1,1-DCA=1.71
		GP-30-W-50	25-Oct-04	48-50	85.4	0.29 U	3.88 U	0.4 U	1. U	0.2 U	0.3 U	0.3 U	0.3 U	94.2	16,600.	60.6	101.	2,650.	U
		GP-30-W-75	25-Oct-04	73-75	3.02	0.28 U	0.43 U	0.4 U	1. U	0.2 U	0.3 U	0.3 U	0.3 U	2.17	342.	0.89	2.6	279.	U
		GP-30-W-95	25-Oct-04	93-95	0.2 U	0.32 U	0.33 U	0.4 U	1. U	94.3	75.2	0.44	14.	0.2 U	11.1	0.3 U	0.86	3.63	MTBE=5.27
		GP-30-W-118	22-Oct-04	116-118	0.36	1.07 U	0.3 U	0.78	24.4 U	32.4	187.	4.02	66.9	0.2 U	8.2	0.3 U	1.83	2.44	MTBE=2.65
GP-31	MFA	GP-31-W-2	26-Oct-04	0-2	1.17	1.02	0.2 U	1.27	57.7	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	2.3	0.3 U	0.2 U	0.88	IPB =0.9
		GP-31-W-22	27-Oct-04	20-22	53.	11.1	3.14	16.45	219.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	23.7	1.84	2.75	3.73	1,2,4-TMB=6.47 1,3,5-TMB=2.16 IPB=5.96 n-Propylbenzene=0.98 sec-Butylbenzene=1.3 tert-Butylbenzene=0.8
		GP-31-W-46	27-Oct-04	44-46	4.32	5.96	0.2 U	3.04	270.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	97.3	0.52	12.1	13.5	1,2,4-TMB=2.44 1,3,5-TMB=0.4 4-IPT=0.71 IPB=1.21
		GP-31-W-69	27-Oct-04	67-69	2.74	4.05	0.2 U	2.38	187.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	58.	0.3 U	3.3	8.95	1,2,4-TMB=1.55 4-IPT=0.82 IPB=1.09 Carbon disulfide=0.37
		GP-31-W-89	27-Oct-04	87-89	5.28	8.67	0.2 U	4.29	578.	0.83	0.3 U	0.3 U	0.3 U	0.2 U	210.	0.88	30.7	22.	1,2,4-TMB=3.36 1,3,5-TMB=0.51 4-IPT=0.77 IPB=1.32 MTBE=5.25
		GP-31-W-113	26-Oct-04	111-113	1.8	9.98	1.51 U	4.11	672.	25.	89.4	2.64	43.8	0.2 U	112.	0.3 U	5.1	4.32	1,2,4-TMB=2.54 1,3,5-TMB=0.81 MTBE=2.27

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-32	MFA	GP-32-W-2	28-Oct-04	0-2	103.	8.65	4.42	2.06	94.9	0.2 U	0.3 U	0.3 U	0.3 U	23.6	8,490.	8.64	1.03	11,900.	4-IPT=0.64 IPB=1.02 n-Butylbenzene=0.43
		GP-32-W-24	28-Oct-04	22-24	12.6	1.43	0.2 U	1.28	115.	0.2 U	0.3 U	0.3 U	0.3 U	4.8	1,170.	1.68	0.2 U	2,110.	1,2,4-TMB=1.69 1,3,5-TMB=0.33 4-IPT=0.77 IPB=1.03 n-Butylbenzene=0.44
		GP-32-W-46	29-Oct-04	44-46	26.5	0.2	0.2 U	2.32	9.58 U	0.2 U	0.3 U	0.3 U	0.3 U	2.18	387.	0.3 U	7.58	726.	IPB=1.18 Carbon disulfide=0.22
		GP-32-W-70	29-Oct-04	68-70	38.5	0.2 U	0.2 U	1.39	3.87 U	0.2 U	0.3 U	0.3 U	0.3 U	2.04	448.	0.56	0.67	437.	IPB=0.86
		GP-32-W-90	29-Oct-04	88-90	0.29	0.2 U	0.2 U	0.4 U	3.86 U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	3.7	0.3 U	0.2 U	5.03	MTBE=2.85
		GP-32-W-121	28-Oct-04	119-121	0.81	0.86	0.2 U	1.23	69.9	31.9	197.	2.46	41.8	0.7	18.	0.86	2.16	2.24	4-IPT=0.73 IPB=0.93 Carbon disulfide=0.27 MTBE=9.66
GP-38	MFA	GP38-W-1	9-May-05	0-1	20	0.2 U	0.81	0.2 U	1 U	0.2 U	0.3 U			5.67	2,740	6.61	0.76	1,090	Carbon Disulfide=1.23
GP-39	MFA	GP39-W-1	10-May-05	0-1	11.9	0.2 U	0.99	0.2 U	1 U	0.2 U	0.3 U			0.85	517	0.35	0.2 U	390	U
GP-40	MFA	GP40-W-1	10-May-05	0-1	0.51	1.02	2.23	0.58	5.29	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=2.83 1,3,5-TMB=0.490
GP-41	MFA	GP41-W-1	10-May-05	0-1	0.2 U	0.52	2.69	0.5	*37.9*	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP41-W-3	10-May-05	2-3	0.2 U	0.2 U	0.2 U	1.2	*26*	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,3,5-TMB=0.33 Isopropylbenzene=0.370
GP-42	MFA	GP42-W-1	10-May-05	0-1	0.2 U	0.2 U	0.2 U	0.2 U	*2.52*	0.2 U	0.3 U			0.2 U	6.36	0.3 U	0.2 U	7.92	MTBE=2.45
		GP42-W-3	10-May-05	2-3	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.3 U			0.2 U	3.55	0.3 U	0.2 U	3.61	Isopropylbenzene=0.370 MTBE=2.42
GP-43	MFA	GP43-W-1	11-May-05	0-1	1.28	0.2 U	0.72	0.2 U	1 U	0.2 U	0.3 U			0.2 U	26	0.3 U	0.2 U	118	
GP-44	MFA	GP44-W-1	11-May-05	0-1	1.58	32.6	1.36	8.18	678	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.79	1,2,4-TMB=14.5 1,3,5-TMB=2.69 p-Isopropyltoluene=0.7 Isopropylbenzene=1.53 n-Propylbenzene=0.57 m,p-Xylene=2.42
GP-45	MFA	GP45-W-1	11-May-05	0-1	4.08	5.62	0.39	1.29	57.6	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=1.16 1,3,5-TMB=0.5 Isopropylbenzene=0.630 m,p-Xylene=0.41
GP-46	MFA	GP46-W-1	11-May-05	0-1	7.99	1.56	1.58	2.38	24.8	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=1.05 m,p-Xylene=0.99
GP-47	MFA	GP47-W-1	11-May-05	0-1	0.2 U	0.2 U	0.2 U	0.2 U	2.53	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-47	MFA	GP47-W-3	11-May-05	2-3	0.45	0.42	0.29	1.86	4.26	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=5.48 1,3,5-TMB=0.710 Isopropylbenzene=0.470
GP-48	MFA	GP48-W-1	11-May-05	0-1	7.98	0.24	0.62	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.47	U
GP-49	MFA	GP49-W-1	12-May-05	0-1	0.2 U	0.2 U	0.2 U	0.2 U	2.51	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP49-W-20	12-May-05	18-22	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP49-W-37	12-May-05	35-39	0.2 U	0.2 U	1	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP49-W-52	12-May-05	50-54	0.2 U	0.2 U	1.19	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP49-W-67	12-May-05	65-69	0.2 U	0.2 U	1.27	0.2 U	1 U	1.02 U	0.85			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP49-W-87	12-May-05	85-89	0.2 U	0.2 U	0.95	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
GP-50	MFA	GP50-W-1	12-May-05	0-1	0.2 U	0.2 U	1.3	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
GP-51	MFA	GP51-W-1	13-May-05	0-1	0.2 U	0.2 U	1.92 U	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP51-W-3	13-May-05	2-3	1	1.14	1.38 U	0.62	19.8	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Isopropyllbenzene=0.610
GP-52	MFA	GP52-W-1	13-May-05	0-1	0.25	1.15	0.82 U	0.26	29.6	0.2 U	0.3			0.2 U	0.2 U	0.3 U	0.2 U	0.48 U	1,2,4-TMB=1.49 1,3,5-TMB=0.33 Isopropylbenzene=0.780 n-Propylbenzene=0.650
		GP52-W-3	13-May-05	2-3	0.2 U	0.2 U	0.41 U	0.2 U	2.05	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.65 U	U
GP-53	MFA	GP53-W-1	13-May-05	0-1	0.36	0.2 U	0.3 U	0.2 U	1.94	0.2 U	0.3 U			0.2 U	7.24	0.3 U	0.2 U	8.27	U
		GP53-W-3	13-May-05	2-3	0.57	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.3 U			0.2 U	103	0.3 U	0.2 U	34.3	U
GP-54	MFA	GP54-W-1	13-May-05	0-1	894	46	178	22.3	3,630	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=12.3 1,3,5-TMB=3.51 Isopropylbenzene=1.36 n-Propylbenzene=0.3 sec-Butylbenzene=1.75 m,p-Xylene=42.6
GP-55	MFA	GP55-SW	16-May-05	SW [6]	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	*0.3* U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP55-W-1	16-May-05	0-1	2.71	0.2 U	0.45	0.2 U	1 U	0.2 U	*0.3* U			0.2 U	1.55	0.3 U	0.2 U	16	U
		GP55-W-3	16-May-05	2-3	6.9	0.2 U	0.41	0.2	1.58	0.2 U	0.3 U			2.98	254	0.3 U	4.05	422	1,1-DCA=0.33
		GP55-W-5	16-May-05	4-5	8.08	0.2 U	0.33	0.2 U	1 U	0.2 U	0.3 U			3.07	267	0.3 U	4.51	484	1,1-DCA=0.36
GP-56	MFA	GP56-W-1	16-May-05	0-1	2.07	0.2 U	1.19	0.2 U	3.79	0.2 U	0.3 U			0.2 U	1.7	0.3 U	0.2 U	2.19	1,2,4-TMB=1.3 1,3,5-TMB=0.44 Isopropylbenzene=0.310 n-Propylbenzene=0.55
		GP56-W-3	16-May-05	2-3	1.04	0.2 U	0.76	0.2 U	2.47	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.57	U

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	Other VOCs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-57	MFA	GP57-W-1	16-May-05	0-1	3.14	0.2 U	0.57	0.2 U	1 U	0.2 U	0.3 U			0.2 U	111	0.38	0.31	139	U
GP-58	MFA	GP58-W-1	16-May-05	0-1	0.67	0.2 U	0.26	0.2 U	1 U	0.2 U	0.3 U			0.2 U	27.5	0.3 U	0.2 U	7.92	U
GP-59	MFA	GP59-SW	17-May-05	SW [6]	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.47	U
GP-60	MFA	GP60-SW	17-May-05	SW [6]	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2	U
GP-61	MFA	GP61-SW	17-May-05	SW [6]	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.57	U
		GP61-W-1	18-May-05	0-1	4.67	0.2 U	2.14	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	1.9	U
		GP61-W-3	18-May-05	2-3	4.6	0.2	12.5	0.2 U	5.37	0.2 U	0.3 U			0.2 U	62.8	0.3 U	0.2 U	56.2	U
		GP61-W-5	18-May-00	4-5	15.5	0.91	1.74	0.2 U	2.44	0.2 U	0.3 U			5.49	2,960	22.5	1.85	863	1,1-DCA=0.31
GP-62	MFA	GP62-SW	18-May-05	SW [6]	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.3 U			0.2 U	1.24	0.3 U	0.2 U	0.76	U
		GP62-W-1	18-May-05	0-1	0.2 U	0.2 U	5.65	0.2 U	1.85	0.2 U	0.3 U			0.2 U	1.66	0.3 U	0.2 U	0.99	U
		GP62-W-3	18-May-05	2-3	1.03	0.2 U	13.2	0.2 U	99.9	0.2 U	0.3 U			0.2 U	4.09	0.3 U	0.2 U	1.4	1,2,4-TMB=1.04 1,3,5-TMB=0.34 2-Butanone=32.7 Acetone=27.2
		GP62-W-5	18-May-05	4-5	0.2 U	0.2 U	8.37	0.2 U	3.12	0.2 U	0.3 U			0.2 U	1.25	0.3 U	0.2 U	0.39	U
GP-63	MFA	GP63-SW	19-May-05	SW [6]	0.2 U	0.2 U	0.24	0.2 U	1 U	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.32	U
		GP63-W-1	19-May-05	0-1	2.45	0.2 U	0.64	0.2 U	20	0.2 U	0.3 U			0.2 U	18.2	0.3 U	0.2 U	114	U
		GP63-W-3	19-May-05	2-3	27.3	2.84	1.97	2.94	361	0.2 U	0.3 U			0.2 U	15.3	0.3 U	0.2 U	125	1,2,4-TMB=6.89 1,3,5-TMB=1.63 p-Isopropyltoluene=0.46 n-Propylbenzene=0.7 m,p-Xylene=1.93
		GP63-W-5	19-May-05	4-5	6.51	0.2 U	0.98	0.2 U	18.6	0.2 U	0.3 U			0.96	106	0.31	0.91	89.3	U
GP-64	MFA	GP64-SW	19-May-05	SW [6]	31.4	11.4	4.12	5.9	458	0.2 U	0.3 U			0.51	279	1.46	0.2 U	73.2	1,2,4-TMB=1.92 1,3,5-TMB=0.44 m,p-Xylene=3.93
		GP64-W-1	19-May-05	0-1	747	275	56.1	157.7	12,200	0.2 U	0.3 U			2.44	2,950	25.4	0.62	625	1,2,4-TMB=43.9 1,3,5-TMB=11.3 p-Isopropyltoluene=1.98 Isopropylbenzene=8.49 n-Butylbenzene=0.34 n-Propylbenzene=2.11 sec-Butylbenzene=1.79 Tert-butylbenzene=0.3 m,p-Xylene=90.2

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Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-64	MFA	GP64-W-3	19-May-05	2-3	138	70.2	26.2	43.7	3,560	0.2 U	0.3 U			7.31	7,600	79.9	51.5	475	1,2,4-TMB=17 1,3,5-TMB=5.07 p-Isopropyltoluene=0.640 Isopropylbenzene=2.23 m,p-Xylene=27.1
		GP64-W-5	19-May-05	4-5	144	72.4	28.8	40.9	4,250	0.2 U	0.3 U			25.4	10,900	61.7	19,500	98.3	1,2,4-TMB=20.4 1,3,5-TMB=5.49 p-Isopropyltoluene=0.95 Isopropylbenzene=3.30 Styrene=0.310 n-Butylbenzene=0.47 n-Propylbenzene=1.16 sec-Butylbenzene=2.63 PCE=0.58 m,p-Xylene=24.9
GP-65	MFA	GP65-W-1	19-May-05	0-1	39.1	0.2 U	2.23	0.2 U	44.9	0.2 U	0.3 U			40.5	14,400	32.6	48.7	1,640	U
		GP65-W-3	19-May-05	2-3	35.8	0.2 U	3.68	0.2 U	14.8	0.2 U	0.3 U			27.9	19,200	92	15.5	650	U
GP-66	MFA	GP66-W-1	20-May-05	0-1	2.31	0.2 U	2.7 U	0.2 U	8.08	0.2 U	0.3 U			0.2 U	17.1	0.3 U	7	2.51	U
		GP66-W-12	20-May-05	10-14	19.5	0.2 U	2.27 U	0.2 U	1 U	0.2 U	0.3 U			2.32	552	1.16	1.93 U	567	U
		GP66-W-27	20-May-05	25-29	5.92	0.2 U	1.27 U	0.2 U	1 U	0.2 U	0.3 U			0.95	252	0.46	2.87 U	100	U
		GP66-W-52	20-May-05	50-54	13.4	0.2 U	1.6 U	0.2 U	1 U	0.2 U	0.3 U			1.6	342	1.07	1.49 U	207	U
		GP66-W-77	20-May-05	75-79	17.3	0.2 U	2.69 U	0.2 U	1 U	0.2 U	0.3 U			0.2 U	194	0.3 U	5.53 U	205	U
		GP66-W-113	20-May-05	111-115	1.24	0.2 U	0.99 U	0.2 U	1 U	0.2 U	0.3 U			0.2 U	9.54	0.3 U	0.87 U	6.16	U
GP-67	MFA	GP67-W-1	23-May-05	0-1	99.2	26.9	30.7	18.66	2,520	0.2 U	0.3 U			39	67,000	117	88500	4,300	1,2,4-TMB=15.2 1,3,5-TMB=5.98 p-Isopropyltoluene=3.05 Isopropylbenzene=1.42 m,p-Xylene=9
		GP67-W-3	23-May-05	2-3	2,560	52.9	215	44.3	1,860	0.2 U	0.3 U			283	57,400	1,760	585000	28,900	1,2,4-TMB=11.5 1,3,5-TMB=5.34 Isopropylbenzene=1.68 Styrene=6.07 n-Propylbenzene=1.89 PCE=8.61 m,p-Xylene=24.7
GP-68	MFA	GP68-SW	23-May-05	SW [6]	0.2 U	0.2 U	0.93	0.2 U	38.2	0.2 U	0.3 U			0.2 U	130	0.3 U	194	7.26	U

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-68	MFA	GP68-W-1	23-May-05	0-1	3,840	416	36.6	443	12,300	0.2 U	0.3 U			0.2 U	12	0.3 U	43.5	0.2 U	1,2,4-TMB=69.9 1,3,5-TMB=21.6 p-Isopropyltoluene=3.98 Isopropylbenzene=14.5 Styrene=1.71 n-Propylbenzene=3.36 sec-Butylbenzene=7.06 m,p-Xylene=293
		GP68-W-3	23-May-05	2-3	201	43.8	3.18	29.6	1,800	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	2.01	0.51	1,2,4-TMB=9.38 1,3,5-TMB=2.35 Isopropylbenzene=3.26 n-Propylbenzene=0.510 sec-Butylbenzene=2.05 m,p-Xylene=18
		GP68-W-5	23-May-05	4-5	12.2	2.47	0.88	2	218	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	1.32	0.76	m,p-Xylene=1.36
GP-69	MFA	GP69-SW	24-May-05	SW [6]	4.14	1.33	0.36 U	0.2 U	81.9	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.61	1.15	U
		GP69-W-1	24-May-05	0-1	254	138	23	96.6	11,400	0.2 U	0.3 U			1.3	3,830	12.8	4.31	540	1,2,4-TMB=44.3 1,3,5-TMB=12 p-Isopropyltoluene=1.58 Isopropylbenzene=7.45 n-Butylbenzene=0.48 n-Propylbenzene=1.58 sec-Butylbenzene=1.76 m,p-Xylene=56.2
GP-69	MFA	GP69-W-3	24-May-05	2-3	232	71.2	9.81	32.2	2,840	0.2 U	0.3 U			7.33	7,570	47.5	77	506	1,2,4-TMB=22.8 1,3,5-TMB=4.74 p-Isopropyltoluene=0.83 Isopropylbenzene=6.5 n-Butylbenzene=0.330 n-Propylbenzene=1.12 sec-Butylbenzene=3.65 tert-Butylbenzene=0.43 m,p-Xylene=14
		GP69-W-5	24-May-05	4-5	129	21.4	1.7 U	12.87	2,350	0.2 U	0.3 U			0.2 U	92.8	0.3 U	2.67	18	1,2,4-TMB=12.4 1,3,5-TMB=3.10 p-Isopropyltoluene=0.43 Isopropylbenzene=3.31 n-Propylbenzene= 0.60 sec-Butylbenzene=3.01 m,p-Xylene=4.63
GP-70	MFA	GP70-SW	24-May-05	SW [6]	0.46	1.55	0.48 U	0.54 U	282	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2	0.49	m,p-Xylene=0.54

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-70		GP70-W-1	24-May-05	0-1	123	106	7.45	68.8	4,820	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.88	1,2,4-TMB=14.7 1,3,5-TMB=3.63 Isopropylbenzene=1.22 n-Propylbenzene=0.30 m,p-Xylene=41.9
		GP70-W-3	24-May-05	2-3	2.55	6.11	0.53 U	9.01	594	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=10.7 1,3,5-TMB=5.36 Isopropylbenzene=4.14 n-Propylbenzene=2.44 sec-Butylbenzene=6.33 m,p-Xylene=1.93
		GP70-W-5	24-May-05	4-5	0.2 U	2.35	0.2 U	3.56	569	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	1.43	1,2,4-TMB=4.09 1,3,5-TMB=3.86 Styrene=1.16
GP-71	MFA	GP71-W-1	24-May-05	0-1	0.2 U	42.1	0.33	23.95	12,400	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=21.8 1,3,5-TMB=5.75 p-Isopropyltoluene=3.21 Isopropylbenzene=9.30 m,p-Xylene=5.25
		GP71-W-3	24-May-05	2-3	0.2 U	0.82	0.2 U	3.04	101	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	2.24	1,2,4-TMB=4.49 1,3,5-TMB=3.82 Isopropylbenzene=1.2
GP-72	MFA	GP72-SW	25-May-05	SW [6]	0.2 U	0.2 U	0.2 U	0.2 U	3.7	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.48	U
		GP72-W-1	25-May-05	0-1	0.2 U	0.2 U	0.8	0.2 U	22.9	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP72-W-25	25-May-05	23-27	0.2 U	0.2 U	0.2 U	0.2 U	6.43	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP72-W-44	25-May-05	42-46	0.2 U	0.2 U	0.29	0.2 U	10.3	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
GP-73	MFA	GP73-SW	25-May-05	SW [6]	0.2 U	0.2 U	0.2 U	0.2 U	2.46	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2	0.46	U
		GP73-W-1	25-May-05	0-1	242	321	17.4	160.8	13,700	0.2 U	0.3 U			0.2 U	24.6	0.3 U	2.56	1.22	1,2,4-TMB=63.1 1,3,5-TMB=17.1 p-Isopropyltoluene=1.8 Isopropylbenzene=8.76 Styrene=0.49 n-Butylbenzene=0.47 n-Propylbenzene=1.92 m,p-Xylene= 79.3
		GP73-W-3	25-May-05	2-3	7.63	21.1	1.04	10.66	1,550	0.2 U	0.3 U			0.2 U	1.85	0.3 U	0.2 U	1.18	1,2,4-TMB=6.72 1,3,5-TMB=1.54 p-Isopropyltoluene=0.58 m,p-Xylene=5.76

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-73	MFA	GP73-W-5	25-May-05	4-5	3.06	25.8	0.58	14.48	4,020	0.2 U	0.3 U			0.2 U	1.46	0.3 U	0.2 U	0.991	1,2,4-TMB= 16.4 1,3,5 TMB= 4.27 p-Isopropyltoluene= 0.58 Isopropylbenzene=1.34 n-Propylbenzene=0.49 m,p-Xylene=6.72
GP-74	MFA	GP74-SW	26-May-05	SW [6]	1	3.5	0.91	0.91	227	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.44	1,2,4-TMB=1.01 1,3,5-TMB=0.31 m,p-Xylene=0.48
		GP74-W-1	26-May-05	0-1	6.04	14.4	1.15	6.63	670	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.43	1,2,4-TMB=4.17 1,3,5-TMB=1.19 Isopropylbenzene=3.16 n-Propylbenzene=0.51 m,p-Xylene=2.62
		GP74-W-5	26-May-05	4-5	629	337	14.9	85.02	9,480	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.35	1,2,4-TMB=36.5 1,3,5-TMB=7.38 p-Isopropyltoluene=0.89 Isopropylbenzene=7.01 Styrene=0.21 n-Butylbenzene= 0.3 n-Propylbenzene=1.46 m,p-Xylene=41.4
		GP74-W-23	26-May-05	21-25	0.88	2.25	0.4	0.2 U	184	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.4	U
GP-75	MFA	GP75-SW	26-May-05	SW [6]	1.74	1.75	0.82	0.2 U	139	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.46	U
		GP75-W-1	26-May-05	0-1	0.99	2.14	2.24	0.2 U	53.9	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.59	U
		GP75-W-3	26-May-05	2-3	0.69	2.42	3.04	0.2 U	104	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.55	1,2,4-TMB=1.18 2-Butanone=10.2
		GP75-W-5	26-May-05	4-5	0.2 U	0.64	0.5	0.2 U	72	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	1.01	U
GP-76	MFA	GP76-SW	27-May-05	SW [6]	0.2 U	0.2 U	0.2 U	0.2 U	2.89	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.52	U
		GP76-W-1	27-May-05	0-1	8.8	0.97	1.62	0.2 U	42.7	0.2 U	0.3 U			0.2 U	21.5	0.3 U	0.8	1.69	U
		GP76-W-3	27-May-05	2-3	271	79.7	54.1	52.9	11,200	0.2 U	0.3 U			1.33	570	2.39	29.2	87.7	1,2,4-TMB=23 1,3,5-TMB=5.63 p-Isopropyltoluene=0.861 Isopropylbenzene=4.56 n-Butylbenzene=0.3, n-Propylbenzene=0.91 m,p-Xylene=73.2
		GP76-W-5	27-May-05	4-5	2,550	168	13.7	120.6	10,900	0.2 U	0.3 U			0.2 U	36.8	0.3 U	1.75	2.41	1,2,4-TMB=36.8 1,3,5-TMB=10.6 p-Isopropyltoluene=1.09 Isopropylbenzene=1.58 n-Propylbenzene=0.71 m,p-Xylene=30.5

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-77	MFA	GP77-SW	27-May-05	SW [6]	0.2 U	0.55	0.29	0.2 U	377	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
GP-78	MFA	GP78-SW	27-May-05	SW [6]	0.2 U	0.2 U	0.2 U	0.2 U	9.47	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
GP-79	MFA	GP79-SW	31-May-05	SW [6]	0.2 U	0.2 U	0.34 U	0.2 U	2.56	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
GP-80	MFA	GP80-W-1	31-May-05	0-1	2.47	1.61	1.09 U	0.2 U	59.4	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		GP80-W-12	27-May-05	10-14	107	19.6	2.38 U	7.54	2,130	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=6.34 1,3,5-TMB=1.45 2-Butanone=12 p-Isopropyltoluene=0.38 m,p-Xylene=3.83
		GP80-W-22	27-May-05	20-24	0.3	0.2 U	0.2 U	0.2 U	41.8	0.2 U	0.3 U			0.2 U	29.2	0.3 U	0.2 U	3.1	U
		GP80-W-32	27-May-05	30-34	0.61	1.16	0.46 U	0.2 U	207	0.2 U	0.3 U			0.2 U	29.7	0.3 U	0.2 U	2.81	U
GP-81	MFA	GP81-SW	31-May-05	SW [6]	0.46	1.15	0.35 U	0.43 U	166	0.2 U	0.3			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	m,p-Xylene=0.43
		GP81-W-1	31-May-05	0-1	968	141	44.5	87.4	8,780	0.2 U	0.3 U			0.2 U	2.33	0.3 U	0.2 U	1.65	1,2,4-TMB=37.4 1,3,5-TMB=9.52 p-Isopropyltoluene=1.04 Isopropylbenzene=5.12 Styrene=0.39 n-Propylbenzne=0.99 m,p-Xylene=42.4
GP-81	MFA	GP81-W-3	31-May-05	2-3	569	41.7	8.25	26.2	2,840	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.71	0.76	1,2,4-TMB=9.48 1,3,5-TMB=2.15 Isopropylbenzene=1.6 n-Propylbenzene=0.36 m,p-Xylene=14.5
		GP81-W-5	31-May-05	4-5	5,490	246	821	290	14,000	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	1.04	0.84	1,2,4-TMB=45.5 1,3,5-TMB=12.8 p-Isopropyltoluene=0.91 Isopropylbenzene=9.36 Styrene=6.18 n-Butylbenzene=0.330 n-Propylbenzene=1.36 tert-Butylbenzene=0.69 m,p-Xylene=176

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Push Probe Boring Samples (In-water)																			
GP-82	MFA	GP82-SW	1-Jun-05	SW [6]	0.69	3.46	0.28	0.2 U	605	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=2.92 1,3,5-TMB=0.4 sec-Butylbenzene=0.550
		GP82-W-1	1-Jun-05	0-1	28.9	75.5	9.32	57.2	3,890	0.2 U	0.3 U			0.2 U	3.77	0.3 U	0.2 U	1.51	1,2,4-TMB=22.7 1,3,5-TMB=6.51 p-Isopropyltoluene=0.48 Isopropylbenzene=7.66 n-Propylbenzene=1.18 sec-Butylbenzene=2.38 Tert-Butylbenzene=0.4 m,p-Xylene=30.3
		GP82-W-3	1-Jun-05	2-3	33.7	22.5	5.43	11.49	1,990	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.65	1,2,4-TMB=10.2 1,3,5-TMB=2.69 2-Butanone=11.8 p-Isopropyltoluene=0.32 Isopropylbenzene=2.24 n-Propylbenzene=0.51 sec-Butylbenzene=0.71 m,p-Xylene=5.12
		GP82-W-5	1-Jun-05	4-5	26.4	24	2.95	13.31	190	0.2 U	0.3 U			0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=8.16 1,3,5-TMB=1.73 Isopropylbenzene=1.31 sec-Butylbenzene 0.81 m,p-Xylene=7.34
GP-83	MFA	GP83-SW	1-Jun-05	SW [6]	0.2 U	0.2 U	0.2 U	0.2 U	5.11	0.2 U	0.3 U			0.2 U	3.28	0.3 U	0.2 U	1.69	U
		GP83-W-5	1-Jun-05	4-5	120	26.3	36.9	14.54	1,450	0.2 U	0.3 U			2.49	5,220	11.2	2.26	1,740	1,2,4-TMB=5.18 1,3,5-TMB=1.31 p-Isopropyltoluene=0.43 m,p-Xylene=11
		GP83-W-12	1-Jun-05	10-14	3,340	340	216	287	17,100	0.2 U	0.3 U			3.25	3,610	6.82	98.5	593	1,2,4-TMB=62.8 1,3,5-TMB=17.4 p-Isopropyltoluene=1.68 Isopropylbenzene=10.9 n-Butylbenzene=0.47 n-Propylbenzene=1.89 sec-Butylbenzene1.71 Tert-Butylbenzene=0.37 m,p-Xylene=174
GP-84	MFA	GP84-SW	1-Jun-05	SW [6]	0.27	0.2 U	0.21	0.2 U	34.5	0.2 U	0.3 U			0.2 U	4.7	0.3 U	0.2 U	2.13	U
		GP84-W-1	1-Jun-05	0-1	0.2 U	0.2 U	2.73	0.2 U	47.3	0.2 U	0.3 U			0.2 U	2.27	0.3 U	5.63	0.65	U
		GP84-W-3	1-Jun-05	2-3	48.4	17.7	3.51	10.8	968	0.2 U	0.3 U			0.2 U	1.9	0.3 U	2.96	0.73	1,2,4-TMB=4.03 1,3,5-TMB=1.03 m,p-Xylene=7.19

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Monitoring Well Exploratory Samples																			
WS-11	MFA	WS-11-W-72.0	22-Sep-03	70-72	3.83	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	26.4	0.2 U	0.2 U	4.34	1,1-DCA=0.45
		WS-11-W-87.0	22-Sep-03	85-87	8.29	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	248.	0.53	0.4	33.1	1,1-DCA=0.92
		WS-11-W-102.0	22-Sep-03	100-102	92.2	1. U	2.1	2. U	1. U	1. U	1. U	1. U	1. U	1. U	3,040.	5.	841.	196.	1,1-DCA=1.6 PCE=3.9
		WS-11-W-117.0	23-Sep-03	115-117	395.	28.6	21.	21.7	778.	1. U	1. U	1. U	1. U	28.9	17,200.	25.8	2,990.	3,200.	1,2,4-TMB=2.51 1,3,5-TMB=1.33 IPB=2.
		WS-11-W-DUP	23-Sep-03		281.	37.7	28.4	29.4	783.	1. U	1. U	1. U	1. U	41.	13,800.	31.1	2,560.	2,460.	U
		WS-11-W-132.0	23-Sep-03	130-132	1.14	0.85	0.39	0.4 U	4.04	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	32.2	0.2 U	8.66	6.4	Chloroform=0.72
		WS-11-W-147.0	24-Sep-03	145-147	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U	4.54	4.89	2.69	0.28	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	MTBE=0.81
		WS-11-W-167.0	24-Sep-03	165-167	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	Chloroform=0.38
		WS-11-W-182.0	24-Sep-03	180-182	0.31	0.2 U	0.2 U	0.4 U	0.2 U	47.3	47.4	16.6	0.97	0.2 U	1.05	0.5	1.59	0.2 U	Chloroform=0.38 MTBE=5.76
		WS-11-W-197.0	25-Sep-03	195-197	0.23	0.2 U	0.2 U	0.4 U	0.2 U	30.4	35.6	25.5	1.5	0.2 U	0.7	0.2 U	0.65	0.2 U	MTBE=9.12
		WS-11-W-206.0	25-Sep-03	204-206	0.2 U	0.2 U	0.41	0.4 U	0.2 U	9.15	115.	2.3	34.6	0.2 U	0.92	0.2 U	2.63	0.2 U	Chloroform=2.4 MTBE=4.94
WS-12	MFA	WS-12-W-100.0	8-Sep-03	98-100	16.5	0.2 U	1.3	0.81	1.17	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1.65	0.2 U	0.58	5.75	Chloroform=2.1
		WS-12-W-117.0	9-Sep-03	115-117	4.46	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	21.	0.2 U	1.63	66.1	Chloroform=2.61
		WS-12-W-132.0	9-Sep-03	130-132	0.3	1.	11.9	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.86	0.2 U	0.5	4.33	Styrene=4.64
		WS-12-W-147.0	11-Sep-03	145-147	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	BDCM=0.63 Chloroform=0.62
		WS-12-W-166.0	11-Sep-03	164-166	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U	7.83	8.39	0.5	0.2 U	0.2 U	0.61	0.2 U	0.2 U	0.2 U	MTBE=3.35
		WS-12-W-182.0	11-Sep-03	180-182	0.22	0.2 U	0.38	0.4 U	0.2 U	21.8	18.5	0.48	0.2 U	0.2 U	1.03	0.47	0.85	0.2 U	1,2-DCA=0.54 MTBE=8.44 n-Propylbenzene=0.29
		WS-12-W-197.0	12-Sep-03	195-197	0.2 U	0.2 U	0.36	0.4 U	0.2 U	7.56	48.4	28.5	2.15	0.2 U	0.62	0.2 U	0.86	0.2 U	MTBE=15.5 n-Propylbenzene=0.25
		WS-12-W-205.0	17-Sep-03	203-205	0.4 U	1. U	1. U	2. U	1. U	8.	114.	2.44	2.44	1. U	1. U	1. U	2.05	1. U	MTBE=12.9
		WS-12-W-206.0	12-Sep-03	204-206	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U	6.48	79.	28.5	2.11	0.2 U	0.88	0.2 U	1.93	0.2 U	MTBE=15.3
WS-13	MFA	WS-13-W-72.0	4-Oct-03	70-72	3.19	2.45	5.11	2.02	44.	1. U	1. U	1. U	1. U	3.44	923.	53.8	6,930.	1. U	U

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Monitoring Well Exploratory Samples																			
WS-13	MFA	WS-13-W-87.0	4-Oct-03	85-87	24.3	62.7	24.	80.6	478.	1. U	1. U	1. U	1. U	39.6	559.	79.5	43,200.	10.1	1,2,4-TMB=16. 1,3,5-TMB=4.93 4-IPT=1.84 Chloroform=2. IPB=1.75 PCE=1.57
		WS-13-W-102.0	5-Oct-03	100-102	0.56	0.2 U	0.2 U	0.4 U	10.9	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	3.93	0.2 U	556.	0.2 U	Chloroform=1.7
		WS-13-W-152.0	5-Oct-03	150-152	0.85	0.2 U	0.2 U	0.4 U	0.2 U	4.36	12.	0.72	7.3	0.2 U	0.64	0.2 U	0.2 U	0.2 U	Chloroform=1.18 MTBE=8.87
		WS-13-W-DUP	5-Oct-03		0.78	0.2 U	0.2 U	0.4 U	0.2 U	3.57	9.53		6.06	0.2 U		0.2 U	0.2 U	0.2 U	U
		WS-13-W-169.0	6-Oct-03	167-169	0.72	0.2 U	0.2 U	0.4 U	0.2 U	2.91	8.56	0.34	3.96	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	Chloroform=2.96 MTBE=8.92
		WS-13-W-207.0	6-Oct-03	187-207	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	Chloroform=2.01 MTBE=9.1
WS-14	MFA	WS-14-W-71	24-Jun-04	69-71	191.	138.	58.	243.3	9,900.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	1.76	0.3 U	0.2 U	0.36	1,2,4-TMB=74.0 1,3,5-TMB=21.1 IPB=43.0 n-Propylbenzene=2.30 4-IPT=2.48
		WS-14-W-86	25-Jun-04	84-86	8,200.	905.	14.9	1,433.	19,700.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TCB=0.55 1,2,4-TMB=151 1,3,5-TMB=56.0 IPB=43.0 Carbon disulfide=7.57 Chloroform=1.96 n-Butylbenzene=1.06 n-Propylbenzene=8.03 4-IPT=4.95 sec-Butylbenzene=0.41
		WS-14-W-101	25-Jun-04	99-101	7,820.	845.	357.	1,176.	16,000.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	12.9	0.3 U	0.2 U	29.2	1,2,4-TMB=154 1,3,5-TMB=53.0 IPB=39.4 Chloroform=9.94 n-Butylbenzene=1.37 n-Propylbenzene=7.49 4-IPT=5.25 tert-Butylbenzene=0.45

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Monitoring Well Exploratory Samples																			
		WS-14-W-120	26-Jun-04	118-120	22.6	27.4	5.12	34.76	976.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=10.0 1,3,5-TMB=3.07 IPB=1.43 Chloroform=15.4 n-Propylbenzene=0.46 4-IPT=0.42
WS-14		WS-14-W-135	26-Jun-04	133-135	26.4 U	29.2	5.23	39.7	10,300.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=12.3 1,3,5-TMB=3.88 IPB=2.49 Chloroform=14.5 n-Propylbenzene=0.59 4-IPT=0.57
		WS-14-W-142	26-Jun-04	140-142	1,820.	867.	89.9	1,185.	13,100.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=112 1,3,5-TMB=45.3 IPB=25.3 n-Propylbenzene=4.9 4-IPT=2.09
		WS-14-W-150	28-Jun-04	148-150	2.24	0.86	0.2 U	0.4 U	16.2 U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=0.39
		WS-14-W-167	29-Jun-04	165-167	3.34	2.06	0.6	1.14	108.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		WS-14-Dup	29-Jun-04	165-167	3.17	2.04	0.6	1.26	97.1	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		WS-14-W-182	29-Jun-04	180-182	0.2 U	0.2 U	0.2 U	0.4 U	4.28	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		WS-14-W-197	6-Jul-04	195-197	0.89	0.2 U	0.2 U	0.4 U	8.2	28.3	24.5	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	MTBE=1.0
		WS-14-W-208	6-Jul-04	206-208	0.2 U	0.2 U	0.2 U	0.4 U	1. U	17.	19.3	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
WS-15	MFA	WS-15-W-65	10-Jul-04	63-65	11.9	9.67	0.91	10.76	395.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	8.84	0.3 U	3.14	0.2 U	1,2,4-TMB=3.35 1,3,5-TMB=1.06
		WS-15-W-80	10-Jul-04	78-80	102.	31.3	14.5	37.7	484.	0.2 U	0.3 U	0.3 U	0.3 U	34.8	3,780.	24.1	243,000.	10.	1,1,2-TCA=33.8 1,1-DCA=0.58 1,2,4-TMB=5.25 1,3,5-TMB=1.35 IPB=0.77 PCE=0.87

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Monitoring Well Exploratory Samples																			
WS-15	MFA	WS-15-W-108	10-Jul-04	106-108	0.54	0.73	0.2 U	0.81	118.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	28.	0.3 U	846.	29.2 U	U
		WS-15-W-125	12-Jul-04	123-125	0.2	0.2 U	0.2 U	0.4 U	1. U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.33	0.3 U	28.8 U	0.2 U	U
		WS-15-W-135	12-Jul-04	133-135	23.6	0.2 U	0.2 U	0.4 U	1. U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.49	0.3 U	1.23 U	0.2 U	U
		WS-15-W-158	14-Jul-04	156-158	0.2 U	0.2 U	0.2 U	0.4 U	1.17	12.7	33.9	0.73	13.3	0.2 U	0.2 U	0.3 U	3.35 U	0.2 U	MTBE=5.78
		WS-15-W-176	14-Jul-04	174-176	0.2 U	0.2 U	0.2 U	0.4 U	11.7 U	0.2 U	0.51	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	2.13 U	0.2 U	MTBE=5.20
		WS-15-W-193	15-Jul-04	191-193	0.2 U	0.2 U	0.2 U	0.4 U	1. U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=3.35 MTBE=4.39
		193-DUP	15-Jul-04		0.2 U	0.2 U	0.2 U	0.4 U	1.06	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=2.44 MTBE=4.65
WS-16	MFA	WS-16-W-72	22-Jul-04	70-72	147.	69.3	3.4	66.9	538.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=7.14 1,3,5-TMB=1.97 IPB=0.92
		WS-16-W-90	26-Jul-04	88-90	1,470.	811.	175.	818.	6,690.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	3.42 U	0.2 U	1,2,4-TMB=148 1,3,5-TMB=48.8 IPB=30.6 Chloroform=3.10 n-Butylbenzene=1.65 n-Propylbenzene=0.46 4-IPT=0.42
		WS-16-W-106	26-Jul-04	104-106	803.	29.6	0.2 U	27.37	341.	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=3.11 1,3,5-TMB=1.09 IPB=0.49
		WS-16-W-121	27-Jul-04	119-121	364.	15.7	0.2 U	9.46	15.7	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		WS-16-W-136A	28-Jul-04	134-136	8.71	2.47	0.76	1.48	15.4	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=4.15
		WS-16-W-136B	28-Jul-04	134-136	9.02	2.2	0.2 U	1.05	11.7 U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=1.65
		WS-16-W-148	29-Jul-04	146-148	0.92	0.2 U	0.2 U	0.4 U	4.7 U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=2.77
		WS-16-W-165	29-Jul-04	163-165	0.38	0.2 U	0.2 U	0.4 U	1. U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		WS-16-W-180	30-Jul-04	178-180	0.42	0.2 U	1.26	0.4 U	1.29 U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=15.0
		WS-16-W-227	2-Aug-04	225-227	0.2 U	0.2 U	0.2 U	0.4 U	1. U	0.2 U	0.37	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=1.90 MTBE=1.23

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Monitoring Well Exploratory Samples																			
WS-17	MFA	WS-17-W-46	5-Aug-04	44-46	16.6	0.2 U	0.2 U	0.4 U	2.55	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		WS-17-W-62.5	6-Aug-04	60.5-62.5	4.91	9.26	1.49	8.58	89.5	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	1,2,4-TMB=1.64
		WS-17-W-86	6-Aug-04	84-86	0.2 U	0.2 U	0.2 U	0.4 U	1. U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	U
		WS-17-W-100	9-Aug-04	98-100	0.2 U	0.2 U	0.2 U	0.4 U	1. U	0.2 U	0.3 U	0.3 U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=0.91
		WS-17-W-112	9-Aug-04	110-112	0.2 U	0.2 U	0.2 U	0.4 U	1. U	77.1	104.	4.08	57.2	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=0.39 MTBE=0.74
		112-DUP	9-Aug-04		0.2 U	0.2 U	0.2 U	0.4 U	1. U	79.3	97.5	3.66	58.6	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Chloroform=0.51 MTBE=0.62
RP-11	AMEC	120-01	15-Nov-05	27-31	0.13 U	0.12 U	0.05 U	0.18 J	0.33 J	0.05 U	0.07 U	0.04 U	0.07	0.12 U	0.08 U	0.1 U	0.06	0.1	1,2,4-TMB=0.23 Acetone=3.1 J Chloromethane=0.34 J
		122-01	15-Nov-05	96-100	0.13 U	0.12 U	0.27 J	0.08 U	0.32 J	0.05 U	0.07 U	0.04 U	0.07	0.12 U	0.08 U	0.1 U	0.06	0.1	Acetone=6.6 J Carbon disulfide=0.78 J Chloroform=0.3 J
		122-02	15-Nov-05	96-100	0.13 U	0.12 U	0.05 U	0.08 U	0.11 U	0.05 U	0.07 U	0.04 U	0.07	0.12 U	0.08 U	0.1 U	0.06	0.1	Carbonn disulfide=0.35 J Chloroform=0.3 J
		123-01	15-Nov-05	126-130	0.13 U	0.12 U	0.05 U	0.08 U	0.11 U	0.05 U	0.07 U	0.04 U	0.07	0.12 U	0.08 U	0.1 U	0.06	0.1	Acetone=7. J Carbon disulfide=1.8
		124-01	15-Nov-05	148-152	0.45 J	0.12 U	0.37 J	0.08 U	0.25 J	0.05 U	0.07 U	0.04 U	0.07	0.12 U	0.08 U	0.1 U	0.06	0.1	2-Butanone=8. Acetone=29. J Carbon disulfide=0.83 J Chloroform=0.39 J
		135-01	18-Nov-05	190-190	0.13 U	0.12 U	0.57 J	0.08 U	0.11 U	1.6	19.	0.04 U	3.5	0.12 U	0.61 J	0.1 U	1.2	0.1	Acetone=6.3 Chlorobenzene=1.6 MTBE=7.4 Styrene=0.21 J
		139-01	28-Nov-05	210-216	1.3 J	3.63 U	1.48 U	0.08 U	3.33 U	21.	210.	1.09 U	58.	3.63 U	6.6	3.03 U	4.5 J	2.3 J	MTBE=4.1

Table 2 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)					Halogenated VOCs (HVOCs)									Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Chloro-benzene	1,2-DCB	1,3-DCB	1,4-DCB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210	1,500	#	#	160	130	96	19	#	#	1,000	3	0.24	#
	DEQ 2004 AWQC (organism only)				51	2,100	15,000	#	#	1,600	1,300	960	190	#	#	10,000	30	2.4	#
Drinking Water																			
	MCL				5	700	1,000	10,000	0.2 [1]	100	600	#	75	#	70	100	5	2	#
	Tap Water PRGs				0.35	1,300	720	#	6.2	110	370	180	0.5	#	61	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	620 [2]	50 [2]	763 [2]	763 [2]	763 [2]	#	#	#	21,900 [2]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				130	7.3	9.8	#	12	64	14	71	15	#	#	590	47	#	#
Quality Control Samples (HAI Samples)																			
Trip Blank	HAI	5237-010802-302	2-Aug-01	-	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
Trip Blank	HAI	5237-010809-303	9-Aug-01	-	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
Trip Blank	HAI	5237-010815-308	15-Aug-01	-	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
Trip Blank	HAI	5237-010816-315	16-Aug-01	-	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
Trip Blank	HAI	5237-010821-322	21-Aug-01	-	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
Trip Blank	HAI	5237-010822-326	22-Aug-01	-	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
Trip Blank	HAI	5237-020318-330	18-Mar-02	-	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
Water EB	HAI	5237-010816-319	16-Aug-01	-	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
Water EB	HAI	5237-020318-332	18-Mar-02	-	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
Catch Basin Soil EB	Siltronic	01-72	19-Jun-01	-	5. U	5. U	5. U	10. U	5. U	5. U	5. U	5. U	5. U	5. U	5. U	5. U	5. U	5. U	U
Soil EB	HAI	5237-010821-324	21-Aug-01	-	1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U

Note:

AVOCs = aromatic volatile organic compounds
bgs = below ground surface
DCA = dichloroethane
DCB = dichlorobenzene
E = the result is estimated because the concentration exceeded the instrument calibration range.
DCDFM = dichlorodifluoromethane
DCE = dichloroethene
DEQ = Oregon Department of Environmental Quality
EB = equipment blank
EPA = U.S. Environmental Protection Agency
HAI = Hahn and Associates, Inc.
HVOCs = halogenated volatile organic compounds
IPB = isopropylbenzene
LTI = Limno-Tech, Inc.
MFA = Maul Foster & Alongi, Inc.
ppb = parts per billion
SW = Surface water sample above mudline [6]
TCE = trichloroethene
TMB = trimethylbenzene
U = not detected above detection limit indicated
ug/L=micrograms per liter
VOCs=volatile organic compounds

1 = MCL is based on benzo(a)pyrene
2 = Values were taken from Table 33c (OAR 340-41), which are Water Qualtiy Guidance Values, not criteria, that can be used in the application of Oregon's Narrative Toxics Criteria to waters of the sate in order to protect aquatic life.
3 = Screening Level Values are from *Portland Harbor Joint Source Control Strategy*, Final, December 2005
4 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved as potential ARARs under CERCLA. The final determination will be made in the EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be evaluated and prioritized on a case by case basis.
5 = For in-water borings, groundsurface refers to the base of the river, or mudline
6 = Surface water samples collected from TWP approximately one foot above mudline. Disturbance to sediments prior to sampling is highly likely, possibly resulting in results that are skewed high.

Table 3 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)
Polynuclear Aromatic Hydrocarbons by EPA Method 8270 SIM or 8270C

PAHs by EPA Method 8270 (SIM)					Analytical Results in ug/L (ppb)															
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carcinogenic PAHs								Non Carcinogenic PAHs								Total PAHs
					Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Indeno (1,2,3 cd) pyrene	Acenaph-thene	Acenaph-thylene	Anthracene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																					
Fish Consumption																					
	EPA 2004 NRWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
	Portland Harbor specific fish consumption rate				0.0018	0.0018	0.0018	#	0.0018	0.0018	0.0018	0.0018	99.	#	4,000.	14.	530.	#	#	400.	#
	DEQ 2004 AWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
Drinking Water																					
	MCL [2]				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	#
	Tap Water PRGs				0.092	0.0092	0.092	#	0.92	9.2	0.0092	0.092	370.	#	1,800.	1,500.	240.	6.2	#	180.	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																					
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	#	#	#	#	520. ##	#	#	#	#	620. ##	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [1]				0.027	0.014	#	#	#	#	#	#	#	#	0.73	#	3.9	12.	#	#	#
Push Probe Boring Samples (Upland)																					
P-1A	HAI	5237-020318-331	18-Mar-02	24-28	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	4.05 J	0.1 U	0.51 J	0.53 J	1.21 J	17.5 J	2.21 J	0.76 J	26.77
		5237-020318-333	18-Mar-02	54-58	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.1 U	0.11	0.12	0.1 U	0.35	0.35	0.14	1.18
(duplicate)		5237-020318-334	18-Mar-02	54-58	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.3	0.26	0.1 U	0.56
P-2	HAI	5237-010816-316	16-Aug-01	28-32	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U
		5237-010816-317	16-Aug-01	54-58	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	52.1	2. U	2.9	4.7	16.4	2. U	12.	5.2	93.3
		5237-010816-318	16-Aug-01	96-100	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	8.1	2. U	2.8	5.7	3.6	5.8	20.	5.6	51.6
P-3	HAI	5237-010821-321	21-Aug-01	28.5-32.5	4.2	4.23	2.12	2.51	2. U	5.34	2. U	2. U	62.	2. U	19.1	26.8	43.	214.	88.3	28.	499.6
		5237-010821-323	21-Aug-01	55-59	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	3.41	2. U	2. U	2.48	2. U	4.72	8.69	2.45	21.75
		5237-010821-325	21-Aug-01	96-100	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	7.56	2. U	2.94	5.55	3.95	12.	22.8	5.41	60.21
P-4	HAI	5237-010815-309	15-Aug-01	28-32	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	40.4	2. U	4.18	8.16	11.9	2.96	24.6	9.61	101.81
		5237-010815-310	15-Aug-01	50-54	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U
P-5	HAI	5237-010815-311	15-Aug-01	29-33	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	6.62	2. U	2. U	3.32	3.58	2. U	8.16	3.29	24.97
(duplicate)		5237-010815-312	15-Aug-01	29-33	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	5.76	2. U	2. U	3.63	2.99	2. U	7.56	3.99	23.93
		5237-010815-313	15-Aug-01	52-56	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U
		5237-010815-314	15-Aug-01	96-100	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	4.69	2. U	2.14	3.04	2.99	19.4	14.5	3.12	49.88
P-6	HAI	5237-010802-300	2-Aug-01	32-36	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.47	0.1 U	0.1 U	0.29	0.18	0.91	0.65	0.27	2.77
		5237-010802-301	2-Aug-01	46-50	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.15	0.16	0.1 U	0.31
P-7	HAI	5237-010809-307	9-Aug-01	58-62	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U
P-8	HAI	5237-010809-304	9-Aug-01	28-32	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	9.4	2. U	2. U	2.8	3.1	2. U	8.5	3.3	27.1
		5237-010809-305	9-Aug-01	50-54	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U
		5237-010809-306	9-Aug-01	80-84	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2.1	2. U	2.1
P-9	HAI	5237-010816-320	16-Aug-01	31-35	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U
GP-02-02	LTI	GP02-02	20-Mar-02	23-27	2.71	2.48	2. U	2. U	2. U	3.63		2. U	62.4	167.	20.7	17.6	74.2	2. U	139.	19.6	509.32
			21-Mar-02	56-60	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	4.24	0.84	0.1 U	0.11	0.22	1,030.	0.2	0.11	1,035.72
			21-Mar-02	96-100	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	145.	0.2	0.1 U	145.2

Table 3 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)
Polynuclear Aromatic Hydrocarbons by EPA Method 8270 SIM or 8270C

PAHs by EPA Method 8270 (SIM)					Analytical Results in ug/L (ppb)															
					Carcinogenic PAHs								Non Carcinogenic PAHs							
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Indeno (1,2,3 cd) pyrene	Acenaph-thene	Acenaph-thylene	Anthracene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	Total PAHs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																					
Fish Consumption																					
	EPA 2004 NRWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
	Portland Harbor specific fish consumption rate				0.0018	0.0018	0.0018	#	0.0018	0.0018	0.0018	0.0018	99.	#	4,000.	14.	530.	#	#	400.	#
	DEQ 2004 AWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
Drinking Water																					
	MCL [2]				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	#
	Tap Water PRGs				0.092	0.0092	0.092	#	0.92	9.2	0.0092	0.092	370.	#	1,800.	1,500.	240.	6.2	#	180.	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																					
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	#	#	#	#	520. ##	#	#	#	#	620. ##	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [1]				0.027	0.014	#	#	#	#	#	#	#	#	0.73	#	3.9	12.	#	#	#
Push Probe Boring Samples (Upland)																					
GP-02-03	LTI	GP02-03	21-Mar-02	31-35	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.19	0.1 U	0.1 U	0.38	0.1 U	0.94	0.31	0.49	2.31
			22-Mar-02	56-60	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.62	0.1 U	0.1 U	0.15	0.1 U	0.16	0.1 U	0.19	1.12
			22-Mar-02	96-100	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		0.1 U	0.1 U	0.1 U	0.1 U	0.21	0.1 U	0.22	0.1	0.31	0.84
GP-4	MFA	GP4-W-68.0	27-Sep-02	66-70	0.03	0.032	0.024	0.023	0.02 U	0.034		0.023	0.05	0.02 U	0.025	0.098	0.02 U	0.2	0.13	0.11	0.779
		GP4-W-98.0	30-Sep-02	96-100	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U		0.02 U	0.036	0.02 U	0.02 U	0.02 U	0.02 U	0.4	0.027	0.02 U	0.463
GP-5	MFA	GP5-W-68.0	7-Oct-02	66-70	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U		0.02 U	0.02 U	0.02 U	0.02 U	0.026	0.02 U	0.02 U	0.02 U	0.033	0.059
		GP5-W-95.0	8-Oct-02	93-97	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U		0.02 U	0.21	0.02 U	0.02 U	0.039	0.02 U	0.14	0.02 U	0.043	0.432
GP-6	MFA	GP6-W-74.0	1-Oct-02	72-76	0.07	0.073	0.047	0.05	0.051	0.08		0.044	0.049	0.02 U	0.064	0.19	0.028	0.2	0.2	0.24	1.386
		GP6-W-98.0	1-Oct-02	96-100	0.17	0.16	0.094	0.11	0.089	0.2		0.1	0.45	0.045	0.25	0.73	0.2	0.33	1.2	0.85	4.978
		GP-DUP	1-Oct-02	96-100	0.22	0.2	0.13	0.13	0.12	0.26		0.11	0.48	0.053	0.34	0.95	0.24	0.39	1.5	1.2	6.323
GP-7	MFA	GP7-W-78.0	3-Oct-02	76-80	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.023		0.02 U	0.02 U	0.02 U	0.02 U	0.05	0.02 U	0.036 U	0.03	0.056	0.159
		GP7-W-98.0	4-Oct-02	96-100	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	U
SIL-01	AMEC	101-01	1-Nov-05	26.5-31.5	36.	39.	25. J	20. J	29. J	43.	4.6 J	14.	210.	5.5 J	51.	190.	53. J	1,800.	370.	140. J	3,030.1
		115-01	11-Nov-05	96-100	1.9 U	1.8 U	3.9 U	2.4 U	2.4 U	1.5 U	2.1 U	2.2 U	0.62 J	2.1 U	2. U	2.1 U	2.4 U	3.9 J	0.74 J	1.9 UJ	5.26
		109-01	7-Nov-05	207-208	1.9 U	1.8 U	3.9 U	2.4 U	2.4 U	1.5 U	2.1 U	2.2 U	2.2 U	2.1 U	2. U	2.1 U	2.4 U	2.3 U	1.9 U	1.9 UJ	U
		114-01	8-Nov-05	212-217	1.9 U	1.8 U	3.9 U	2.4 U	2.4 U	1.5 U	2.1 U	2.2 U	2.2 U	2.1 U	2. U	2.1 U	2.4 U	2.3 U	1.9 U	1.9 UJ	U
SIL-02	AMEC	127-01	17-Nov-05	28-32	1.9 U	1.8 U	3.9 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	3.8 J	2.1 U	0.47 J	1.3 J	1.3 J	1.3 J	4.1 J	1.8 J	14.07
		131-01	17-Nov-05	96-100	1.9 U	1.8 U	3.9 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	0.51 J	2.1 U	2. U	0.53 J	2.4 U	4.2 J	1.5 J	0.63 J	7.37
		119-01	14-Nov-05	214-216	1.9 U	1.8 U	3.9 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	1.1 J	2.1 U	2. U	2.1 U	2.4 U	5.3 J	1.5 J	1.9 U	7.9
SIL-03	AMEC	125-01	16-Nov-05	31-35	1.9 U	1.8 U	3.9 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	2.2 U	2.1 U	2. U	2.1 U	2.4 U	0.76 J	0.66 J	1.9 U	1.42
		126-01	16-Nov-05	95-99	1.9 U	1.8 U	3.9 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	2.2 U	2.1 U	2. U	2.1 U	2.4 U	0.77 J	1.9 U	1.9 U	0.77
		142-01	6-Dec-05	110-130	1.9 U	1.8 U	3.9 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	2.2 U	2.1 U	2. U	2.1 U	2.4 U	2.3 U	1.9 U	1.9 U	U
SIL-04	AMEC	136-01	18-Nov-05	26-30	1.9 U	1.8 U	3.9 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	7.6 J	2.1 U	2. U	0.89 J	2.4 U	2.3 U	3.4 J	0.96 J	12.85
		137-01	21-Nov-05	70-74	1.9 U	1.8 U	3.9 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	2.2 U	2.1 U	2. U	2.1 U	2.4 U	2.3 U	1.9 U	1.9 U	U
		144-01	9-Dec-05	80-89	1.9 U	1.8 U	3.9 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	2.2 U	2.1 U	2. U	2.1 U	2.4 U	2.3 U	1.9 U	1.9 U	U

Table 3 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)
Polynuclear Aromatic Hydrocarbons by EPA Method 8270 SIM or 8270C

PAHs by EPA Method 8270 (SIM)					Analytical Results in ug/L (ppb)																
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carcinogenic PAHs								Non Carcinogenic PAHs								Total PAHs
					Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Indeno (1,2,3 cd) pyrene	Acenaph-thene	Acenaph-thylene	Anthracene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																					
Fish Consumption																					
	EPA 2004 NRWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
	Portland Harbor specific fish consumption rate				0.0018	0.0018	0.0018	#	0.0018	0.0018	0.0018	0.0018	99.	#	4,000.	14.	530.	#	#	400.	#
	DEQ 2004 AWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
Drinking Water																					
	MCL [2]				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	#
	Tap Water PRGs				0.092	0.0092	0.092	#	0.92	9.2	0.0092	0.092	370.	#	1,800.	1,500.	240.	6.2	#	180.	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																					
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	#	#	#	#	520. ##	#	#	#	#	620. ##	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [1]				0.027	0.014	#	#	#	#	#	#	#	#	0.73	#	3.9	12.	#	#	#
Push Probe Boring Samples (In-water)																					
GP-25	MFA	GP-25-W-2	30-Sep-04	0-2	2.35	1.43	1.56	1.39	0.349	2.35	0.11	0.458	61.	0.388	8.32	15.9	23.7	2.51	47.1	16.3	184.757
		GP-25-W-36	30-Sep-04	34-36	2.91	3.61	2.97	2.67	0.944	2.88	0.391	1.94	25.7	0.334	7.77	15.7	9.72	40.8	43.2	16.7	176.299
		GP-25-W-74	1-Oct-04	72-74	3.94	4.35	3.87	2.88	1.13	3.77	0.503	2.16	19.2	0.533	7.33	16.4	9.96	59.1	42.4	17.4	192.766
		GP-25-W-89	1-Oct-04	87-89	4.38	4.57	3.92	3.65	1.18	4.6	0.507	2.53	101.	0.825	15.2	26.4	40.9	397.	108.	27.5	739.632
		GP-25-W-116	1-Oct-04	114-116	0.385	0.34	0.317	0.328	0.102	0.363	0.0567 U	0.181	13.5	0.0907	1.98	5.19	5.11	100.	20.3	5.4	153.4057
		GP-25-W-151	30-Sep-04	149-151	0.925	1.2	1.02	0.972	0.315	0.944	0.133	0.686	7.01	0.114	1.87	5.75	3.2	47.8	14.5	6.13	91.883
GP-26	MFA	GP-26-W-2	6-Oct-04	0-2	9.02	8.31	7.28	8.71	2.28	10.6	0.937	5.82	38.	1.27	17.7	32.2	20.1	22.6	73.7	35.8	288.507
		GP-26-W-2D	6-Oct-04	0-2	11.7	10.1	8.2	10.9	3.04	12.2	0.444	7.62	46.8	1.71	22.1	37.6	25.9	30.5	67.5	44.	332.694
		GP-26-W-30	6-Oct-04	28-30	0.101	0.151	0.131	0.161	0.0503 U	0.101	0.503 U	0.101	1.9	0.0503 U	0.0905	1.4	0.191	0.854	1.74	2.29	9.1105
		GP-26-W-83	6-Oct-04	81-83	4.29	4.16	3.45	5.12	1.22	5.22	0.367	3.58	169.	3.32	18.5	25.1	56.4	1,580.	124.	27.3	2,027.447
		GP-26-W-110	6-Oct-04	108-110	15.5	17.5	13.5	19.8	4.87	18.3	0.394	13.9	65.5	3.37	23.3	50.5	24.2	481.	81.8	52.8	872.334
		GP-26-W-128	5-Oct-04	126-128	17.7	28.6	23.8	16.5	5.78	16.7	2.72	12.4	128.	41.7	41.4	89.7	56.8	941.	223.	94.6	1,728.
GP-27	MFA	GP-27-W-2	12-Oct-04	0-2	22.	24.6	20.2	22.7	6.28	22.9	0.16	15.8	317.	3.54	36.4	63.3	61.2	2,910.	282.	67.7	3,859.98
		GP-27-W-15	12-Oct-04	13-15	1.77	1.56	1.3	1.47	0.327	2.13	0.135	0.596	76.2	0.356	7.24	12.	20.3	150.	43.8	12.6	331.784
		GP-27-W-34	12-Oct-04	32-34	7.12	7.29	5.49	6.67	2.36	7.05	0.438	4.4	329.	1.17	24.7	35.	55.1	3,730.	122.	37.	4,374.788
GP-27	MFA	GP-27-W-59	12-Oct-04	57-59	5.55	5.7	4.84	5.6	1.73	6.44	0.302	3.75	226.	0.888	22.2	32.1	45.1	1,760.	115.	34.5	2,269.7
		GP-27-W-84	12-Oct-04	82-84	2.5	2.19	1.89	2.06	0.562	2.72	0.241	1.37	64.8	0.431	10.1	16.3	23.9	313.	67.6	17.4	527.064
		GP-27-W-110	11-Oct-04	108-110	14.2	18.4	15.7	11.8	4.46	13.3	2.03	9.03	244.	2.8	36.4	67.4	74.2	2,240.	237.	66.3	3,057.02
GP-28	MFA	GP-28-W-2	15-Oct-04	0-2	0.438	0.333	0.314	0.2	0.105	0.428	0.0479 U	0.143	40.9	0.438	3.76	7.72	16.7	0.618	21.	7.	100.097
		GP-28-W-36	15-Oct-04	34-36	0.676	0.743	0.638	0.457	0.219	1.06	0.0857	0.333	8.25	0.124	1.1	3.69	3.88	3.4	6.56	4.	35.2157
		GP-28-W-74	15-Oct-04	72-74	4.33	4.53	3.84	2.36	1.21	3.98	0.456	1.83	15.7	0.77	7.36	16.1	9.57	33.8	46.	18.1	169.936
		GP-28-W-89	15-Oct-04	87-89	0.134	0.115	0.115	0.0764	0.0478 U	0.134	0.0478 U	0.0573	2.97	0.0478 U	1.17	1.69	1.48	11.3	7.5	1.78	28.5217
		GP-28-W-116	15-Oct-04	114-116	7.23	6.82	5.58	6.45	2.06	8.55	1.08	4.36	24.7	0.457	12.	25.9	13.8	53.7	50.6	28.5	251.787
		GP-28-W-116D	15-Oct-04	114-116	28.	32.4	27.3	18.3	7.85	25.5	2.79	12.6	54.4	3.76	37.6	95.2	36.9	76.2	201.	105.	764.8
		GP-28-W-160	14-Oct-04	158-160	1.61	1.64	1.27	1.9	0.205	1.99	0.0782	1.18	6.73	0.0587	3.06	8.78	3.66	2.26	19.5	9.14	63.0619
GP-29	MFA	GP-29-W-2	20-Oct-04	0-2	30.2	35.3	28.7	32.7	10.1	32.3	5.02	23.3	420.	6.57	40.7	75.7	68.9	9,260.	353.	78.2	10,500.69
		GP-29-W-22	20-Oct-04	20-22	7.28	9.75	8.39	5.71	2.58	6.98	0.933	4.3	195.	1.75	20.1	38.5	59.7	2,170.	145.	38.8	2,714.773
		GP-29-W-46	21-Oct-04	44-46	20.5	24.2	19.7	21.8	7.1	23.2	3.27	15.5	339.	4.34	32.5	59.4	58.9	5,290.	99.4	61.6	6,080.41
		GP-29-W-68	21-Oct-04	66-68	9.39	10.9	8.77	9.5	3.21	10.8	1.42	6.72	223.	2.23	24.2	39.8	46.5	2,260.	84.7	41.5	2,782.64
		GP-29-W-88	21-Oct-04	86-88	12.6	15.2	12.	12.9	4.83	14.9	1.95	9.25	358.	3.41	28.4	48.8	61.3	5,440.	100.	48.7	6,172.24
		GP-29-W-117	20-Oct-04	115-117	10.9	12.5	9.35	12.	4.08	11.	1.76	8.05	432.	3.41	28.8	44.6	71.	8,020.	227.	43.8	8,940.25
GP-30	MFA	GP-30-W-2	22-Oct-04	0-2	10.8	11.4	9.96	6.72	2.96	11.5	1.19	4.75	125.	1.97	26.6	45.4	55.6	28.3	158.	48.6	548.75
		GP-30-W-25	25-Oct-04	23-25	9.19	7.2	5.98	7.03	2.07	10.5	1.06	4.88	21.8	1.16	12.	28.4	11.3	3.27	55.6	32.9	214.34
		GP-30-W-50	25-Oct-04	48-50	0.0763	0.0572	0.0572	0.0477 U	0.0477 U	0.0572	0.0477 U	0.0477 U	0.572	0.0477 U	0.124	0.296	0.267	2.76	0.915	0.296	5.4779
		GP-30-W-75	25-Oct-04	73-75	0.485	0.532	0.504	0.314	0.152	0.456	0.057	0.238	0.997	0.0856	0.504	1.9	0.58	0.2	3.68	2.23	12.9146
		GP-30-W-95	25-Oct-04	93-95	0.391	0.43	0.411	0.254	0.127	0.391	0.0489 U	0.186	1.22	0.0684	0.459	1.59	0.753	0.528	3.45	1.7	11.9584
		GP-30-W-118	22-Oct-04	116-118	0.591	0.707	0.62	0.426	0.213	0.707	0.0774	0.319	3.63	0.116	0.794	2.03	1.35	3.04	5.18	2.22	22.0204

Table 3 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)
Polynuclear Aromatic Hydrocarbons by EPA Method 8270 SIM or 8270C

PAHs by EPA Method 8270 (SIM)					Analytical Results in ug/L (ppb)																
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carcinogenic PAHs								Non Carcinogenic PAHs								Total PAHs
					Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Indeno (1,2,3 cd) pyrene	Acenaph-thene	Acenaph-thylene	Anthracene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																					
Fish Consumption																					
	EPA 2004 NRWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
	Portland Harbor specific fish consumption rate				0.0018	0.0018	0.0018	#	0.0018	0.0018	0.0018	0.0018	99.	#	4,000.	14.	530.	#	#	400.	#
	DEQ 2004 AWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
Drinking Water																					
	MCL [2]				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	#
	Tap Water PRGs				0.092	0.0092	0.092	#	0.92	9.2	0.0092	0.092	370.	#	1,800.	1,500.	240.	6.2	#	180.	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																					
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	#	#	#	#	520. ##	#	#	#	#	620. ##	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [1]				0.027	0.014	#	#	#	#	#	#	#	#	0.73	#	3.9	12.	#	#	#
Push Probe Boring Samples (In-water)																					
GP-31	MFA	GP-31-W-2	26-Oct-04	0-2	3.35	3.98	3.36	2.81	1.02	3.13	0.41	2.14	12.8	0.5	4.79	13.	5.88	38.1	27.2	11.9	134.37
		GP-31-W-22	27-Oct-04	20-22	0.05	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	69.	0.2	2.39	1.36	17.2	61.1	17.8	1.34	170.44
		GP-31-W-46	27-Oct-04	44-46	0.75	0.76	0.63	0.53	0.21	0.93	0.08	0.39	49.4	0.23	5.87	6.6	15.3	327.	37.4	6.61	452.69
		GP-31-W-69	27-Oct-04	67-69	1.2	0.78	0.69	0.57	0.23	1.31	0.08	0.42	42.5	0.24	5.96	8.3	13.8	274.	35.9	8.68	394.66
		GP-31-W-89	27-Oct-04	87-89	1.66	1.71	1.48	1.2	0.49	1.88	0.18	0.9	85.3	0.46	11.1	12.6	27.6	535.	62.	12.9	756.46
		GP-31-W-113	26-Oct-04	111-113	3.83	9.9	12.1	7.99	3.61	4.05	1.25	5.54	71.8	0.971 U	13.9	22.	29.6	695.	71.7	20.6	972.87
GP-32	MFA	GP-32-W-2	28-Oct-04	0-2	4.46	3.13	3.1	2.28	1.14	5.29	0.164	1.45	17.	3.11	7.04	19.	14.8	40.2	12.6	21.9	156.664
		GP-32-W-24	28-Oct-04	22-24	0.231	0.132	0.121	0.0878	0.0549 U	0.22	0.0549 U	0.659	24.	0.187	3.33	4.94	10.4	127.	20.9	5.08	197.2878
		GP-32-W-46	29-Oct-04	44-46	0.11	0.0699	0.0599	0.0499	0.0499 U	0.0998	0.0499 U	0.0499 U	2.99	0.0499 U	0.629	1.83	1.52	3.93	4.32	2.07	17.6785
		GP-32-W-70	29-Oct-04	68-70	0.0482	0.0482	0.0482	0.0482 U	0.0482 U	0.0482 U	0.0482 U	0.0482 U	0.809	0.0482 U	0.241	0.318	0.385	1.41	1.17	0.279	4.7566
		GP-32-W-90	29-Oct-04	88-90	0.0479	0.0479	0.0479	0.0479 U	0.0479 U	0.0479	0.0479 U	0.0479 U	1.34	0.0479 U	0.221	1.06	0.575	0.911	2.07	1.24	7.6086
		GP-32-W-121	28-Oct-04	119-121	1.03	0.317	0.298	0.231	0.134	1.04	0.0865	0.183	24.6	0.144	5.28	7.31	9.93	69.7	30.1	7.38	157.7635
GP-55	MFA	GP55-W-1	16-May-05	0-1	0.495	0.343	0.286	0.2	0.124	0.562	0.0476 U	0.133	16.6	0.19	3.12	5.28	8.6	0.229	14.1	5.43	55.692
GP-61	MFA	GP61-W-1	18-May-05	0-1	0.0775	0.0484 U	0.0484 U	0.0484 U	0.0484 U	0.086	0.0484 U	0.0483 U	27.	0.0775	0.521	0.772	7.29	0.0678	3.13	0.688	39.7098
GP-62	MFA	GP62-W-1	18-May-05	0-1	1.91	0.881	0.901	0.362	0.255	1.22	0.0686	0.274	61.4	0.372	9.33	11.8	36.6	0.46	64.7	12.8	203.3336
GP-63	MFA	GP63-W-1	19-May-05	0-1	0.182	0.067	0.0766	0.0479 U	0.0479 U	0.249	0.0479 U	0.0479 U	3.29	0.067	1.99	0.92	1.17	9.09	3.17	0.91	21.1816
GP-64	MFA	GP64-W-1	19-May-05	0-1	3.68	3.57	3.11	2.24	0.836	2.9	0.327	1.62	172.	0.807	12.5	15.9	50.2	5,310.	93.9	19.	5,692.59
GP-68	MFA	GP68-W-1	23-May-05	0-1	21.7	24.2	22.5	15.	5.2	15.5	2.18	10.7	174.	6.72	32.2	76.7	65.8	7,570.	200.	92.1	8,334.5
GP-69	MFA	GP69-W-1	24-May-05	0-1	12.5	15.2	12.9	11.2	4.29	14.9	1.54	7.72	262.	2.08	31.2	50.5	71.3	5,690.	182.	68.7	6,438.03
GP-70	MFA	GP70-W-1	24-May-05	0-1	10.9	13.5	11.8	9.76	3.64	12.9	1.35	6.76	85.1	1.87	25.5	43.6	29.6	1,810.	120.	61.	2,247.28
GP-73	MFA	GP73-W-1	25-May-05	0-1	32.3	37.8	33.3	28.8	9.	34.5	3.71	16.9	399.	4.44	63.8	106.	108.	11,700.	362.	148.	13,087.55
GP-75	MFA	GP75-W-1	26-May-05	0-1	1.21	1.17	1.07	0.86	0.33	1.34	0.14	0.62	16.6	0.22	2.89	4.79	5.59	21.5	16.8	6.41	81.54
GP-76	MFA	GP76-W-1	27-May-05	0-1	0.84	0.81	0.68	0.7	0.26	1.08	0.1	0.46	4.27	0.13	1.57	3.76	1.69	9.02	9.8	6.31	41.22
GP-81	MFA	GP81-W-1	31-May-05	0-1	3.82	4.59	3.97	4.05	1.23	4.4	0.48	2.71	123.	1.31	14.	18.8	30.9	2,580.	85.5	22.1	2,899.63
GP-82	MFA	GP82-W-1	1-Jun-05	0-1	2.59	3.09	2.76	2.5	0.826	2.6	0.327	1.66	111.	1.74	8.12	11.7	33.	1,130.	63.5	16.2	1,390.787
Monitoring Well Exploratory Samples																					
WS-14	MFA	WS14-W-208	6-Jul-04	206-208	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.06		0.05 U	0.05	0.05 U	0.67	0.21	0.05	1.04
WS-15	MFA	WS15-W-193	15-Jul-04	191-193	0.0491 U	0.0491 U	0.0491 U	0.0491 U	0.0491 U	0.0491 U	0.0491 U	0.0491 U	0.157		0.0687	0.128	0.147	0.393	1.26	0.137	2.2907
		WS15-W-193-DU	15-Jul-04	191-193	0.0482 U	0.0482 U	0.0482 U	0.0482 U	0.0482 U	0.0482 U	0.0482 U	0.0482 U	0.154		0.0771	0.164	0.135	0.665	1.17	0.174	2.5391
WS-16	MFA	WS16-W-227	2-Aug-04	225-227	0.12	0.07	0.07	0.07	0.06	0.1	0.08	0.08	0.2		0.2	0.4	0.22	0.39	1.81	0.38	4.25
WS-17	MFA	WS17-W-112	9-Aug-04	110-112	0.06	0.05 U	0.05 U	0.05 U	0.05 U	0.06	0.05 U	0.05 U	0.05 U		0.24	0.59	0.23	0.76	2.21	0.57	4.72
RP-11	AMEC	120-01	15-Nov-05	27-31	1.9 U	1.8 U	2.4 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	21.	2.1 U	2. U	1.2 J	4. J	2.3 U	10. J	1.1 J	37.3
		122-01	15-Nov-05	96-100	1.9 U	1.8 U	2.4 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	2.2 U	2.1 U	2. U	2.1 U	2.4 U	2.3 U	1.9 U	1.9 U	U
		122-02	15-Nov-05	96-100	1.9 U	1.8 U	2.4 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	2.2 U	2.1 U	2. U	2.1 U	2.4 U	2.3 U	1.9 U	1.9 U	U
		139-01	28-Nov-05	210-216	1.9 U	1.8 U	2.4 U	2.1 U	2.4 U	1.5 U	2.1 U	2.2 U	2.2 U	2.1 U	2. U	2.1 U	2.4 U	2.3 U	1.9 U	1.9 U	U

Table 3 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)
Polynuclear Aromatic Hydrocarbons by EPA Method 8270 SIM or 8270C

PAHs by EPA Method 8270 (SIM)					Analytical Results in ug/L (ppb)															
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carcinogenic PAHs								Non Carcinogenic PAHs								Total PAHs
					Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Indeno (1,2,3 cd) pyrene	Acenaph-thene	Acenaph-thylene	Anthracene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																					
Fish Consumption																					
	EPA 2004 NRWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
	Portland Harbor specific fish consumption rate				0.0018	0.0018	0.0018	#	0.0018	0.0018	0.0018	0.0018	99.	#	4,000.	14.	530.	#	#	400.	#
	DEQ 2004 AWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
Drinking Water																					
	MCL [2]				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	#
	Tap Water PRGs				0.092	0.0092	0.092	#	0.92	9.2	0.0092	0.092	370.	#	1,800.	1,500.	240.	6.2	#	180.	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																					
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	#	#	#	#	520. ##	#	#	#	#	620. ##	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [1]				0.027	0.014	#	#	#	#	#	#	#	#	0.73	#	3.9	12.	#	#	#
Quality Control Samples (HAI)																					
Trip Blank	HAI	5237-010821-322	21-Aug-01	-	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U
Water EB	HAI	5237-010816-319	16-Aug-01	-	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U
Water EB	HAI	5237-020318-332	18-Mar-02	-	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U
Catch Basin Soil EB	Siltronic	01-72	19-Jun-01	-	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U
Soil EB	HAI	5237-010821-324	21-Aug-01	-	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	U

Note:
bgs = below ground surface
DEQ = Oregon Department of Environmental Quality
EB = equipment blank
EPA = U.S. Environmental Protection Agency
HAI = Hahn and Associates, Inc.
LTI = Limno-Tech, Inc.
MFA = Maul Foster & Alongi, Inc.
PAHs = polynuclear aromatic hydrocarbons
ppb = parts per billion
U = not detected above detection limit indicated
ug/L = micrograms per liter

1 = Values were taken from Table 33c (OAR 340-41), which are Water Quality Guidance Values, not criteria, that can be used in application of Oregon's Narrative Toxics Criteria to waters of the state in order to protect aquatic life
2 = MCL is based on benzo(a)pyrene
3 = Screening Level Values are from *Portland Harbor Joint Service Control Strategy*, Final, December 2005
4 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved) as potential ARARs under CERCLA. The final determination will be made in the EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be evaluated and prioritized on a case by case basis.
5 = For in-water borings, ground surface refers to the base of the river, or mud line

Table 4 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270C					Analytical Results in ug/L (ppb)									
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carbazole	Dibenzo-furan	2-Methyl-naphthalene	1,2-Dichloro-benzene	1,4-Dichloro-benzene	Bis (2-ethyl hexyl) phthalate	Butyl-benzyl-phthalate	Diethyl-phthalate	Bis (2-chloroiso propyl)ether	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]														
Fish Consumption														
	EPA 2004 NRWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
	Portland Harbor specific fish consumption rate				#	#	#	#	19	0.22	19	4,400	0.053	#
	DEQ 2004 AWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
Drinking Water														
	MCL				#	#	0.2 [1]	#	75	6	#	#	#	#
	Tap Water PRGs				3.4	12	#	#	0.5	4.8	7,300	29,000	0.01	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]														
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	763 [6]	3 [6]	3 [6]	3 [6]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [6]				#	#	2.1 [2]	#	71	#	19	210	#	#
Push Probe Boring Samples (Upland)														
P-1A	HAI	5237-020318-331	18-Mar-02	24-28	4. U	2. U	3.5	2. U	2. U	2. U	2. U	2. U	2. U	See PAH Table
		5237-020318-333	18-Mar-02	54-58	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	See PAH Table
P-2	HAI	5237-010816-316	16-Aug-01	28-32	4. U	2. U	2. U	2. U	2. U	2. U	2.	2. U	8.4 U,B	See PAH Table
		5237-010816-317	16-Aug-01	54-58	4. U	2. U	2. U	2. U	2. U	2. U	2.4	2. U	10. U,B	See PAH Table
		5237-010816-318	16-Aug-01	96-100	4. U	2. U	5.8	2. U	2. U	2. U	3.4	2. U	11.1 U,B	See PAH Table
P-3	HAI	5237-010821-321	21-Aug-01	28.5-32.5	56.5	6.29	82.8	2. U	2. U	2. U	2. U	2. U	2. U	See PAH Table
		5237-010821-323	21-Aug-01	55-59	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	See PAH Table
		5237-010821-325	21-Aug-01	96-100	4. U	2. U	3.21	2. U	2. U	5.57	3.64	2. U	2. U	See PAH Table
P-4	HAI	5237-010815-309	15-Aug-01	28-32	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	17. U,B	See PAH Table
		5237-010815-310	15-Aug-01	50-54	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	15.9 U,B	See PAH Table
P-5	HAI	5237-010815-311	15-Aug-01	29-33	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	11.1 U,B	See PAH Table
(duplicate)		5237-010815-312	15-Aug-01	29-33	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	11.5 U,B	See PAH Table
		5237-010815-313	15-Aug-01	52-56	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	11. U,B	See PAH Table
		5237-010815-314	15-Aug-01	96-100	4. U	2. U	4.55	2. U	2. U	2. U	3.52	2. U	12.1 U,B	See PAH Table
P-7	HAI	5237-010809-307	9-Aug-01	58-62	4. U	2. U	0. U	2. U	2. U	2. U	2. U	3.9	2. U	See PAH Table
P-8	HAI	5237-010809-304	9-Aug-01	28-32	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	See PAH Table
		5237-010809-305	9-Aug-01	50-54	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	See PAH Table

Table 4 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270C					Analytical Results in ug/L (ppb)									
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carbazole	Dibenzo-furan	2-Methyl-naphthalene	1,2-Dichloro-benzene	1,4-Dichloro-benzene	Bis (2-ethyl hexyl) phthalate	Butyl-benzyl-phthalate	Diethyl-phthalate	Bis (2-chloroiso propyl)ether	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]														
Fish Consumption														
	EPA 2004 NRWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
	Portland Harbor specific fish consumption rate				#	#	#	#	19	0.22	19	4,400	0.053	#
	DEQ 2004 AWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
Drinking Water														
	MCL				#	#	0.2 [1]	#	75	6	#	#	#	#
	Tap Water PRGs				3.4	12	#	#	0.5	4.8	7,300	29,000	0.01	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]														
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	763 [6]	3 [6]	3 [6]	3 [6]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [6]				#	#	2.1 [2]	#	71	#	19	210	#	#
Push Probe Boring Samples (Upland)														
P-8	HAI	5237-010809-306	9-Aug-01	80-84	4. U	2. U	2. U	31.1	9.3	2. U	2. U	5.1	2. U	See PAH Table
P-9	HAI	5237-010816-320	16-Aug-01	31-35	4. U	2. U	2. U	2. U	2. U	2. U	22.2	7.1	10.8 U,B	See PAH Table
GP02-01	LTI	GP02-01	20-Mar-02	35-38				1. U	1. U					See PAH Table
		GP02-01 DUP	20-Mar-02	35-38				1. U	1. U					See PAH Table
GP-02-02	LTI	GP02-02	20-Mar-02	23-27				1,000. U	1,000. U					See PAH Table
			21-Mar-02	56-60				250. U	250. U					See PAH Table
			21-Mar-02	96-100				1. U	1. U					See PAH Table
GP-02-03	LTI	GP02-03	21-Mar-02	29-33				1. U	1. U					See PAH Table
			22-Mar-02	54-58				1. U	1. U					See PAH Table
			22-Mar-02	94-98										See PAH Table
GP-4	MFA	GP4-W-68.0	27-Sep-02	66-70		0.02 U	0.16	0.5 U	0.5 U					See PAH Table
		GP4-W-98.0	30-Sep-02	96-100		0.02 U	0.04	0.5 U	0.5 U					See PAH Table
GP-5	MFA	GP5-W-68.0	7-Oct-02	66-70		0.02 U	0.02 U	0.5 U	0.5 U					See PAH Table
		GP5-W-95.0	8-Oct-02	93-97		0.02 U	0.02 U	25. U	25. U					See PAH Table
GP-6	MFA	GP6-W-74.0	1-Oct-02	72-76		0.02 U	0.02	0.5 U	0.5 U					See PAH Table
		GP6-W-98.0	1-Oct-02	96-100		0.04	0.13	25. U	25. U					See PAH Table
		GP-DUP	1-Oct-02	96-100		0.04	0.14	25. U	25. U					See PAH Table

Table 4 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270C					Analytical Results in ug/L (ppb)									
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carbazole	Dibenzo-furan	2-Methyl-naphthalene	1,2-Dichloro-benzene	1,4-Dichloro-benzene	Bis (2-ethyl hexyl) phthalate	Butyl-benzyl-phthalate	Diethyl-phthalate	Bis (2-chloroiso propyl)ether	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]														
Fish Consumption														
	EPA 2004 NRWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
	Portland Harbor specific fish consumption rate				#	#	#	#	19	0.22	19	4,400	0.053	#
	DEQ 2004 AWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
Drinking Water														
	MCL				#	#	0.2 [1]	#	75	6	#	#	#	#
	Tap Water PRGs				3.4	12	#	#	0.5	4.8	7,300	29,000	0.01	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]														
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	763 [6]	3 [6]	3 [6]	3 [6]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [6]				#	#	2.1 [2]	#	71	#	19	210	#	#
Push Probe Boring Samples (Upland)														
GP-7	MFA	GP7-W-78.0	3-Oct-02	76-80		0.02 U	0.02 U	13. U	13. U					See PAH Table
		GP7-W-98.0	4-Oct-02	96-100		0.02 U	0.02 U	13. U	13. U					See PAH Table
SIL-01	AMEC	101-01	1-Nov-05	26.5-31.5		15.	300. U	1.1 U	1.7 U	2.3 J	1.6 U	2.3 U	1.7 U	See PAH Table
		115-01	11-Nov-05	96-100		2.3 U	0.58 J	1.1 U	1.7 U	2.6 U	1.6 U	0.56 J	1.7 U	
		109-01	7-Nov-05	207-208		2.3 U	2.2 U	60.	27.	2.6 U	1.6 U	2.3 U	1.7 U	
		114-01	8-Nov-05	212-217		2.3 U	2.2 U	59.	25.	5.9 J	1.6 U	2.3 U	1.7 U	
SIL-02	AMEC	127-01	17-Nov-05	28-32		2.3 U	2.2 U	1.1 U	1.7	2.6 U	1.6 U	2.3 U	1.7 U	See PAH Table
		131-01	17-Nov-05	96-100		2.3 U	1.1 J	1.1 U	1.7	2.6 U	1.6 U	2.3 U	1.7 U	
		119-01	14-Nov-05	214-216		2.3 U	1.3 J	21.	7.2 U	0.74 J	1.6 U	2.3 U	1.7 U	
SIL-03	AMEC	125-01	16-Nov-05	31-35		2.3 U	2.2 U	1.1 U	1.7 U	0.62 J	1.6 U	2.3 U	1.7 U	See PAH Table
		126-01	16-Nov-05	95-99		2.3 U	2.2 U	99.	35.	4.9 J	1.6 U	2.3 U	1.7 U	
		142-01	6-Dec-05	110-130		2.3 U	2.2 U	170.	72.	2.6 U	1.6 U	2.3 U	1.7 U	
SIL-04	AMEC	136-01	18-Nov-05	26-30		2.3 U	2.2 U	1.1 U	1.7	2.6 U	1.6 U	2.3 U	1.7 U	See PAH Table
		137-01	21-Nov-05	70-74		2.3 U	2.2 U	1.1 U	1.7	2.6 U	1.6 U	2.3 U	1.7 U	
		144-01	9-Dec-05	80-89		2.3 U	2.2 U	150.	54.	2.6 U	1.6 U	2.3 U	1.7 U	

Table 4 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270C					Analytical Results in ug/L (ppb)									
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carbazole	Dibenzo-furan	2-Methyl-naphthalene	1,2-Dichloro-benzene	1,4-Dichloro-benzene	Bis (2-ethyl hexyl) phthalate	Butyl-benzyl-phthalate	Diethyl-phthalate	Bis (2-chloroiso propyl)ether	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]														
Fish Consumption														
	EPA 2004 NRWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
	Portland Harbor specific fish consumption rate				#	#	#	#	19	0.22	19	4,400	0.053	#
	DEQ 2004 AWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
Drinking Water														
	MCL				#	#	0.2 [1]	#	75	6	#	#	#	#
	Tap Water PRGs				3.4	12	#	#	0.5	4.8	7,300	29,000	0.01	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]														
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	763 [6]	3 [6]	3 [6]	3 [6]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [6]				#	#	2.1 [2]	#	71	#	19	210	#	#
Push Probe Boring Samples (In-water)														
GP-25	MFA	GP-25-W-2	30-Sep-04	0-2	16.1	8.42	24.5	1.01 U	1.01 U	1.01 U				See PAH Table
		GP-25-W-36	30-Sep-04	34-36	4.21	1.57	13.4	0.98 U	0.98 U	2.11				See PAH Table
		GP-25-W-74	1-Oct-04	72-74	4.77	1.78	16.6	0.99 U	0.99 U	1.42				See PAH Table
		GP-25-W-89	1-Oct-04	87-89	22.2	6.47	60.9	1.04 U	1.04 U	1.75				See PAH Table
		GP-25-W-116	1-Oct-04	114-116	8.21	1.21 U	13.2	1.21 U	1.21 U	1.21 U				See PAH Table
		GP-25-W-151	30-Sep-04	149-151	2.17	1.01 U	4.79	34.9	16.8	1.95				See PAH Table
GP-26	MFA	GP-26-W-2	6-Oct-04	0-2	9.35	3.35	36.3	0.98 U	0.98 U	0.98 U				See Table 10
		GP-26-W-2D	6-Oct-04	0-2	15.1	4.42	47.	0.97 U	0.97 U	0.97 U				See Table 10
		GP-26-W-30	6-Oct-04	28-30	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U				See Table 10
		GP-26-W-83	6-Oct-04	81-83	33.5	8.26	160.	1. U	1. U	1.14				See Table 10
		GP-26-W-110	6-Oct-04	108-110	13.	4.18	48.5	0.95 U	0.95 U	0.95 U				See Table 10
		GP-26-W-128	5-Oct-04	126-128	26.4	6.91	95.4	0.97 U	16.3	3.33				See Table 10
GP-27	MFA	GP-27-W-2	12-Oct-04	0-2	63.9	16.1	453.	1.04 U	1.04 U	1.04 U				See PAH Table
		GP-27-W-15	12-Oct-04	13-15	19.1	2.67	27.4	1. U	1. U	1.08				See PAH Table
		GP-27-W-34	12-Oct-04	32-34	74.7	12.8	341.	1.06 U	1.06 U	1.4				See PAH Table

Table 4 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270C					Analytical Results in ug/L (ppb)									
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carbazole	Dibenzo-furan	2-Methyl-naphthalene	1,2-Dichloro-benzene	1,4-Dichloro-benzene	Bis (2-ethyl hexyl) phthalate	Butyl-benzyl-phthalate	Diethyl-phthalate	Bis (2-chloroiso propyl)ether	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]														
Fish Consumption														
	EPA 2004 NRWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
	Portland Harbor specific fish consumption rate				#	#	#	#	19	0.22	19	4,400	0.053	#
	DEQ 2004 AWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
Drinking Water														
	MCL				#	#	0.2 [1]	#	75	6	#	#	#	#
	Tap Water PRGs				3.4	12	#	#	0.5	4.8	7,300	29,000	0.01	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]														
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	763 [6]	3 [6]	3 [6]	3 [6]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [6]				#	#	2.1 [2]	#	71	#	19	210	#	#
Push Probe Boring Samples (In-water)														
GP-27	MFA	GP-27-W-59	12-Oct-04	57-59	52.8	9.15	201.	1. U	1. U	1.42				See PAH Table
		GP-27-W-84	12-Oct-04	82-84	10.9	3.39	43.5	0.98 U	0.98 U	1.02				See PAH Table
		GP-27-W-110	11-Oct-04	108-110	44.5	11.5	264.	0.98 U	0.98 U	3.54				See PAH Table
GP-28	MFA	GP-28-W-2	15-Oct-04	0-2	5.73	0.95 U	6.19	0.95 U	0.95 U	0.95 U				See PAH Table
		GP-28-W-36	15-Oct-04	34-36	0.96 U	0.96 U	1.12	0.96 U	0.96 U	0.96 U				See PAH Table
		GP-28-W-74	15-Oct-04	72-74	4.98	0.98	16.	0.95 U	0.95 U	0.95 U				See PAH Table
		GP-28-W-89	15-Oct-04	87-89	1.18	0.96 U	3.32	0.96 U	0.96 U	0.96 U				See PAH Table
		GP-28-W-116	15-Oct-04	114-116	8.36	2.14	30.3	0.96	0.96	1.22				See PAH Table
		GP-28-W-116D	15-Oct-04	114-116	8.7	2.82	32.5	0.95 U	0.95 U	1.94				See PAH Table
		GP-28-W-160	14-Oct-04	158-160	1.74	0.96 U	4.91	25.4	9.83	6.9				See PAH Table
GP-29	MFA	GP-29-W-2	20-Oct-04	0-2	219.	19.5	762.	1. U	1. U	1. U				See PAH Table
		GP-29-W-22	20-Oct-04	20-22	29.9	8.01	292.	0.97 U	0.97 U	0.97 U				See PAH Table
		GP-29-W-46	21-Oct-04	44-46	67.9	15.3	540.	1.03 U	1.03 U	3.1				See PAH Table
		GP-29-W-68	21-Oct-04	66-68	37.2	10.5	301.	0.98 U	0.98 U	1.48				See PAH Table
		GP-29-W-88	21-Oct-04	86-88	67.2	16.	581.	1.05 U	1.05 U	1.05 U				See PAH Table
		GP-29-W-117	20-Oct-04	115-117	102.	20.5	772.	37.8	12.2	1.91				See PAH Table

Table 4 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270C					Analytical Results in ug/L (ppb)									
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carbazole	Dibenzo-furan	2-Methyl-naphthalene	1,2-Dichloro-benzene	1,4-Dichloro-benzene	Bis (2-ethyl hexyl) phthalate	Butyl-benzyl-phthalate	Diethyl-phthalate	Bis (2-chloroiso propyl)ether	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]														
Fish Consumption														
	EPA 2004 NRWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
	Portland Harbor specific fish consumption rate				#	#	#	#	19	0.22	19	4,400	0.053	#
	DEQ 2004 AWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
Drinking Water														
	MCL				#	#	0.2 [1]	#	75	6	#	#	#	#
	Tap Water PRGs				3.4	12	#	#	0.5	4.8	7,300	29,000	0.01	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]														
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	763 [6]	3 [6]	3 [6]	3 [6]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [6]				#	#	2.1 [2]	#	71	#	19	210	#	#
Push Probe Boring Samples (In-water)														
GP-30	MFA	GP-30-W-2	22-Oct-04	0-2	64.1	13.	106.	1.18 U	1.18 U	2.87				See PAH Table
		GP-30-W-25	25-Oct-04	23-25	9.91	2.08	23.3	0.95 U	0.95 U	3.13				See PAH Table
		GP-30-W-50	25-Oct-04	48-50	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U				See PAH Table
		GP-30-W-75	25-Oct-04	73-75	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U	0.95 U				See PAH Table
		GP-30-W-95	25-Oct-04	93-95	0.99 U	0.99 U	0.99 U	44.	4.85	0.99 U				See PAH Table
		GP-30-W-118	22-Oct-04	116-118	1.52	0.96 U	5.23	132.	36.5	0.96 U				See PAH Table
GP-31	MFA	GP-31-W-2	26-Oct-04	0-2	1.67	0.95 U	4.45	0.95 U	0.95 U	0.95 U				See PAH Table
		GP-31-W-22	27-Oct-04	20-22	37.3	0.96 U	11.2	0.96 U	0.96 U	0.96 U				See PAH Table
		GP-31-W-46	27-Oct-04	44-46	13.6	3.5	28.8	0.97 U	0.97 U	0.97 U				See PAH Table
		GP-31-W-69	27-Oct-04	67-69	10.2	3.22	21.5	0.97 U	0.97 U	0.97 U				See PAH Table
		GP-31-W-89	27-Oct-04	87-89	22.1	6.33	45.5	1.01 U	1.01 U	1.01 U				See PAH Table
		GP-31-W-113	26-Oct-04	111-113	2.69	7.7	85.5	57.	20.9	2.87				See PAH Table
GP-32	MFA	GP-32-W-2	28-Oct-04	0-2	6.07	1.76	3.19	0.96 U	0.96 U	0.96 U				See PAH Table
		GP-32-W-24	28-Oct-04	22-24	9.36	2.46	16.3	1.11 U	1.11 U	5.21				See PAH Table
		GP-32-W-46	29-Oct-04	44-46	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U				See PAH Table
		GP-32-W-70	29-Oct-04	68-70	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U				See PAH Table
		GP-32-W-90	29-Oct-04	88-90	0.99 U	0.99 U	0.99 U	0.99 U	0.99 U	0.99 U				See PAH Table
		GP-32-W-121	28-Oct-04	119-121	8.11	2.89	18.1	94.7	19.9	0.98 U				See PAH Table

Table 4 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)

Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270C					Analytical Results in ug/L (ppb)									
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carbazole	Dibenzo-furan	2-Methyl-naphthalene	1,2-Dichloro-benzene	1,4-Dichloro-benzene	Bis (2-ethyl hexyl) phthalate	Butyl-benzyl-phthalate	Diethyl-phthalate	Bis (2-chloroiso propyl)ether	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]														
Fish Consumption														
	EPA 2004 NRWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
	Portland Harbor specific fish consumption rate				#	#	#	#	19	0.22	19	4,400	0.053	#
	DEQ 2004 AWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
Drinking Water														
	MCL				#	#	0.2 [1]	#	75	6	#	#	#	#
	Tap Water PRGs				3.4	12	#	#	0.5	4.8	7,300	29,000	0.01	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]														
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	763 [6]	3 [6]	3 [6]	3 [6]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [6]				#	#	2.1 [2]	#	71	#	19	210	#	#
Monitoring Wells Exploratory Samples														
WS-14	MFA	WS14-W-208	6-Jul-04	206-208				9.97	2.4	0.98 U				See PAH Table
WS-15	MFA	WS15-W-193	15-Jul-04	191-193				0.95 U	0.95 U	0.95 U				See PAH Table
		WS15-W-193-DU	15-Jul-04	191-193				0.96 U	0.96 U	0.96 U				See PAH Table
WS-16	MFA	WS16-W-227	2-Aug-04	225-227				0.96 U	0.96 U	1.14				See PAH Table
WS-17	MFA	WS17-W-112	9-Aug-04	110-112				82.8	50.4	1. U				See PAH Table
RP-11	AMEC	120-01	15-Nov-05	27-31		2.3 U	2.2 U	1.1 U	1.7 U	2.6 U	1.6 U	2.3 U	2. U	See PAH Table
		122-01	15-Nov-05	96-100		2.3 U	2.2 U	1.1 U	1.7 U	2.5 J	1.6 U	2.3 U	2. U	See PAH Table
		122-02	15-Nov-05	96-100		2.3 U	2.2 U	1.1 U	1.7 U	2.2 J	1.6 U	2.3 U	2. U	See PAH Table
		139-01	28-Nov-05	210-216		2.3 U	2.2 U	180.	54.	2.6 U	1.6 U	2.3 U	2. U	See PAH Table

Table 4 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)
Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270C					Analytical Results in ug/L (ppb)									
Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs[5])	Carbazole	Dibenzo-furan	2-Methyl-naphthalene	1,2-Dichloro-benzene	1,4-Dichloro-benzene	Bis (2-ethyl hexyl) phthalate	Butyl-benzyl-phthalate	Diethyl-phthalate	Bis (2-chloroiso propyl)ether	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]														
Fish Consumption														
	EPA 2004 NRWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
	Portland Harbor specific fish consumption rate				#	#	#	#	19	0.22	19	4,400	0.053	#
	DEQ 2004 AWQC (organism only)				#	#	#	#	190	2.2	1,900	44,000	0.53	#
Drinking Water														
	MCL				#	#	0.2 [1]	#	75	6	#	#	#	#
	Tap Water PRGs				3.4	12	#	#	0.5	4.8	7,300	29,000	0.01	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]														
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	763 [6]	3 [6]	3 [6]	3 [6]	#	#
	Oak Ridge National Laboratory (Tier II SCV) [6]				#	#	2.1 [2]	#	71	#	19	210	#	#
Quality Control Samples (HAI)														
Trip Blank	HAI	5237-010821-322	21-Aug-01	-	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	See PAH Table
Water EB	HAI	5237-010816-319	16-Aug-01	-	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	8.1 U,B	See PAH Table
Water EB	HAI	5237-020318-332	18-Mar-02	-	4. U	2. U	2. U	2. U	2. U	6.36	2. U	2. U	2. U	See PAH Table
Catch Basin Soil EB	Siltronic	01-72	19-Jun-01	-				120. U	120. U	120. U	120. U	120. U	120. U	See PAH Table
Soil EB	HAI	5237-010821-324	21-Aug-01	-	4. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	2. U	See PAH Table

Note:
B = Analyte detected in the associated Method Blank
bgs = below ground surface
DEQ = Oregon Department of Environmental Quality
EB = equipment blank
EPA = U.S. Environmental Protection Agency
HAI = Hahn and Associates, Inc.
LTI = Limno-Tech, Inc.
MFA = Maul Foster & Alongi, Inc.
PAHs = polynuclear aromatic hydrocarbons
ppb = parts per billion
U = not detected above detection limit indicated
ug/l = micrograms per liter

1 = MCL is based on benzo(a)pyrene
2 = SCV for 1-Methylnaphthalene
3 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved) as potential ARARs under CERCLA. The final determination will be made in the EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be evaluated and prioritized on a case by case basis.
4 = Screening Level Values for Soil/Stormwater Sediment, Stormwater and Surface water, *Portland Harbor Joint Source Control Strategy*, DEQ, December 2005
5 = For in-water borings, ground surface refers to the base of the river, or mud line
6 = Values were taken from Table 33c (OAR 340-41), which are Water Quality Guidance Values, not criteria, that can be used in application of Oregon's Narrative Toxics Criteria to waters of the state in order to protect aquatic life
Bold = Concentration exceeds Reference Level

Table 5 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)
Metals, Cyanide, and Chloride

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm) Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series										
					Aluminum	Antimony	Arsenic	Barium	Cadmium [4]	Calcium	Chromium [4]	Cobalt	Copper [4]	Iron	Lead [4]
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]															
Fish Consumption															
	EPA 2004 NRWQC (organism only)				#	0.64	0.00014	#	#	#	#	#	#	#	#
	Portland Harbor specific fish consumption rate				#	0.064	0.000014	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (organism only)				#	0.64	0.00014	#	#	#	#	#	#	#	#
Drinking Water															
	MCL				(0.05-0.2) [7]	0.006	0.01	#	0.005	#	0.1	#	1.3	#	0.015
	Tap Water PRGs				36	0.015	0.000045	#	0.018	#	#	#	1.5	#	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]															
	EPA 2004 NRWQC (chronic)				0.087	#	0.15	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	1.60 [2]		#	0.00038 [6]	#	#	#	0.0036 [6]	#	0.00054 [6]
	Oak Ridge National Laboratory (Tier II SCV) [2]				#	0.03	0.0031 [8]	#	#	#	#	#	#	#	#
Push Probe Boring Samples (Upland)															
P-1A	HAI	5237-020318-331	18-Mar-02	24-28		0.005 U	0.005 U	0.05	0.002 U		0.005 U	0.012	0.005 U	6.96	0.005 U
		5237-020318-333	18-Mar-02	54-58		0.005 U	0.005 U	0.066	0.002 U		0.005 U	0.005 U	0.005 U	32.5	0.005 U
P-2	HAI	5237-010816-316	16-Aug-01	28-32		0.003 U	0.024	0.121	0.001 U		0.005	0.001	0.002	99.5	0.005 U
		5237-010816-317	16-Aug-01	54-58		0.003 U	0.005 U	0.05	0.001 U		0.002 U	0.003	0.005 U	26.5	0.005 U
		5237-010816-318	16-Aug-01	96-100		0.003 U	0.005 U	0.151	0.001 U		0.022	0.011	0.013	71.5	0.005 U
P-3	HAI	5237-010821-321	21-Aug-01	28.5-32.5		0.003 U	0.016	0.172	0.001 U		0.001 U	0.001 U	0.001 U	100.	0.005 U
		5237-010821-323	21-Aug-01	55-59		0.003 U	0.005 U	0.126	0.001 U		0.003	0.007	0.002 U	40.4	0.005 U
		5237-010821-325	21-Aug-01	96-100		0.003 U	0.005 U	0.101	0.001 U		0.002	0.005	0.002 U	46.5	0.005 U
P-4	HAI	5237-010815-309	15-Aug-01	28-32		0.003 U	0.008	0.149	0.001 U		0.002 U	0.002	0.005 U	87.5	0.005 U
		5237-010815-310	15-Aug-01	50-54		0.003 U	0.005 U	0.105	0.001 U		0.002 U	0.003	0.005 U	47.3	0.005 U
P-5	HAI	5237-010815-311	15-Aug-01	29-33		0.003	0.008	0.202	0.001 U		0.002 U	0.016	0.005 U	86.	0.005 U
(duplicate)		5237-010815-312	15-Aug-01	29-33		0.005	0.009	0.245	0.001 U		0.009	0.011	0.01	100.	0.019
		5237-010815-313	15-Aug-01	52-56		0.004	0.011	0.352	0.001 U		0.129	0.046	0.089	92.7	0.008
		5237-010815-314	15-Aug-01	96-100		0.022	0.034	1.08	0.001 U		0.61	0.134	0.327	457.	0.036
P-6	HAI	5237-010802-300	2-Aug-01	32-36		0.003 U	0.005 U	0.056	0.001 U		0.002 U	0.012	0.002	3.29	0.005 U
		5237-010802-301	2-Aug-01	46-50		0.003 U	0.005 U	0.101	0.001 U		0.002 U	0.005	0.002	19.5	0.005 U
P-7	HAI	5237-010809-307	9-Aug-01	58-62		0.005 U	0.005 U	0.229	0.002 U		0.005 U	0.006	0.005 U	45.2	0.005 U
P-8	HAI	5237-010809-304	9-Aug-01	28-32		0.005 U	0.019	0.138	0.002 U		0.005 U	0.005 U	0.005 U	35.2	0.005 U
		5237-010809-305	9-Aug-01	50-54		0.005 U	0.005 U	0.108	0.002 U		0.005 U	0.005 U	0.005 U	6.17	0.005 U
		5237-010809-306	9-Aug-01	80-84		0.005 U	0.005 U	0.312	0.002 U		0.005 U	0.01	0.005	43.5	0.005 U
P-9	HAI	5237-010816-320	16-Aug-01	31-35		0.003 U	0.03	0.088	0.001 U		0.002 U	0.008	0.005 U	13.4	0.005 U
GP02-01	LTI	GP02-01	20-Mar-02	35-38											
GP-02-02	LTI	GP02-02	20-Mar-02	23-27											
			21-Mar-02	56-60											
GP-02-03	LTI	GP02-03	21-Mar-02	31-35											
			22-Mar-02	56-60											
			22-Mar-02	96-100											
GP-4	MFA	GP4-W-68.0	27-Sep-02	66-70											
		GP4-W-98.0	30-Sep-02	96-100											
GP-5	MFA	GP5-W-68.0	7-Oct-02	66-70											
		GP5-W-95.0	8-Oct-02	93-97											

Table 5 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)
Metals, Cyanide, and Chloride

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm) Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series										
					Aluminum	Antimony	Arsenic	Barium	Cadmium [4]	Calcium	Chromium [4]	Cobalt	Copper [4]	Iron	Lead [4]
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]															
Fish Consumption															
	EPA 2004 NRWQC (organism only)				#	0.64	0.00014	#	#	#	#	#	#	#	#
	Portland Harbor specific fish consumption rate				#	0.064	0.000014	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (organism only)				#	0.64	0.00014	#	#	#	#	#	#	#	#
Drinking Water															
	MCL				(0.05-0.2) [7]	0.006	0.01	#	0.005	#	0.1	#	1.3	#	0.015
	Tap Water PRGs				36	0.015	0.000045	#	0.018	#	#	#	1.5	#	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]															
	EPA 2004 NRWQC (chronic)				0.087	#	0.15	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	1.60 [2]		#	0.00038 [6]	#	#	#	0.0036 [6]	#	0.00054 [6]
	Oak Ridge National Laboratory (Tier II SCV) [2]				#	0.03	0.0031 [8]	#	#	#	#	#	#	#	#
GP-6	MFA	GP6-W-74.0	1-Oct-02	72-76											
		GP6-W-98.0	1-Oct-02	96-100											
		GP-DUP	1-Oct-02	96-100											
GP-7	MFA	GP7-W-78.0	3-Oct-02	76-80											
		GP7-W-98.0	4-Oct-02	96-100											
SIL-01	AMEC	101-01	1-Nov-05	26.5-31.5	0.163 J		0.014		0.001 U	70.4	0.002 U		0.004 J	54.9	0.003 J
		115-01	11-Nov-05	96-100	0.0543 U		0.006 U		0.001 U	68.6	0.002 U		0.003 U	43.1 J	0.002 U
		109-01	7-Nov-05	207-208	0.0543 U		0.006 U		0.001 U	98.8	0.002 U		0.003 J	1.92	0.002 U
		114-01	8-Nov-05	212-217	0.506 J		0.006 U		0.001 U	112	0.002 U		0.003 U	3.32	0.002 U
SIL-02	AMEC	127-01	17-Nov-05	28-32	0.0543 U		0.01		0.001 U	128	0.001 J		0.004 J	86.8	0.002 U
		131-01	17-Nov-05	96-100	0.0543 U		0.005 J		0.001 U	76	0.001 J		0.004 J	59.	0.002 U
		119-01	14-Nov-05	214-216	0.0543 U		0.006 U		0.001 U	56.5	0.002 U		0.003 U	12.4	0.002 U
SIL-03	AMEC	125-01	16-Nov-05	31-35	0.0543 U		0.006 U		0.001 U	146	0.002 U		0.003 U	0.717	0.002 U
		126-01	16-Nov-05	95-99	0.149 J		0.006 U		0.001 U	248	0.002 U		0.003 U	3.4	0.002 U
		142-01	6-Dec-05	110-130	0.0543 U		0.006 U		0.001 U	208	0.002 U		0.003 U	0.921	0.002 U
SIL-04	AMEC	136-01	18-Nov-05	26-30	0.0543 U		0.006 U		0.001 U	99.7	0.002 U		0.005 J	71.8	0.002 U
		137-01	21-Nov-05	70-74	0.0543 U		0.006 U		0.001 U	77.1	0.002 U		0.003 J	0.76	0.002 U
		144-01	9-Dec-05	80-89	0.0543 U		0.006 U		0.001 U	274 J	0.002 U		0.003 U	0.416	0.002 U
Push Probe Boring Samples (In-Water)															
GP-55	MFA	GP55-W-1	16-May-05	0-1		0.02 U					0.022	0.005 U	0.01 U	36.9	0.02 U
GP-61	MFA	GP61-W-1	18-May-05	0-1		0.02 U					0.024	0.005 U	0.01 U	21.1	0.02 U
GP-62	MFA	GP62-W-1	18-May-05	0-1		0.025					0.147	0.082	0.173	179.	0.13
GP-63	MFA	GP63-W-1	19-May-05	0-1		0.02 U					0.08	0.025	0.065	86.	0.02 U
GP-64	MFA	GP64-W-1	19-May-05	0-1		0.02 U					0.058	0.029	0.061	124.	0.02 U
GP-68	MFA	GP68-W-1	23-May-05	0-1		0.02 U					0.02	0.005 U	0.01 U	79.1	0.02 U
GP-69	MFA	GP69-W-1	24-May-05	0-1		0.02 U					0.009	0.006	0.01 U	65.2	0.02 U
GP-70	MFA	GP70-W-1	24-May-05	0-1		0.02 U					0.011	0.005 U	0.01 U	22.2	0.02 U
GP-73	MFA	GP73-W-1	25-May-05	0-1		0.02 U					0.007	0.005 U	0.01 U	38.6	0.02 U
GP-75	MFA	GP75-W-1	26-May-05	0-1		0.02 U					0.046	0.009	0.025	32.	0.02 U
GP-76	MFA	GP76-W-1	27-May-05	0-1		0.02 U					0.07	0.02	0.059	46.2	0.02 U
GP-81	MFA	GP81-W-1	31-May-05	0-1		0.02 U					0.026	0.018	0.012	107.	0.02 U
GP-82	MFA	GP82-W-1	1-Jun-05	0-1		0.02 U					0.015	0.02	0.017	112.	0.02 U

Table 5 - Summary of Analytical Results for Groundwater Samples: Temporary Well Points (Siltronic Property)
Metals, Cyanide, and Chloride

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm) Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series										
					Aluminum	Antimony	Arsenic	Barium	Cadmium [4]	Calcium	Chromium [4]	Cobalt	Copper [4]	Iron	Lead [4]
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]															
Fish Consumption															
	EPA 2004 NRWQC (organism only)				#	0.64	0.00014	#	#	#	#	#	#	#	#
	Portland Harbor specific fish consumption rate				#	0.064	0.000014	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (organism only)				#	0.64	0.00014	#	#	#	#	#	#	#	#
Drinking Water															
	MCL				(0.05-0.2) [7]	0.006	0.01	#	0.005	#	0.1	#	1.3	#	0.015
	Tap Water PRGs				36	0.015	0.000045	#	0.018	#	#	#	1.5	#	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]															
	EPA 2004 NRWQC (chronic)				0.087	#	0.15	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	1.60 [2]		#	0.00038 [6]	#	#	#	0.0036 [6]	#	0.00054 [6]
	Oak Ridge National Laboratory (Tier II SCV) [2]				#	0.03	0.0031 [8]	#	#	#	#	#	#	#	#
Monitoring Well Exploratory Samples															
WS-14	MFA	WS14-W-208	6-Jul-04	206-208											
WS-15	MFA	WS15-W-193	15-Jul-04	191-193											
(duplicate)		WS15-W-193-DUP	15-Jul-04	191-193											
WS-16	MFA	WS16-W-227	2-Aug-04	225-227											
WS-17	MFA	WS17-W-112	9-Aug-04	110-112											
RP-11	AMEC	120-01	15-Nov-05	27-31	0.0543 U		0.006 U		0.001 U	87.4	0.002 U		0.003 U	86.2	0.002 U
		122-01	15-Nov-05	96-100	0.0667 J		0.006 U		0.001 U	301	0.002 U		0.003 U	176.	0.002 U
		122-02	15-Nov-05	96-100	0.0543 U		0.006 U		0.001 U	290	0.006 J		0.003 U	170.	0.002 U
		139-01	28-Nov-05	210-216	0.0543 U		0.006 U		0.001 U	214	0.002 U		0.003 U	5.05	0.002 U
Quality Control Samples (HAI)															
Trip Blank	HAI	5237-010821-322	21-Aug-01	-		0.003 U	0.005 U	0.002 U	0.001 U		0.002 U	0.001 U	0.001	0.033	0.005 U
Water EB	HAI	5237-010816-319	16-Aug-01	-		0.005 U	0.005 U	0.002 U	0.002 U		0.005 U	0.005 U	0.005 U	0.086	0.005 U
Catch Basin Soil EB	Siltronic	01-72	19-Jun-01	-		0.01 U	0.005 U	0.001 U	0.002 U		0.01 U	0.001 U	0.005 U	0.5 U	0.002 U
Soil EB	HAI	5237-010821-324	21-Aug-01	-		0.003 U	0.005 U	0.002 U	0.002 U		0.002 U	0.001 U	0.001 U	0.02	0.005 U

Table 5 - Summary of Analytical Results for Groundwater Samples: Tempora
Metals, Cyanide, and Chloride

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm)												
					Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series											EPA Method 9010	
					Magnesium	Manganese	Mercury	Nickel [4]	Poatssium	Selenium	Silver [4]	Sodium	Titanium	Vanadium	Zinc [4]	Amenable Cyanide	Total Cyanide [1]
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																	
Fish Consumption																	
	EPA 2004 NRWQC (organism only)				#	0		5	#	4	#	#	#	#	26	0.14	#
	Portland Harbor specific fish consumption rate				#	0		0.46	#	0.42	#	#	#	#	2.6	0.014	#
	DEQ 2004 AWQC (organism only)				#	0	0.000146	4,600	#	4	#	#	#	#	26	0.14	#
Drinking Water																	
	MCL				#	0.05 [7]	0.002	#	#	0.05	0.1 [7]	#	#	#	5 [7]	0.2	#
	Tap Water PRGs				#	1	0.011	730	#	0.18	0.18	#	#	#	11	0.73	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																	
	EPA 2004 NRWQC (chronic)				#	#	0.00077	16	#	0.005	#	#	#	#	0.036	0.0052	#
	DEQ 2004 AWQC (chronic)				#	#	0.000012	49 [6]	#	0.035 [6]	0.00012 [6]	#	#	#	0.033	0	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				#	0.12	0.0013	#	#	#	0.00036	#	#	#	#	#	#
Push Probe Boring Samples (Upland)																	
P-1A	HAI	5237-020318-331	18-Mar-02	24-28	0.05 U	1.33		0.039		0.005 U	0.005 U		0.01 U	0.005 U	0.151	0.04 U	0.059
		5237-020318-333	18-Mar-02	54-58	43.	1.89		0.035		0.005 U	0.005 U		0.01 U	0.005 U	0.06	0.064	0.642
P-2	HAI	5237-010816-316	16-Aug-01	28-32	11.7	3.63		0.019		0.005 U	0.002 U		0.078	0.005	0.072		0.723
		5237-010816-317	16-Aug-01	54-58	32.1	0.331		0.011		0.005 U	0.002 U		0.004 U	0.001	0.02 J		0.255
		5237-010816-318	16-Aug-01	96-100	37.7	4.47		0.039		0.005 U	0.002 U		0.797	0.037	0.151		0.549
P-3	HAI	5237-010821-321	21-Aug-01	28.5-32.5	24.6	5.06		0.007		0.005 U	0.002 U		0.046	0.005	0.017 U		0.65
		5237-010821-323	21-Aug-01	55-59	59.6	0.771		0.03		0.005 U	0.002 U		0.107	0.005	0.078		0.45
		5237-010821-325	21-Aug-01	96-100	41.7	2.06		0.039		0.005 U	0.002 U		0.059	0.003	0.173		0.498
P-4	HAI	5237-010815-309	15-Aug-01	28-32	23.1	6.35		0.006		0.005 U	0.002 U		0.026	0.002	0.024		0.056
		5237-010815-310	15-Aug-01	50-54	55.5	1.28		0.037		0.005 U	0.002 U		0.01	0.001	0.09		0.071
P-5	HAI	5237-010815-311	15-Aug-01	29-33	74.9	6.11		0.047		0.005 U	0.002 U		0.012 J	0.002 J	0.008 J		0.35 J
(duplicate)		5237-010815-312	15-Aug-01	29-33	76.8	5.52		0.019		0.005 U	0.002 U		0.158 J	0.009 J	0.083 J		0.122 J
		5237-010815-313	15-Aug-01	52-56	82.5	1.57		0.102		0.005 U	0.002 U		3.88	0.204	0.333		0.139
		5237-010815-314	15-Aug-01	96-100	132.	9.98		0.351		0.005 U	0.002 U		11.7	0.635	1.69		0.66
P-6	HAI	5237-010802-300	2-Aug-01	32-36	65.4	1.92		0.012		0.005 U	0.002 U		0.01	0.003	0.025		0.02 U
		5237-010802-301	2-Aug-01	46-50	51.4	0.715		0.031		0.005	0.002 U		0.016	0.001 U	0.23		0.037
P-7	HAI	5237-010809-307	9-Aug-01	58-62	30.1	6.44		0.03		0.006	0.005 U		0.04	0.005 U	0.092		0.02 U
P-8	HAI	5237-010809-304	9-Aug-01	28-32	39.4	6.54		0.006		0.006	0.005 U		0.026	0.005 U	0.016		0.12
		5237-010809-305	9-Aug-01	50-54	70.3	0.542		0.022		0.005 U	0.005 U		0.012	0.009	0.136		0.18
		5237-010809-306	9-Aug-01	80-84	152.	28.9		0.061		0.016	0.005 U		0.101	0.005 U	0.307		0.02 U
P-9	HAI	5237-010816-320	16-Aug-01	31-35	18.9	14.5		0.005		0.006	0.002 U		0.012	0.001	0.014 U		0.034
GP02-01	LTI	GP02-01	20-Mar-02	35-38													4.41
GP-02-02	LTI	GP02-02	20-Mar-02	23-27													4.04
			21-Mar-02	56-60													1.01
GP-02-03	LTI	GP02-03	21-Mar-02	31-35													0.276
			22-Mar-02	56-60													0.498
			22-Mar-02	96-100													0.309
GP-4	MFA	GP4-W-68.0	27-Sep-02	66-70													0.84
		GP4-W-98.0	30-Sep-02	96-100													0.91
GP-5	MFA	GP5-W-68.0	7-Oct-02	66-70													0.63
		GP5-W-95.0	8-Oct-02	93-97													0.81

Table 5 - Summary of Analytical Results for Groundwater Samples: Tempora
Metals, Cyanide, and Chloride

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm)												
					Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series											EPA Method 9010	
					Magnesium	Manganese	Mercury	Nickel [4]	Poatssium	Selenium	Silver [4]	Sodium	Titanium	Vanadium	Zinc [4]	Amenable Cyanide	Total Cyanide [1]
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																	
Fish Consumption																	
	EPA 2004 NRWQC (organism only)				#	0		5	#	4	#	#	#	#	26	0.14	#
	Portland Harbor specific fish consumption rate				#	0		0.46	#	0.42	#	#	#	#	2.6	0.014	#
	DEQ 2004 AWQC (organism only)				#	0	0.000146	4,600	#	4	#	#	#	#	26	0.14	#
Drinking Water																	
	MCL				#	0.05 [7]	0.002	#	#	0.05	0.1 [7]	#	#	#	5 [7]	0.2	#
	Tap Water PRGs				#	1	0.011	730	#	0.18	0.18	#	#	#	11	0.73	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																	
	EPA 2004 NRWQC (chronic)				#	#	0.00077	16	#	0.005	#	#	#	#	0.036	0.0052	#
	DEQ 2004 AWQC (chronic)				#	#	0.000012	49 [6]	#	0.035 [6]	0.00012 [6]	#	#	#	0.033	0	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				#	0.12	0.0013	#	#	#	0.00036	#	#	#	#	#	#
GP-6	MFA	GP6-W-74.0	1-Oct-02	72-76													0.62
		GP6-W-98.0	1-Oct-02	96-100													0.7
		GP-DUP	1-Oct-02	96-100													0.65
GP-7	MFA	GP7-W-78.0	3-Oct-02	76-80													0.63
		GP7-W-98.0	4-Oct-02	96-100													0.64
SIL-01	AMEC	101-01	1-Nov-05	26.5-31.5	16.6	3.12	0.0002 U	0.003 J	6			21.3		0.003 J	0.003 U		
		115-01	11-Nov-05	96-100	56.2	0.584 J	0.0002 U	0.013	0.584 U			26.5		0.002 U	0.003 U		
		109-01	7-Nov-05	207-208	32.3	0.297	0.0002 U	0.013 U	5.27			26.2		0.005 J	0.003 U		
		114-01	8-Nov-05	212-217	35.2	1.82	0.0002 U	0.016 J	7.02			30		0.005 J	0.086		
SIL-02	AMEC	127-01	17-Nov-05	28-32	63.9	3.13	0.0002 U	0.019 J	3.62 J			28		0.005 J	0.003 U		
		131-01	17-Nov-05	96-100	53.3	1.39	0.0002 U	0.005 J	3.05 J			23.2		0.002 U	0.003 U		
		119-01	14-Nov-05	214-216	25.4	2.73	0.0002 U	0.012 J	5.03			24.8		0.002 U	0.003 U		
SIL-03	AMEC	125-01	16-Nov-05	31-35	81.7	1.73	0.0002 UJ	0.036 J	0.584 U			31.2		0.002 U	0.112		
		126-01	16-Nov-05	95-99	93.5	1.66	0.0002 UJ	0.011 J	11.6			38.6		0.003 J	0.003 U		
		142-01	6-Dec-05	110-130	75.3	1.32	0.0002 UJ	0.007 J	8.38			32.5		0.006 J	0.019 J		
SIL-04	AMEC	136-01	18-Nov-05	26-30	36.6	2.56	0.0002 U	0.013 U	9.34			25.2		0.002 U	0.006 J		
		137-01	21-Nov-05	70-74	33.7	3.14	0.0002 U	0.013 J	10.7			56		0.006 J	0.02		
		144-01	9-Dec-05	80-89	73.2 J	0.14 J	0.0002 UJ	0.013 U	9.46			22		0.006 J	0.067		
Push Probe Boring Samples (In-Water)																	
GP-55	MFA	GP55-W-1	16-May-05	0-1	19.8	3.7		0.006					0.045	0.01 U	0.194		0.316
GP-61	MFA	GP61-W-1	18-May-05	0-1	7.37	1.39		0.012					0.053	0.01 U	0.17		0.092
GP-62	MFA	GP62-W-1	18-May-05	0-1	8.34	3.28		0.092					6.97	0.379	0.983		0.067
GP-63	MFA	GP63-W-1	19-May-05	0-1	14.	1.45		0.054					1.84	0.102	0.568		0.117
GP-64	MFA	GP64-W-1	19-May-05	0-1	39.2	5.44		0.026					2.46	0.129	0.266		0.356
GP-68	MFA	GP68-W-1	23-May-05	0-1	20.1	3.49		0.005 U					0.268	0.013	0.126		0.196
GP-69	MFA	GP69-W-1	24-May-05	0-1	32.4	2.85		0.005 U					0.43	0.016	0.053		0.231
GP-70	MFA	GP70-W-1	24-May-05	0-1	9.	0.898		0.005 U					0.152	0.01 U	0.045		0.044
GP-73	MFA	GP73-W-1	25-May-05	0-1	33.	2.36		0.005 U					0.079	0.01 U	0.01 U		
GP-75	MFA	GP75-W-1	26-May-05	0-1	7.35	0.967		0.019					0.854	0.398	0.188		
GP-76	MFA	GP76-W-1	27-May-05	0-1	3.54	1.05		0.027					1.76	0.093	0.237		
GP-81	MFA	GP81-W-1	31-May-05	0-1	46.9	4.99		0.005 U					0.189	0.012	0.179		0.067
GP-82	MFA	GP82-W-1	1-Jun-05	0-1	30.6	6.75		0.005 U					0.754	0.036	0.094		0.034

Table 5 - Summary of Analytical Results for Groundwater Samples: Tempora
Metals, Cyanide, and Chloride

Well Point Location	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm)												
					Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series											EPA Method 9010	
					Magnesium	Manganese	Mercury	Nickel [4]	Poatssium	Selenium	Silver [4]	Sodium	Titanium	Vanadium	Zinc [4]	Amenable Cyanide	Total Cyanide [1]
HUMAN HEALTH SCREENING LEVEL VALUES (SLVs) [3,4]																	
Fish Consumption																	
	EPA 2004 NRWQC (organism only)				#	0		5	#	4	#	#	#	#	26	0.14	#
	Portland Harbor specific fish consumption rate				#	0		0.46	#	0.42	#	#	#	#	2.6	0.014	#
	DEQ 2004 AWQC (organism only)				#	0	0.000146	4,600	#	4	#	#	#	#	26	0.14	#
Drinking Water																	
	MCL				#	0.05 [7]	0.002	#	#	0.05	0.1 [7]	#	#	#	5 [7]	0.2	#
	Tap Water PRGs				#	1	0.011	730	#	0.18	0.18	#	#	#	11	0.73	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [3,4]																	
	EPA 2004 NRWQC (chronic)				#	#	0.00077	16	#	0.005	#	#	#	#	0.036	0.0052	#
	DEQ 2004 AWQC (chronic)				#	#	0.000012	49 [6]	#	0.035 [6]	0.00012 [6]	#	#	#	0.033	0	#
	Oak Ridge National Laboratory (Tier II SCV) [2]				#	0.12	0.0013	#	#	#	0.00036	#	#	#	#	#	#
Monitoring Well Exploratory Samples																	
WS-14	MFA	WS14-W-208	6-Jul-04	206-208													0.07
WS-15	MFA	WS15-W-193	15-Jul-04	191-193													0.175
(duplicate)		WS15-W-193-DUP	15-Jul-04	191-193													0.174
WS-16	MFA	WS16-W-227	2-Aug-04	225-227													0.102
WS-17	MFA	WS17-W-112	9-Aug-04	110-112													0.088
RP-11	AMEC	120-01	15-Nov-05	27-31	45.	3.09	0.0002 U	0.011 J	0.584 U			21.9		0.002 U	0.003 U		
		122-01	15-Nov-05	96-100	136.	13.9	0.0002 U	0.005 J	6.84			23.1		0.002 U	0.003 U		
		122-02	15-Nov-05	96-100	131.	13.8	0.0002 U	0.004 J	6.47			21.9		0.002 U	0.003 U		
		139-01	28-Nov-05	210-216	57.3	0.35	0.0002 U	0.013 U	9.72			35.7		0.002 U	41.4		
Quality Control Samples (HAI)																	
Trip Blank	HAI	5237-010821-322	21-Aug-01	-	0.025 U	0.025 U		0.003 U		0.005 U	0.002 U		0.001 U	0.001 U	0.009		0.022
Water EB	HAI	5237-010816-319	16-Aug-01	-	0.05 U	0.005 U		0.003 U		0.005 U	0.005 U		0.002	0.001 U	0.003		0.02 U
Catch Basin Soil EB	Siltronic	01-72	19-Jun-01	-	0.05 U	0.1 U		0.005 U		0.05 U	0.005 U		0.02 U	0.001 U	0.01 U		0.1 U
Soil EB	HAI	5237-010821-324	21-Aug-01	-	0.025 U	0.005 U		0.003 U		0.005 U	0.002 U		0.001 U	0.001 U	0.006 U		0.02 U

Note:
bgs = below ground surface
DEQ = Oregon Department of Environmental Quality
EB = equipment blank
EPA = U.S. Environmental Protection Agency
HAI = Hahn and Associates, Inc.
J = estimated concentration
LTI = Limno-Tech, Inc.
MFA = Maul Foster & Alongi, Inc.
mg/L = milligrams per liter
ppm = parts per million
U = not detected above detection limit indicated

1 = Cyanide SLVs are based on a free cyanide value per DEQ OAR 340-41 Table 33, and EPA values are based on total cyanide.
2 = Values were taken from Table 33c (OAR 340-41), which are Water Quality Guidance Values, not criteria, that can be used in application of Oregon's Narrative Toxics Criteria to waters of the stat
3 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved) as potential ARARs under CERCLA. The final determination w
EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be
4 = Screening Level Values for Soil/Stormwater Sediment, Stormwater and Surface water, *Portland Harbor Joint Source Control Strategy*, DEQ, December 2005
5= This is a hardness dependent metal. All values were calculated based on 25 mg// of $CaCO_3$
6 = These values were taken from OAR 340-41 Table 20 because they will remain the enforceable values for these particular analytes.
7 = National Secondary Drinking Water Standards
8 = Value for Arsenic V

Table 6 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)									Halogenated VOCs (HVOCs)					Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Isopropyl-benzene	n-Propyl-benzene	1,2,4-TMB	1,3,5-TMB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210.	1,500.	#	#	#	#	#	#	#	#	1,000.	3.	0.24	#
	DEQ 2004 AWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
Drinking Water																			
	MCL				5.	700.	1,000.	10,000.	#	#	#	#	#	#	#	100.	5.	2.	#
	Tap Water PRGs				0.35	1,300.	720.	#	#	#	#	#	#	#	#	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic) [4]				#	#	#	#	#	#	#	#	#	#	#	#	21,900.	#	#
	Oak Ridge National Laboratory (Tier II SCV) [3]				130.	7.3	9.8	#	#	#	#	#	#	#	#	590.	47.	#	#
WS-1	CH2M HILL		Aug-85	7-22	1,100.	410.	U	1,200.	U										
WS-2	CH2M HILL		Aug-85	7.5-22	100.	U	U	32.	1,900.										
WS-3S	CH2M HILL		Aug-85	12-27	390.	U	U	U	600.										
	URS		6-Apr-00		U														
			13-Oct-00		U														
			25-Jun-01		0.3														
	AMEC		16-Apr-02		4.														
WS-3I	G&M		Oct-90	55-60	U	U	U	U	770.										
	URS		6-Apr-00		U														
			13-Oct-00		U														
			25-Jun-01		U														
	AMEC		16-Apr-02		0.14														
			13-Apr-04		U	U	U	U	U	U	U	U	U	U	U	U	U	U	Chlorobenzene=3.3 1,2-DCB=0.8 1,4-DCB=0.3
W-03-81	URS		6-Apr-00	75-80	U														
			13-Oct-00		U														
			25-Jun-01		0.17														
	AMEC		16-Apr-02		U														
			13-Apr-04		U	U	U	U	U	U	U	U	U	U	U	U	U	U	1,2-DCB=0.09
WS-4	CH2M HILL		Aug-85	6.5-21.5	U	U	U	15.	350.										
WS-5	CH2M HILL		Aug-85	5-20	U	U	U	U	58.										
WS-6	CH2M HILL		Aug-85	9-24	1,200.	350.		430.	2,100.										
	URS		6-Apr-00		40.4														
			13-Oct-00		614.														
WS-7	CH2M HILL		Aug-85	10-25	U	U	U	U	U										
	URS		Oct-90		U	U	U	U	5.										
			6-Apr-00		U														
			13-Oct-00		U														
WS-8-33	HAI	5237-011009-107	9-Oct-01	23-33	107.	27.9	10. U	20. U	841.	1. U	1. U	18.8	1. U	10. U	10. U	10. U	10. U	12. U	U
		5237-011213-105	13-Dec-01		68.	29.6	5. U	23.2	455.	1. U	1. U	23.1	1. U	5. U	5. U	5. U	5. U	6. U	U
		5237-020403-105	3-Apr-02		89.1	19.5	2.07	20.48	327.	2.38	1. U	9.56	2.49	1. U	1. U	1. U	1. U	1.2 U	U
		5237-020403-106	3-Apr-02		87.4	18.	2.14	18.5	216.	2.12	1. U	7.78	2.16	1 U	1. U	1. U	1. U	1.2 U	U
		5237-020710-104	10-Jul-02		65.9	31.6	1.24	53.1	135.	4.46	1.19	31.2	8.28	1 U	1. U	1. U	1. U	1.2 U	4-IPT=1.33
		5237-020710-105	10-Jul-02		68.1	30.4	1.29	49.8	145.	4.26	1.27	30.8	8.39	1 U	1. U	1. U	1. U	1.2 U	4-IPT=1.47

Table 6 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)									Halogenated VOCs (HVOCs)					Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Isopropyl-benzene	n-Propyl-benzene	1,2,4-TMB	1,3,5-TMB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210.	1,500.	#	#	#	#	#	#	#	#	1,000.	3.	0.24	#
	DEQ 2004 AWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
Drinking Water																			
	MCL				5.	700.	1,000.	10,000.	#	#	#	#	#	#	#	100.	5.	2.	#
	Tap Water PRGs				0.35	1,300.	720.	#	#	#	#	#	#	#	#	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic) [4]				#	#	#	#	#	#	#	#	#	#	#	#	21,900.	#	#
	Oak Ridge National Laboratory (Tier II SCV) [3]				130.	7.3	9.8	#	#	#	#	#	#	#	#	590.	47.	#	#
WS-8-59	HAI	5237-011008-104	8-Oct-01	49-59	14.7	1. U	1. U	2. U	38.9	1. U	1. U	1. U	1. U	1. U	251.	1. U	1. U	92.4	U
		5237-011008-105 (duplicate)	8-Oct-01		21.4	1. U	2.02	2. U	49.9	1. U	1. U	1. U	1. U	1. U	345.	1. U	1. U	129.	U
		5237-011212-103	12-Dec-01		26.8	1. U	1.27	2.66	13.9	1. U	1. U	1. U	1. U	1.5 U	409.	2.2	3.53	332.	U
		5237-011212-104 (duplicate)	12-Dec-01		27.	1. U	1.32	2.57	12.4	1. U	1. U	1. U	1. U	1.03	398.	2.15	3.39	306.	U
		5237-020403-104	3-Apr-02		13.	1. U	1. U	1.11	2. U	1. U	1. U	1. U	1. U	1. U	99.6	1. U	1. U	136.	U
		5237-0207103	10-Jul-02		20.8	1. U	1.17	2.29	2. U	1. U	1. U	1. U	1. U	1. U	117.	1. U	1.19	160.	U
WS-9-34	HAI	5237-011008-102	8-Oct-01	24-34	1. U	1. U	1. U	2. U	5. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-011212-101	12-Dec-01		1. U	1. U	1. U	2. U	2.04	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-020402-101	2-Apr-02		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-020710-101	10-Jul-02		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
WS-10-27	MFA	WS-10-27	27-Oct-03	11-26	8,060.	716.	150.	1,472.	13,600.	33.3	11.1	136.	47.5	1. U	1. U	1. U	1. U	1. U	
		WS-10-27	29-Jan-04		5,040.	518.	76.3	265.7	8,350.	1. U	1. U	20.7	26.8	1. U	1. U	1. U	1.75	1. U	
		WS-10-27	29-Apr-04		7,640.	570.	337.	548.	7,110.		7.74	117.	36.	U	16.3	U	7.15	1.83	IPB=15.8 p-Cymene=2.68 Styrene=5.38
		WS-10-27	16-Nov-04		7,170.	617.	376.	984.	8,670.	23.3	7.8	101.	42.6	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	p-IPT=4.3 Styrene=7. n-Butylbenzene=1.22 tert-Butylbenzene=0.94 Carbon disulfide=0.22
WS-11-125	MFA	WS-11-125	28-Oct-03	109-124	252.	87.6	56.1	92.9	1,660.	1. U	1. U	12.6	3.67	14.2	5,340.	17.5	2,020.	961.	
		WS-11-125	30-Jan-04		328.	124.	68.5	125.3	2,340.	4.61	2.17	45.2	15.6	11.3	3,740.	35.	1,100.	936.	
		WS-11-125	29-Apr-04		379.	155.	84.2	207.7	6,520.		2.4	78.5	25.		7,020.	48.9	1,120.	1,010.	IPB=5.58 p-Cymene=1.82
		WS-11-125	16-Nov-04		536.	182.	120.	256.	1,770.	5.06	0.56	34.8	9.72	26.8	10,500.	88.2	484.	1,150.	p-IPT=1. Styrene=1.76
WS-11-161	MFA	WS-11-161	27-Oct-03	145-160	0.56	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1.	0.2 U	1.6 U	0.2 U	
		WS-11-161	29-Jan-04		0.2 U	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
		WS-11-161	27-Apr-04		U	U	U	U	1.24		U	U	U	U	0.78	U	0.64	U	
		WS-11-161	16-Nov-04		0.2 U	0.2 U	0.2 U	0.4 U	1. U	0.3 U	0.3 U	1. U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	

Table 6 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)									Halogenated VOCs (HVOCs)					Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Isopropyl-benzene	n-Propyl-benzene	1,2,4-TMB	1,3,5-TMB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210.	1,500.	#	#	#	#	#	#	#	#	1,000.	3.	0.24	#
	DEQ 2004 AWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
Drinking Water																			
	MCL				5.	700.	1,000.	10,000.	#	#	#	#	#	#	#	100.	5.	2.	#
	Tap Water PRGs				0.35	1,300.	720.	#	#	#	#	#	#	#	#	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic) [4]				#	#	#	#	#	#	#	#	#	#	#	#	21,900.	#	#
	Oak Ridge National Laboratory (Tier II SCV) [3]				130.	7.3	9.8	#	#	#	#	#	#	#	#	590.	47.	#	#
WS-12-125	MFA	WS-12-125	28-Oct-03	109-124	8.53	0.2 U	0.2 U	1.1	11.4 U	0.52	0.2 U	0.2 U	0.2 U	0.2 U	28.	0.2 U	4.89 U	63.5	
		WS-12-125	30-Jan-04		2.91	0.2 U	0.2 U	0.4 U	5.27	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	14.7	0.2 U	1.86	39.6	
		WS-12-125	26-Apr-04		9.56	U	U	1.35	7.83		U	U	U	U	11.5	U	1.35	12.7	IPB=0.45
		WS-12-125	17-Nov-04		4.01	0.2 U	0.2 U	0.4 U	1. U	0.3 U	0.3 U	1. U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	4.58	
WS-12-161	MFA	WS-12-161	27-Oct-03	145-160	0.55	0.2 U	0.2 U	0.4 U	0.46 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.9	0.2 U	3.74 U	0.3 U	
		WS-12-161	29-Jan-04		0.2 U	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.8	0.2 U	1.54	0.33	
		WS-12-161	26-Apr-04		U	U	U	U	0.29		U	U	U	U	1.31	U	U	U	Acetone=2360. Chlorobenzene=1.0
		WS-12-161	17-Nov-04		446.	79.7	0.2 U	87.1	202.	1.28	0.3 U	2.03	0.51	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Methyl chloride=0.34
WS-13-69	MFA	WS-13-69	29-Oct-03	52.6-67.6	129.	60.1	46.9	87.3	343.	1.31	1. U	8.07	2.13	29.	7,040.	89.8	55,200.	5.28	
		WS-13-69	30-Jan-04		680.	153.	58.6	196.7	833.	2.73	1. U	16.6	3.76	119.	17,300.	109.	116,000.	24.1	
		WS-13-69	28-Apr-04		587.	123.	57.5	124.4	527.		U	18.4	4.32	79.1	14,200.	68.4	117,000.	12.4	1,1,2-TCA=13.7 IPB=2.98 PCE=3.26
		WS-13-69	18-Nov-04		764.	732.	57.3	159.4	648.	2.3	0.3 U	11.6	2.18	96.6	20,900.	89.9	198,000.	20.7	Styrene=1.13 1,1,2-TCA=13. Methyl chloride=0.41 PCE=1.08
WS-13-105	MFA	WS-13-105	29-Oct-03	89-104	2.14	6.14 U	1.34	5.09 U	226.	0.46	0.2 U	2.78	0.5	1.61	360.	3.67	10,600.	0.52 U	
		WS-13-105-Dup	29-Oct-03		1.09	1.29	0.2 U	2.2	25.8	0.2	2. U	2. U	2. U	0.57	61.9	1.51	1,390.	0.2 U	
		WS-13-105	30-Jan-04		11.7	3.32	1.18	2.09	78.7	1. U	1. U	1. U	1. U	4.18	1,360.	43.6	949.	1.62	
		WS-13-105-Dup	30-Jan-04		3.23	4.14	1.79	3.6	114.	1. U	1. U	1. U	1. U	6.53	1,520.	88.	641.	2.	
		WS-13-105	28-Apr-04		U	U	U	U	48.8	0.3 U	U	U	U	U	868.	7.86	340.	44.5	
		WS-13-105-Dup	28-Apr-04		U	U	U	U	41.		U	U	U	U	1,150.	5.45	260.	36.9	
		WS-13-105	18-Nov-04		0.2 U	0.2 U	0.2 U	0.4 U	1. U	0.3 U	0.3 U	1. U	0.3 U	0.2 U	12.4	0.3 U	7.72	5.79	Methyl chloride=0.4
		WS-13-105-Dup	18-Nov-04		0.2 U	0.2 U	0.2 U	0.4 U	1. U	0.3 U	0.3 U	1. U	0.3 U	0.2 U	14.3	0.3 U	25.9	5.58	Methyl chloride=0.45
WS-14-125	MFA	WS-14-125	16-Nov-04	109-124	3,630.	514.	410.	675.	9,170.	19.6	2.43	86.2	25.1	0.2 U	8.54	0.3 U	0.2 U	4.09	p-IPT=2.18 n-Butylbenzene=0.97 Chloroform=0.97
WS-14-161	MFA	WS-14-161	16-Nov-04	145-160	0.43	0.2 U	0.2 U	0.4 U	3.92	0.3 U	0.3 U	1. U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	Carbon disulfide=0.26 Methyl chloride=0.32
WS-15-85	MFA	WS-15-85	18-Nov-04	70-85	3,650.	285.	268.	297.	3,470.	8.7	1.03	44.4	11.7	12.2	2,640.	23.6	186.	4.42	p-IPT=1.26 Chloroform=0.45 Methyl chloride=0.33
WS-15-140	MFA	WS-15-140	18-Nov-04	125-140	7.99	0.79	0.32	0.4 U	23.9	0.3 U	0.3 U	1. U	0.3 U	0.2 U	7.12	0.3 U	2.62	0.2 U	1,2-DCB=1.61 Chlorobenzene=4.42 Methyl chloride=0.37 MTBE=2.3

Table 6 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)									Halogenated VOCs (HVOCs)					Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Isopropyl-benzene	n-Propyl-benzene	1,2,4-TMB	1,3,5-TMB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210.	1,500.	#	#	#	#	#	#	#	#	1,000.	3.	0.24	#
	DEQ 2004 AWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
Drinking Water																			
	MCL				5.	700.	1,000.	10,000.	#	#	#	#	#	#	#	100.	5.	2.	#
	Tap Water PRGs				0.35	1,300.	720.	#	#	#	#	#	#	#	#	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic) [4]				#	#	#	#	#	#	#	#	#	#	#	#	21,900.	#	#
	Oak Ridge National Laboratory (Tier II SCV) [3]				130.	7.3	9.8	#	#	#	#	#	#	#	#	590.	47.	#	#
WS-16-125	MFA	WS-16-125	17-Nov-04	109-124	0.2 U	0.2 U	0.2 U	0.4 U	275.	0.3 U	0.3 U	1. U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	2-Butanone=15.4 Acetone=512 n-Butylbenzene=0.4 Chlorobenzene=2.21 MTBE=5.06
WS-16-161	MFA	WS-16-161	17-Nov-04	145-160	2.4	0.77	0.75	1.32	13.9	0.3 U	0.3 U	1. U	0.3 U	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	
WS-17-52	MFA	WS-17-52	16-Nov-04	41-51	105.	90.1	0.2 U	102.4	1,780.	3.66	0.31	28.5	7.68	0.2 U	0.2 U	0.3 U	0.2 U	0.2 U	p-IPT=1.29 n-Butylbenzene=0.71 Carbon disulfide=0.26
WS-17-94	MFA	WS-17-94	17-Nov-04	78-93	7.67	8.94	4.39	10.89	164.	0.98	0.3 U	1.05	0.3 U	0.2 U	0.2 U	0.3 U	0.81	0.2 U	Carbon disulfide=0.2 Chloroform=0.3
RP-01-31	URS		17-Apr-00	25-30	0.16														
			Fall-00		U														
			26-Jun-01		U														
	AMEC		5-Apr-02		U														
			15-Apr-04		U	U	U	U	U	U	U	U	U	U	U	U	U	U	
RP-01-51	URS		17-Apr-00	45-50	1.12														
			Fall-00		0.16														
			26-Jun-01		0.18														
	AMEC		8-Apr-02		0.5														
			15-Apr-04		0.64	U	U	U	U	U	U	U	U	0.94	4.64	0.48	4.52	10.1	Chlorobenzene=37 1,2-DCB=279 1,3-DCB=8.54 1,4-DCB=77.1
(duplicate)			15-Apr-04		0.6	U	U	U	U	U	U	U	U	1.	4.62	0.52	4.56	9.98	Chlorobenzene=35 1,2-DCB=270 1,3-DCB=8.1 1,4-DCB=76.8
RP-01-65	URS		17-Apr-00	59-64	27.4														
			Fall-00		13.7														
			26-Jun-01		41.4														
	AMEC		5-Apr-02		4.75														
			15-Apr-04		7.7	U	U	U	U	U	U	U	U	2.2	9.95	1.1	11.8	19.7	Chlorobenzene=84 1,2-DCB=678 1,3-DCB=20.3 1,4-DCB=186
RP-03-26	URS		7-Apr-00	20-25	U														
RP-03-30R	URS		Fall-00	23-28	U														
			27-Jun-01		U														
	AMEC		10-Apr-02		U														
			19-Apr-04		U	5.1		8.9	1,720.	2.5	U	18.9	7.8	U	U	U	U	U	Chlorobenzene=7.2

Table 6 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)									Halogenated VOCs (HVOCs)					Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Isopropyl-benzene	n-Propyl-benzene	1,2,4-TMB	1,3,5-TMB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210.	1,500.	#	#	#	#	#	#	#	#	1,000.	3.	0.24	#
	DEQ 2004 AWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
Drinking Water																			
	MCL				5.	700.	1,000.	10,000.	#	#	#	#	#	#	#	100.	5.	2.	#
	Tap Water PRGs				0.35	1,300.	720.	#	#	#	#	#	#	#	#	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic) [4]				#	#	#	#	#	#	#	#	#	#	#	#	21,900.	#	#
	Oak Ridge National Laboratory (Tier II SCV) [3]				130.	7.3	9.8	#	#	#	#	#	#	#	#	590.	47.	#	#
RP-03-52R	URS		Fall-00	46-51	U														
			27-Jun-01		U														
	AMEC		10-Apr-02		U														
			19-Apr-04		U	U	U	U	U	U	U	U	U	U	U	U	U	U	
RP-06-31	URS		14-Apr-00	24.5-29.5	0.45														
			Fall-00		0.18														
			27-Jun-01		U														
	AMEC		10-Apr-02		U														
RP-06-87	URS		14-Apr-00	81-86	3.1														
			Fall-00		1.85														
			27-Jun-01		1.85														
	AMEC		10-Apr-02		1.65														
			15-Apr-04		1.5	U	U	U	U	U	U	U	U	2.75	10.9	1.15	18.6	19.8	Chlorobenzene=103 1,2-DCB=583 1,3-DCB=13.5 1,4-DCB=146
RP-07-30	AMEC		3-May-02	25-30	U														
RP-07-55	AMEC		3-May-02	50-55	U														
RP-07-84	AMEC		3-May-02	79-84	U														
			13-Apr-04		1.9	U	U	U	U	U	U	U	U	2.7	26.6	1.35	5.5	16.3	Chlorobenzene=107 1,2-DCB=704 1,3-DCB=19.6 1,4-DCB=190
RP-07-119	AMEC		Spring-02	114-119	U														
			13-Apr-04		U	U	U	U	U	U	U	U	U	0.27	6.02	U	5.88	U	Chlorobenzene=4.1 Chloroform=0.44 1,2-DCB=54.9 1,3-DCB=3.56 1,4-DCB=16.8

Table 6 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Detected Volatile Organic Compounds by EPA Method 8260 or 8021

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – ug/L (ppb) VOCs by EPA Method 8260 or 8021														
					Aromatic VOCs (AVOCs)									Halogenated VOCs (HVOCs)					Other VOCs
					Benzene	Ethylbenzene	Toluene	Total Xylenes	Naphthalene	Isopropyl-benzene	n-Propyl-benzene	1,2,4-TMB	1,3,5-TMB	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl Chloride	
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																			
Fish Consumption																			
	EPA 2004 NRWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
	Portland Harbor specific fish consumption rate				5.1	210.	1,500.	#	#	#	#	#	#	#	#	1,000.	3.	0.24	#
	DEQ 2004 AWQC (organism only)				51.	2,100.	15,000.	#	#	#	#	#	#	#	#	10,000.	30.	2.4	#
Drinking Water																			
	MCL				5.	700.	1,000.	10,000.	#	#	#	#	#	#	#	100.	5.	2.	#
	Tap Water PRGs				0.35	1,300.	720.	#	#	#	#	#	#	#	#	0.12	0.028	0.02	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																			
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic) [4]				#	#	#	#	#	#	#	#	#	#	#	#	21,900.	#	#
	Oak Ridge National Laboratory (Tier II SCV) [3]				130.	7.3	9.8	#	#	#	#	#	#	#	#	590.	47.	#	#
Quality Control Samples (HAI)																			
Trip Blanks	HAI	5237-011008-101	8-Oct-01		1. U	1. U	1. U	2. U	5. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-011212-100	12-Dec-01		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-011213-106	13-Dec-01		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-011009-106	9-Oct-01		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-020402-100	2-Apr-02		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-020403-103	3-Apr-02		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-020710-100	10-Jul-02		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
Water EB	HAI	5237-011008-103	8-Oct-01		1. U	1. U	1. U	2. U	5. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	Acetone = 149.0
		5237-011212-102	12-Dec-01		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	Acetone = 54.7
		5237-020402-102	2-Apr-02		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U
		5237-020710-102	10-Jul-02		1. U	1. U	1. U	2. U	2. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1. U	1.2 U	U

Note:
AVOCs = aromatic volatile organic compounds
AWQC = Ambient Water Quality Criteria
bgs = below ground surface
DCB = dichlorobenzene
DCE = dichloroethene
DEQ = Oregon Department of Environmental Quality
EPA = U.S. Environmental Protection Agency
DEQ = Oregon Department of Environmental Quality
EB = equipment blank
HVOCs = halogenated volatile organic compounds
IPT = isopropyltoluene
PCE =tetrachloroethene
MCL = Maximum Contaminant Level
MTBE = methyl tert butyl ethene
NRWQC = National Recommended Water Quality Criteria
NRWQC = National Recommended Water Quality Criteria
PRG = Preliminary Remediation Goal
SCV = Secondary Chronic Value
TCA = trichloroethane
TMB = trimethylbenzene
U = not detected above detection limit indicated
TCE = trichloroethene
ug/L = micrograms per liter
VOCs = volatile organic compounds
# = Reference Level not established

1 = Screening Level Values are from *Portland Harbor Joint Source Control Strategy*, Final, December 2005
2 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved as potential ARARs under CERCLA. The final determination will be made in the EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be evaluated and prioritized on a case by case basis.
3= Tier II SCV values were taken from Suter II, G.W. and Tasco, C.L., 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision. ORNL publication ES/ER/TM-96/R2
4= Values were taken from Table 33c (OAR 340-41), which are Water Quality Guidance Vales, not criteria, that can be used in the application of Oregon's Narrative Toxics Criteria to waters of the state in order to protect aquatic life.

Table 7 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Polynuclear Aromatic Hydrocarbons by EPA Method 8270 SIM or 8270C

PAHs by EPA Method 8270 (SIM)					Analytical Results in ug/L (ppb)																
Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Carcinogenic PAHs								Non Carcinogenic PAHs								Total PAHs
					Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Indeno (1,2,3 cd) pyrene	Acenaphthene	Acenaphthylene	Anthracene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																					
Fish Consumption																					
	EPA 2004 NRWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
	Portland Harbor specific fish consumption rate				0.0018	0.0018	0.0018	#	0.0018	0.0018	0.0018	0.0018	99.	#	4,000.	14.	530.	#	#	400.	#
	DEQ 2004 AWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
Drinking Water																					
	MCL [3]				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	#
	Tap Water PRGs				0.092	0.0092	0.092	#	0.92	9.2	0.0092	0.092	370.	#	1,800.	1,500.	240.	6.2	#	180.	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																					
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	#	#	#	#	#	520 [5]	#	#	#	620 [5]	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [4]				0.027	0.014	#	#	#	#	#	#	#	#	0.73	#	3.9	12.	#	#	#
WS-1	CH2M HILL		Aug-85	7-22	31.	40.	24.	25.	U	36.	U	20.	270.	88.	39.	73.	95.	U	190.	81.	1,012.
WS-2	CH2M HILL		Aug-85	7.5-22	480.	760.	400.	370.	120.	650.	U	300.	940.	200.	630.	1,380.	440.	1,900.	630.	1,430.	10,630.
WS-3S	CH2M HILL		Aug-85	12-27	U	U	U	U	U	U	U	U	86.	U	U	U	13.	600.	13.	U	712.
WS-3I	G&M		Oct-90	55-60	U	U	U	U	U	U	U	U	93.	2.	2.	5.	22.	770.	6.	4.	904.
WS-4	CH2M HILL		Aug-85	6.5-21.5	U	U	U	U	U	U	U	U	350.	U	U	U	53.	350.	28.	14.	795.
WS-5	CH2M HILL		Aug-85	5-20	U	U	U	U	U	U	U	U	54.	31.	U	U	12.	58.	21.	10.	186.
WS-6	CH2M HILL		Aug-85	9-24	U	U	U	U	U	U	U	U	200.	32.	U	U	35.	2,100.	56.	10.	2,433.
WS-7	CH2M HILL		Aug-85	10-25	12.	10.	U	U	U	15.		U	19.	U	U	23.	U	U	U	11.	90.
			Oct-90		U	U	U	U	U	U	U	U	2.	U	U	3.	3.	5.	U	U	13.
WS-8-33	HAI	011009-107	9-Oct-01	23-33	0.55	0.27	0.19	0.15	0.1 U	0.6	0.1 U	0.11	98.7	1.17	8.42	7.83	32.5	485.	85.	7.65	728.1
		011213-105	13-Dec-01		0.25	0.27	0.1	0.1 U	0.1 U	0.3	0.1 U	0.11	105. J	2.35	11.9	7.35	31.9 J	287. J	70.5 J	7.15	524.2
		020403-105	3-Apr-02		0.31	0.1 U	0.1 U	0.1 U	0.1 U	0.42	0.1 U	0.1 U	91.6	1.01	6.43	7.18	18.4	110.	34.1	5.16	274.6
		020403-106D	3-Apr-02		0.32	0.1 U	0.1 U	0.1 U	0.1 U	0.44	0.1 U	0.1 U	84.	1.39	7.14	8.2	19.5	101.	33.8	6.38	262.2
		020710-104	10-Jul-02		0.53	0.15	0.11	0.11	0.12	0.53	0.1 U	0.1 U	129.	1.65	8.42	7.7	34.4	77.4	72.	8.16	340.3
		020710-105D	10-Jul-02		0.68	0.26	0.19	0.2	0.17	0.67	0.1 U	0.13	132.	1.48	8.63	8.15	36.2	77.6	80.4	7.37	354.1
WS-8-59	HAI	011008-104	8-Oct-01	49-59	0.25	0.1 U	0.1 U	0.1 U	0.1 U	0.29	0.1 U	0.1 U	18.5	0.38	4.2	5.8	7.9	22.7	31.8	6.4	98.2
		011008-105D	8-Oct-01		0.2	0.1 U	0.1 U	0.1 U	0.1 U	0.24	0.1 U	0.1 U	18.9	0.39	4.1	5.5	7.9	22.5	29.8	6.3	95.8
		011212-103	12-Dec-01		0.32	0.14	0.1	0.1	0.1	0.41	0.1 U	0.1 U	12.9	0.24	2.97	4.72	4.77	10.5	22.8	5.07	65.1
		011212-104D	12-Dec-01		0.23	0.1 U	0.1 U	0.1 U	0.1 U	0.29	0.1 U	0.1 U	12.6	0.23	2.94	4.46	5.13	10.8	21.8	4.49	63.
		020403-104	3-Apr-02		0.16	0.1 U	0.1 U	0.1 U	0.1 U	0.24	0.1 U	0.1 U	5.03	0.1 U	1.91	3.5	2.34	1.13	9.9	2.57	26.8
		020710-103	10-Jul-02		0.17	0.1 U	0.1 U	0.1 U	0.1 U	0.23	0.1 U	0.1 U	4.53	0.1 U	1.31	3.15	1.92	0.63	3.45	3.49	18.9

Table 7 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Polynuclear Aromatic Hydrocarbons by EPA Method 8270 SIM or 8270C

PAHs by EPA Method 8270 (SIM)					Analytical Results in ug/L (ppb)																
Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Carcinogenic PAHs								Non Carcinogenic PAHs								Total PAHs
					Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Indeno (1,2,3 cd) pyrene	Acenaphthene	Acenaphthylene	Anthracene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																					
Fish Consumption																					
	EPA 2004 NRWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
	Portland Harbor specific fish consumption rate				0.0018	0.0018	0.0018	#	0.0018	0.0018	0.0018	0.0018	99.	#	4,000.	14.	530.	#	#	400.	#
	DEQ 2004 AWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
Drinking Water																					
	MCL [3]				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	#
	Tap Water PRGs				0.092	0.0092	0.092	#	0.92	9.2	0.0092	0.092	370.	#	1,800.	1,500.	240.	6.2	#	180.	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																					
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	#	#	#	#	#	520 [5]	#	#	#	620 [5]	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [4]				0.027	0.014	#	#	#	#	#	#	#	#	0.73	#	3.9	12.	#	#	#
WS-9-34	HAI	011008-102	8-Oct-01	24-34	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	2.07	0.15	0.1 U	0.36	0.18	0.45	0.1 U	0.38	3.6
		011212-101	12-Dec-01		0.11	0.15	0.1	0.17	0.1	0.17	0.1 U	0.12	17.8	0.33	0.33	1.91	6.43	0.4	2.45	1.74	32.3
		020402-101	2-Apr-02		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	17.5	0.19	0.44	1.59	1.8	0.1 U	4.81	0.1 U	26.3
		020710-101	10-Jul-02		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	11.1	0.17	0.22	0.91 J	2.09 J	0.13	2.06 J	1.13	17.8
WS-10-27	MFA	WS-10-27	29-Apr-04	11-26	11.8	11.9	10.3	8.64	3.41	14.4	1.57	6.34	189.	14.6	27.2	45.	54.1	3,990.	83.1	43.4	4,514.8
		WS-10-27	16-Nov-04		137.	148.	131.	92.5	38.4	130.	15.1	70.9	542.	41.8	221.	438.	263.	8,960.	1,070.	421.	12,719.7
WS-11-125	MFA	WS-11-125	29-Apr-04	109-124	147.	144.	126.	53.1	29.9	174.	11.7	47.7	436.	81.5	257.	407.	304.	4,000.	1,510.	409.	8,137.9
		WS-11-125	16-Nov-04		10.	9.62	9.27	7.19	2.92	10.7	1.14	5.13	53.	22.1	20.1	35.	24.9	2,680.	80.5	40.8	3,012.4
WS-11-161	MFA	WS-11-161	27-Apr-04	145-160	0.08	0.13	0.11	0.11	U	0.11	U	0.07	0.25	0.07	0.07	0.23	0.13	0.71	0.42	0.3	2.8
		WS-11-161	16-Nov-04		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05	0.05 U	0.08	0.05 U	0.05 U	1.85	0.08	0.05 U	2.1
WS-12-125	MFA	WS-12-125	27-Apr-04	109-124	U	U	U	U		U		U	0.93	U	0.13	U	0.4	0.52	0.56	U	2.5
			17-Nov-04		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.17	0.05 U	0.05 U	0.05 U	0.07	0.68	0.09	0.05 U	
WS-12-161	MFA	WS-12-161	27-Apr-04	145-160	U	U	U	U		U		U	0.09	U	U	0.07	0.07	0.15	0.32	0.08	0.8
			17-Nov-04		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	1.25	0.05 U	0.05 U	
WS-13-69	MFA	WS-13-69	28-Apr-04	52.6-67.6	0.06	0.05	0.05	U	U	0.07	U	U	8.99	4.54	10.6	0.8	5.38	632.	9.8	0.74	673.1
		WS-13-69	18-Nov-04		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	5.79	2.48	1.02	0.47	3.04	793.	7.33	0.33	813.5
WS-13-105	MFA	WS-13-105	28-Apr-04	89-104	0.06	0.06	0.05	0.06	U	0.07	U	U	2.23	0.27	0.15	0.25	0.67	28.9	0.96	0.25	34.
		WS-13-105-D	28-Apr-04		U	U	U	U	U	U	U	U	1.53	0.18	0.08	0.13	0.47	14.1	0.68	0.13	17.3
		WS-13-105	18-Nov-04		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.38	0.11	0.05 U	0.5
		WS-13-105-D	18-Nov-04		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.11	0.12	0.05 U	0.2

Table 7 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Polynuclear Aromatic Hydrocarbons by EPA Method 8270 SIM or 8270C

PAHs by EPA Method 8270 (SIM)					Analytical Results in ug/L (ppb)																
Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Carcinogenic PAHs								Non Carcinogenic PAHs								Total PAHs
					Benzo (a) anthracene	Benzo (a) pyrene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Dibenzo (a,h) anthracene	Indeno (1,2,3 cd) pyrene	Acenaphthene	Acenaphthylene	Anthracene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																					
Fish Consumption																					
	EPA 2004 NRWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
	Portland Harbor specific fish consumption rate				0.0018	0.0018	0.0018	#	0.0018	0.0018	0.0018	0.0018	99.	#	4,000.	14.	530.	#	#	400.	#
	DEQ 2004 AWQC (organism only)				0.018	0.018	0.018	#	0.018	0.018	0.018	0.018	990.	#	40,000.	140.	5,300.	#	#	4,000.	#
Drinking Water																					
	MCL [3]				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	#
	Tap Water PRGs				0.092	0.0092	0.092	#	0.92	9.2	0.0092	0.092	370.	#	1,800.	1,500.	240.	6.2	#	180.	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																					
	EPA 2004 NRWQC (chronic)				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#	#	#	#	#	#	520 [5]	#	#	#	620 [5]	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [4]				0.027	0.014	#	#	#	#	#	#	#	#	0.73	#	3.9	12.	#	#	#
WS-14-125	MFA	WS-14-125	16-Nov-04	109-124	8.06	7.89	7.96	5.17	2.27	8.46	0.59	3.81	130.	3.2	22.1	30.	38.1	4,710.	90.1	33.1	5,100.8
WS-14-161	MFA	WS-14-161	16-Nov-04	145-160	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.66	0.05	0.05 U	0.7
WS-15-85	MFA	WS-15-85	18-Nov-04	70-85	0.22	0.22	0.2	0.15	0.08	0.22	0.05 U	0.12	39.3	1.79	3.05	2.94	11.	2,300.	19.9	3.09	2,382.3
WS-15-140	MFA	WS-15-140	18-Nov-04	125-140	0.05 U	0.05 U	0.05 U	0.05 U	0.05	0.05 U	0.05 U	0.05 U	1.05	0.05 U	0.06	0.07	0.18	15.7	1.07	0.05 U	18.2
WS-16-125	MFA	WS-16-125	17-Nov-04	109-124	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	1.33	0.07	0.08	0.09	0.37	153.	0.64	0.07	155.6
WS-16-161	MFA	WS-16-161	17-Nov-04	145-160	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.19	0.05 U	0.05 U	0.13	0.08	8.49	0.29	0.1	9.3
WS-17-52	MFA	WS-17-52	16-Nov-04	41-51	0.14	0.09	0.09	0.07	0.05 U	0.14	0.05 U	0.05	27.	0.71	4.39	4.35	12.2	241.	27.6	4.23	322.
WS-17-94	MFA	WS-17-94	17-Nov-04	78-93	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	5.5	0.12	0.26	0.21	1.79	102.	4.06	0.15	114.1
RP-03-30R	AMEC		19-Apr-04	23-28	0.6	U	U	U	U	U	U	U	483.	U	7.04	18.2	204.	1,440.	198.	14.4	2,365.2
RP-03-52R	AMEC		19-Apr-04	46-51	U	U	U	U	U	U	U	U	0.08	U	U	U	0.09	0.12	0.1	U	0.4
(duplicate)			19-Apr-04		U	U	U	U	U	U	U	U	0.08	U	U	U	0.09	0.12	0.11	U	U
RP-07-30	AMEC		13-Apr-04	25-30	U	U	U	U	U	U	U	U	7.78	0.1	0.14	1.19	2.32	U	2.88	0.93	15.3
RP-07-55	AMEC		3-May-02	50-55	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
RP-07-84	AMEC		13-Apr-04	79-84	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
RP-07-119	AMEC		13-Apr-04	114-119	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Quality Control Samples (HAI)																					
Water EB	HAI	5237-011008-103	8-Oct-01		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	U
		5237-011212-102	12-Dec-01		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	U
		5237-020402-102	2-Apr-02		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	U
		5237-020710-102	10-Jul-02		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	U

Note:
# = Reference Level not established
AWQC = Ambient Water Quality Criteria
DEQ = Oregon Department of Environmental Quality
EPA = U.S. Environmental Protection Agency
J = Estimated Concentration
MCL = Maximum Contaminant Level
ND = not detected above detection limit indicated
NRWQC = National Recommended Water Quality Criteria
PAHs = polynuclear aromatic hydrocarbons
ppb = parts per billion
PRG = Preliminary Remediation Goal
SCV = Secondary Chronic Value
ug/l = micrograms per liter

1 = Screening Level Values are from *Portland Harbor Joint Service Control Strategy, Final*, December 2005
2 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved) as potential ARARs under CERCLA. The final determination will be made in the EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be evaluated and prioritized on a case by case basis.
3 = MCL is based on benzo(a)pyrene
4 = Tier II SCV values were taken from Suter II, G.W. and Tasco, C.L., 1996. *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota*: 1996 Revision. ORNL publication ES/ER/TM-96/R2
5 = Values were taken from Table 33c (OAR 340-41), which are Water Quality Guidance Values, not criteria, that can be used in application of Oregon's Narrative Toxics Criteria to waters of the state in order to protect aquatic life

Table 8 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270					Analytical Results in ug/L (ppb)			
Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Carbazole	Dibenzofuran	2-Methyl-naphthalene	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]								
Fish Consumption								
	EPA 2004 NRWQC (organism only)				#	#	#	#
	Portland Harbor specific fish consumption rate				#	#	#	#
	DEQ 2004 AWQC (organism only)				#	#	#	#
Drinking Water								
	MCL				#	#	0.2 [4]	#
	Tap Water PRGs				3.4	12.	#	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]								
	EPA 2004 NRWQC (chronic)				#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [3]				#	#	2.1	#
WS-1	CH2M HILL		Aug-85	7-22		77.		See PAH Table
WS-2	CH2M HILL		Aug-85	7.5-22		75.	260.	See PAH Table
WS-3S	CH2M HILL		Aug-85	12-27		U	67.	See PAH Table
WS-3I	G&M		Oct-90	55-60		4.		See PAH Table
WS-4	CH2M HILL		Aug-85	6.5-21.5		U	19.	See PAH Table
WS-5	CH2M HILL		Aug-85	5-20		U	12.	See PAH Table
WS-6	CH2M HILL		Aug-85	9-24		24.	41.	See PAH Table
WS-7	CH2M HILL		Aug-85	10-25		U	U	See PAH Table
			Oct-90			3.	U	See PAH Table
WS-8-33	HAI	011009-107	9-Oct-01	23-33	14.7	4.26	59.2	See PAH Table
		011213-105	13-Dec-01		45.2	3.97	65.8	See PAH Table
		020403-105	3-Apr-02		11.5	2.12	5.48	See PAH Table
		020710-104	10-Jul-02		18.3	3.05	41.9	See PAH Table
WS-8-59	HAI	011008-104	8-Oct-01	49-59	4. U	2. U	6.74	See PAH Table
		011008-105D	8-Oct-01		4. U	2. U	7.17	See PAH Table
		011212-103	12-Dec-01		4. U	2. U	2. U	See PAH Table
		011212-104D	12-Dec-01		4. U	2. U	2. U	See PAH Table
		020403-104	3-Apr-02		8. U	4. U	4. U	See PAH Table
		020710-103	10-Jul-02		4. U	2. U	2. U	See PAH Table

Table 8 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270					Analytical Results in ug/L (ppb)			
Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Carbazole	Dibenzofuran	2-Methyl-naphthalene	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]								
Fish Consumption								
	EPA 2004 NRWQC (organism only)				#	#	#	#
	Portland Harbor specific fish consumption rate				#	#	#	#
	DEQ 2004 AWQC (organism only)				#	#	#	#
Drinking Water								
	MCL				#	#	0.2 [4]	#
	Tap Water PRGs				3.4	12.	#	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]								
	EPA 2004 NRWQC (chronic)				#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [3]				#	#	2.1	#
WS-9-34	HAI	011008-102	8-Oct-01	24-34	4. U	2. U	2. U	See PAH Table
		011212-101	12-Dec-01		4. U	2. U	2. U	See PAH Table
		020402-101	2-Apr-02		8. U	4. U	4. U	See PAH Table
		020710-101	10-Jul-02		4. U	2. U	2. U	See PAH Table
WS-10-27	MFA	WS-10-27	29-Apr-04	11-26	245.	12.6	70.5	See PAH Table
		WS-10-27	16-Nov-04		338.	25.2	510.	See PAH Table
WS-11-125	MFA	WS-11-125	29-Apr-04	109-124	153.	46.9	70.5	See PAH Table
		WS-11-125	16-Nov-04		136.	1. U	122.	See PAH Table
WS-11-161	MFA	WS-11-161	27-Apr-04	145-160	U	U	U	See PAH Table
		WS-11-161	16-Nov-04		0.99 U	0.99 U	0.99 U	See PAH Table
WS-12-125	MFA	WS-12-125	17-Nov-04		1.01 U	1.01 U	1.01 U	See PAH Table
WS-12-161	MFA	WS-12-161	17-Nov-04		0.95 U	0.95 U	0.95 U	See PAH Table
WS-13-69	MFA	WS-13-69	28-Apr-04	52.6-67.6	7.86	U	23.	See PAH Table
		WS-13-69	18-Nov-04		6.28	0.96 U		See PAH Table
WS-13-105	MFA	WS-13-105	28-Apr-04	89-104	1.	U	5.25	See PAH Table
		WS-13-105-DUP	28-Apr-04		1.55	U	4.63	See PAH Table
		WS-13-105	18-Nov-04		1.05 U	1.05 U	1.05 U	See PAH Table
		WS-13-105-DUP	18-Nov-04		1.02 U	1.02 U		See PAH Table

Table 8 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Detected Semi-Volatile Organic Compounds by EPA Method 8270C

SVOCs by EPA Method 8270					Analytical Results in ug/L (ppb)			
Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Carbazole	Dibenzofuran	2-Methyl-naphthalene	PAHs
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]								
Fish Consumption								
	EPA 2004 NRWQC (organism only)				#	#	#	#
	Portland Harbor specific fish consumption rate				#	#	#	#
	DEQ 2004 AWQC (organism only)				#	#	#	#
Drinking Water								
	MCL				#	#	0.2 [4]	#
	Tap Water PRGs				3.4	12.	#	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]								
	EPA 2004 NRWQC (chronic)				#	#	#	#
	DEQ 2004 AWQC (chronic)				#	#	#	#
	Oak Ridge National Laboratory (Tier II SCV) [3]				#	#	2.1	#
WS-14-125	MFA	WS-14-125	16-Nov-04	109-124	217.	8.33		See PAH Table
WS-14-161	MFA	WS-14-161	16-Nov-04	145-160	0.95 U	0.95 U		See PAH Table
WS-15-85	MFA	WS-15-85	18-Nov-04	70-85	128.	2.46		See PAH Table
WS-15-140	MFA	WS-15-140	18-Nov-04	125-140	0.95 U	0.95 U		See PAH Table
WS-16-125	MFA	WS-16-125	17-Nov-04	109-124	0.98 U	0.98 U		See PAH Table
WS-16-161	MFA	WS-16-161	17-Nov-04	145-160	0.97 U	0.97 U		See PAH Table
WS-17-52	MFA	WS-17-52	16-Nov-04	41-51	16.2	1.03 U		See PAH Table
WS-17-94	MFA	WS-17-94	17-Nov-04	78-93	2.89	0.97 U		See PAH Table
Quality Control Samples (HAI)								
Water EB	HAI	5237-011008-103	8-Oct-01		4. U	2. U	2. U	See Table 14
		5237-011212-102	12-Dec-01		4. U	2. U	2. U	See Table 14

Note:
AWQC = Ambient Water Quality Criteria
bgs = below ground surface
DEQ = Oregon Department of Environmental Quality
EB = equipment blank
EPA = U.S. Environmental Protection Agency
MCL = Maximum Contaminant Level
NRWQC = National Recommended Water Quality Criteria
ppb = parts per billion
PRG = Potential Remediation Goal
# = Reference Level not established
U = not detected above detection limit indicated
ug/l = micrograms per liter

1= Screening Level Values are from *Portland Harbor Joint Source Control Strategy*, Final, December 2005
2 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved) as potential ARARs under CERCLA. The final determination will be made in the EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be evaluated and prioritized on a case by case basis.
3 = Tier II SCV values were taken from Suter II, G.W. and Tasco, C.L., 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision. ORNL publication ES/ER/TM-96/R2
4 = MCL is based on benzo(a)pyrene

Table 9 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Metals and Cyanide

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm) Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series																	
					Antimony		Arsenic		Barium		Cadmium [5]		Chromium		Cobalt		Copper [5]		Iron		Lead [5]	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																						
Fish Consumption																						
	EPA 2004 NRWQC (organism only)				0.64	#	0.0001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	Portland Harbor specific fish consumption rate				0.064	#	0.00001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (organism only)				0.64	#	0.0001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Drinking Water																						
	MCL				0.006	#	0.01	#	#	#	0.005	#	0.1	#	#	#	1.3	#	#	#	0.015	#
	Tap Water PRGs				0.015	#	0.00005	#	#	#	0.018	#	#	#	#	#	1.5	#	#	#	#	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																						
	EPA 2004 NRWQC (chronic)				#	#	0.15	#	#	#	0.0001	#	#	#	#	#	0.0027	#	#	#	0.0005	#
	DEQ 2004 AWQC (chronic)				1.6 [3]	#	#	#	#	#	0.00038 [6]	#	#	#	#	#	0.0036 [6]	#	#	#	0.00054 [6]	#
	Oak Ridge National Laboratory (Tier II SCV) [10]				0.03	#	0.0031 [4]	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
WS-1	CH2M HILL		Aug-85	7-22			0.005				0.003		0.01				0.002				0.052	
WS-2	CH2M HILL		Aug-85	7.5-22			0.005 U				0.002		0.008				0.007				0.04	
WS-3S	CH2M HILL		Aug-85	12-27			0.005				0.001		0.005				0.001				0.025	
WS-3I	G&M		Oct-90	55-60			U				U		U				U				U	
	AMEC		13-Apr-04				0.002	0.001									0.002		10.5		0.0004	
W-03-81	URS		6-Apr-00	75-80																		
	AMEC		13-Apr-04				0.003	0.003									0.002		46.3			
WS-4	CH2M HILL		Aug-85	6.5-21.5			0.005 U				0.003		0.009				0.002				0.049	
WS-5	CH2M HILL		Aug-85	5-20			0.005 U				0.002		0.006				0.02				0.028	
WS-6	CH2M HILL		Aug-85	9-24			0.01				0.002		0.006				0.001				0.03	
WS-7	CH2M HILL		Aug-85	10-25			0.005 U				0.001 U		0.004				0.004				0.02	
			Oct-90				0.005 U				0.001 U		U				U				U	
WS-8-33	HAI	011009-107	9-Oct-01	23-33	0.003 U		0.006		0.184		0.001 U		0.007		0.004		0.026		117.		0.008	
		011213-105	13-Dec-01		0.005 U		0.016		0.142		0.002 U		0.005		0.005		0.005		76.6		0.005 U	
		020403-105	3-Apr-02		0.005 U	0.005 U	0.018	0.015	0.115	0.104	0.005 U	0.002 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.015 U	90.9	81.5	0.005 U	0.01 U
		020403-106D	3-Apr-02		0.005 U		0.017		0.114		0.002 U		0.005 U		0.005 U		0.005 U		89.6		0.005 U	
		020710-104	10-Jul-02		0.005 U	0.005 U	0.015	0.02	0.117	0.114	0.002 U	0.022 U	0.005 U	0.006 U	0.005 U	0.006 U	0.005 U	0.006 U	80.6	80.7	0.005 U	0.006 U
		020710-105D	10-Jul-02		0.005 U		0.017		0.116		0.002 U		0.005 U		0.005 U		0.005 U		80.3		0.005 U	

Table 9 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Metals and Cyanide

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm) Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series																	
					Antimony		Arsenic		Barium		Cadmium [5]		Chromium		Cobalt		Copper [5]		Iron		Lead [5]	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																						
Fish Consumption																						
	EPA 2004 NRWQC (organism only)				0.64	#	0.0001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	Portland Harbor specific fish consumption rate				0.064	#	0.00001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (organism only)				0.64	#	0.0001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Drinking Water																						
	MCL				0.006	#	0.01	#	#	#	0.005	#	0.1	#	#	#	1.3	#	#	#	0.015	#
	Tap Water PRGs				0.015	#	0.00005	#	#	#	0.018	#	#	#	#	#	1.5	#	#	#	#	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																						
	EPA 2004 NRWQC (chronic)				#	#	0.15	#	#	#	0.0001	#	#	#	#	#	0.0027	#	#	#	0.0005	#
	DEQ 2004 AWQC (chronic)				1.6 [3]	#	#	#	#	#	0.00038 [6]	#	#	#	#	#	0.0036 [6]	#	#	#	0.00054 [6]	#
	Oak Ridge National Laboratory (Tier II SCV) [10]				0.03	#	0.0031 [4]	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
WS-8-59	HAI	011008-104	8-Oct-01	49-59	0.003 U		0.005 U		0.153		0.001 U		0.005 U		0.001 U		0.006		49.6		0.005 U	
		011008-105D	8-Oct-01		0.003 U		0.005 U		0.142		0.001 U		0.005 U		0.001 U		0.004		47.		0.005 U	
		011212-103	12-Dec-01		0.005 U		0.005 U		0.123		0.002 U		0.005 U		0.005 U		0.005 U		48.1		0.005 U	
		011212-104D	12-Dec-01		0.005 U		0.005 U		0.119		0.002 U		0.005 U		0.005 U		0.005 U		47.2		0.005 U	
		020403-104	3-Apr-02		0.005 U		0.005 U		0.093		0.002 U		0.005 U		0.005 U		0.005 U		46.8		0.005 U	
		020710-103	10-Jul-02		0.005 U		0.005 U		0.1		0.002 U		0.005 U		0.005 U		0.005 U		45.7		0.005 U	
WS-9-34	HAI	011008-102	8-Oct-01	24-34	0.003 U		0.005 U		0.246		0.001 U		0.005 U		0.028		0.007		33.9		0.005 U	
		011212-101	12-Dec-01		0.007	0.011	0.061	0.005 U	0.923	0.035	0.002 U	0.002 U	0.021	0.005 U	0.044	0.011	0.043	0.005 U	188.	88.	0.197	0.005 U
		020402-101	2-Apr-02		0.005 U	0.009	0.038	0.007	0.607	0.047	0.002 U	0.002 U	0.019	0.005 U	0.027	0.013	0.039	0.015 U	150.	37.7	0.095	0.01 U
		020710-101	10-Jul-02		0.005 U	0.006 U	0.031	0.006 U	0.553	0.081	0.002 U	0.002 U	0.033	0.006 U	0.04	0.023	0.036	0.006 U	146.	64.3	0.131	0.006 U
WS-10-27	MFA	WS-10-27	29-Apr-04	11-26									0.013		U				48.5			
		WS-10-27	16-Nov-04		0.02 U								0.017		0.007		0.01 U		63.2			
WS-11-125	MFA	WS-11-125	29-Apr-04	109-124									0.012		U				36.7			
		WS-11-125	16-Nov-04		0.02 U								0.016		0.005 U		0.01 U		36.7			
WS-11-161	MFA	WS-11-161	27-Apr-04	145-160									0.015		U				22.7			
		WS-11-161	16-Nov-04		0.02 U								0.019		0.005 U		0.01 U		25.5			
WS-12-125	MFA	WS-12-125	26-Apr-04	109-124									0.01		U				44.3			
		WS-11-125	17-Nov-04		0.02 U								0.018		0.005 U		0.01 U		43.7			

Table 9 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Metals and Cyanide

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm) Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series																	
					Antimony		Arsenic		Barium		Cadmium [5]		Chromium		Cobalt		Copper [5]		Iron		Lead [5]	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																						
Fish Consumption																						
	EPA 2004 NRWQC (organism only)				0.64	#	0.0001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	Portland Harbor specific fish consumption rate				0.064	#	0.00001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (organism only)				0.64	#	0.0001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Drinking Water																						
	MCL				0.006	#	0.01	#	#	#	0.005	#	0.1	#	#	#	1.3	#	#	#	0.015	#
	Tap Water PRGs				0.015	#	0.00005	#	#	#	0.018	#	#	#	#	#	1.5	#	#	#	#	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																						
	EPA 2004 NRWQC (chronic)				#	#	0.15	#	#	#	0.0001	#	#	#	#	#	0.0027	#	#	#	0.0005	#
	DEQ 2004 AWQC (chronic)				1.6 [3]	#	#	#	#	#	0.00038 [6]	#	#	#	#	#	0.0036 [6]	#	#	#	0.00054 [6]	#
	Oak Ridge National Laboratory (Tier II SCV) [10]				0.03	#	0.0031 [4]	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
WS-12-161	MFA	WS-12-161	26-Apr-04	145-160									0.013		U				16.5			
		WS-12-161	17-Nov-04		0.02 U								0.025		0.005 U		0.01 U		26.7			
WS-13-69	MFA	WS-13-69	28-Apr-04	52.6-67.6									0.011		0.009				74.1			
		WS-13-69	18-Nov-04		0.02 U								0.027		0.007		0.01 U		88.3			
WS-13-105	MFA	WS-13-105	28-Apr-04	89-104									0.015		U				26.6			
		WS-13-105-DUP	28-Apr-04										0.015		U				27.1			
		WS-13-105	18-Nov-04		0.02 U								0.036		0.005 U		0.01 U		50.1			
		WS-13-105-DUP	18-Nov-04		0.02 U								0.022		0.005 U		0.01 U		52.4			
WS-14-125	MFA	WS-14-125	16-Nov-04	109-124	0.02 U								0.015		0.005 U		0.01 U		23.6			
WS-14-161	MFA	WS-14-161	16-Nov-04	145-160	0.02 U								0.012		0.007		0.01 U		29.1			
WS-15-85	MFA	WS-15-85	18-Nov-04	70-85	0.021								0.045		0.012		0.011		39.6			
WS-15-140	MFA	WS-15-140	18-Nov-04	125-140	0.02 U								0.07		0.005 U		0.01 U		12.			
WS-16-125	MFA	WS-16-125	17-Nov-04	109-124	0.02 U								0.014		0.005 U		0.01 U		48.8			
WS-16-161	MFA	WS-16-161	17-Nov-04	145-160	0.02 U								0.005 U		0.007		0.01 U		30.3			
WS-17-52	MFA	WS-17-52	16-Nov-04	41-51	0.02 U								0.063		0.023		0.017		48.7			
WS-17-94	MFA	WS-17-94	17-Nov-04	78-93	0.02 U								0.016		0.005 U		0.01 U		31.9			
RP-06-87	URS		14-Apr-00	81-86			0.014	0.01				0.0002	0.001				0.006	0.001	6.5			0.0001
RP-07-84	AMEC		13-Apr-04	79-84			0.005	0.004					0.003				0.007		3.73		0.001	
RP-07-119	AMEC		13-Apr-04	114-119													0.002		0.485			

Table 9 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Metals and Cyanide

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm) Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series																	
					Antimony		Arsenic		Barium		Cadmium [5]		Chromium		Cobalt		Copper [5]		Iron		Lead [5]	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
HUMAN HEALTH SCREENING LEVEL VALUES [1,2]																						
Fish Consumption																						
	EPA 2004 NRWQC (organism only)				0.64	#	0.0001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	Portland Harbor specific fish consumption rate				0.064	#	0.00001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
	DEQ 2004 AWQC (organism only)				0.64	#	0.0001	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Drinking Water																						
	MCL				0.006	#	0.01	#	#	#	0.005	#	0.1	#	#	#	1.3	#	#	#	0.015	#
	Tap Water PRGs				0.015	#	0.00005	#	#	#	0.018	#	#	#	#	#	1.5	#	#	#	#	#
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [1,2]																						
	EPA 2004 NRWQC (chronic)				#	#	0.15	#	#	#	0.0001	#	#	#	#	#	0.0027	#	#	#	0.0005	#
	DEQ 2004 AWQC (chronic)				1.6 [3]	#	#	#	#	#	0.00038 [6]	#	#	#	#	#	0.0036 [6]	#	#	#	0.00054 [6]	#
	Oak Ridge National Laboratory (Tier II SCV) [10]				0.03	#	0.0031 [4]	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Quality Control Samples (HAI)																						
Water EB	HAI	011212-102	12-Dec-01		0.003 U		0.005 U		0.005 U		0.002 U		0.005 U		0.005 U		0.005 U		0.022		0.005 U	
		011008-103	8-Oct-01		0.003 U		0.005 U		0.005 U		0.001 U		0.005 U		0.001 U		0.001 U		0.042		0.005 U	
		020402-102	2-Apr-02		0.005 U		0.005 U		0.005 U		0.002 U		0.005 U		0.005 U		0.005		0.142		0.005 U	
		020710-102	10-Jul-02		0.005 U		0.005 U		0.005 U		0.002 U		0.005 U		0.005 U		0.005 U		0.01 U		0.005 U	

EPA = U.S. Environmental Protection Agency
# = Reference Level not established
AWQC = Ambient Water Quality Criteria
bgs = below ground surface
DEQ = Oregon Department of Environmental Quality
EB = equipment blank
J = Estimated Concentration
MCL = Maximum Contaminant Level
mg/l = milligrams/liter
ND = not detected above detection limit indicated
NRWQC = National Recommended Water Quality Criteria
ppb = parts per billion
ppm = parts per million
PRG = Potential Remediation Goal
SCV = Secondary Chronic Value
U = not detected above detection limit indicated
ug/l = micrograms per liter

1 = Screening Level Values for Soil/Stormwater Sediment, Stormwater and Surface water, *Portland Harbor Joint Source Control Strategy*, DEQ, December 2005.
2 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved) as potential ARARs under CERCLA. The final determination will be made in the EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be evaluated and prioritized on a case by case basis.
3 = Values were taken from Table 33c (OAR 340-41), which are Water Quality Guidance Values, not criteria, that can be used in application of Oregon's Narrative Toxics Criteria to waters of the state in order to protect aquatic life
4 = Value for Arsenic V.
5 = This is a hardness dependent metal. All values were calculated based on 25 mg/l of $CaCO_3$.
6 = These values were taken from OAR 340-41 Table 20 because they will remain the enforceable values for these particular analytes.
7 = National Secondary Drinking Water Standards.
8 = This metal is listed as the total recoverable metal in the water column.
9 = Cyanide value is based on a free cyanide value per DEQ OAR 340-41 Table 33, and EPA values are based on total Cyanide.
10 = Tier II SCV values were taken from Suter II, G.W. and Tasco, C.L., 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision. ORNL publication ES/ER/TM-96/R2.

Table 9 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Metals and Cyanide

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm)																	
					Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series																EPA Method 9010	
					Magnesium		Manganese		Nickel [5]		Selenium		Silver [5]		Titanium		Vanadium		Zinc [5]		Cyanide [9]	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Amenable
HUMAN HEALTH SCREENING LEVEL VALUES [8,10]																						
Fish Consumption																						
	EPA 2004 NRWQC (organism only)				#	#	0.1	#	4.6	#	4.2	#	#	#	#	#	#	#	26.	#	#	0.14
	Portland Harbor specific fish consumption rate				#	#	0.01	#	0.46	#	0.42	#	#	#	#	#	#	#	2.6	#	#	0.014
	DEQ 2004 AWQC (organism only)				#	#	0.1	#	4.6	#	4.2	#	#	#	#	#	#	#	26.	#	#	0.14
Drinking Water																						
	MCL				#	#	0.05 [7]	#	#	#	0.05	#	0.1 [7]	#	#	#	#	#	5 [7]	#	#	0.2
	Tap Water PRGs				#	#	0.88	#	0.73	#	0.18	#	0.18	#	#	#	#	#	11.	#	#	0.73
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [8,10]																						
	EPA 2004 NRWQC (chronic)				#	#	#	#	0.016	#	0.005 [8]	#	#	#	#	#	#	#	0.036	#	#	0.0052
	DEQ 2004 AWQC (chronic)				#	#	#	#	0.049 [6]	#	0.035	#	0.00012 [6]	#	#	#	#	#	0.033	#	#	0.0052
	Oak Ridge National Laboratory (Tier II SCV) [2]				#	#	0.12	#	#	#	#	#	0.0004	#	#	#	#	#	#	#	#	#
WS-1	CH2M HILL		Aug-85	7-22					0.01										0.026		0.18	
WS-2	CH2M HILL		Aug-85	7.5-22					0.007										0.016		0.058	
WS-3S	CH2M HILL		Aug-85	12-27					0.005										0.017		0.13	
WS-3I	G&M		Aug-85	55-60					U										U	U	0.107	
	AMEC				55.		5.5		0.005	0.005									0.007	0.007		
W-03-81	URS		6-Apr-00	75-80																		
	AMEC		13-Apr-04		25.1		2.47		0.005	0.004							0.002		0.006	0.004		
WS-4	CH2M HILL		Aug-85	6.5-21.5					0.011										0.05		0.93	
WS-5	CH2M HILL		Aug-85	5-20					0.006										0.011		0.13	
WS-6	CH2M HILL		Aug-85	9-24					0.006										0.011		0.04	
WS-7	CH2M HILL		Aug-85	10-25					0.003										0.047		0.033	
			Oct-90						U										0.026		0.031	
WS-8-33	HAI	011009-107	9-Oct-01	23-33	27.2		5.07		0.004		0.005 U		0.002 U		0.766		0.04		0.05		0.02 U,J	0.02 U,J
		011213-105	13-Dec-01		30.		5.57		0.005 U		0.006		0.005 U		0.076		0.006		0.015		0.854	0.02 U
		020403-105	3-Apr-02		21.8	19.9	4.88	4.51	0.005 U	0.005 U	0.005 U	0.008	0.005 U	0.005 U	0.022 J	0.01 U	0.005 U	0.005 U	0.024	0.015 U	0.416	0.064 J
		020403-106D	3-Apr-02		21.5		4.85		0.005 U		0.005 U		0.005 U		0.013 J		0.005 U		0.005 U		0.615	0.183 J
		020710-104	10-Jul-02		24.1	24.3	4.89	5.02	0.005 U	0.006 U	0.005 U	0.006 U	0.005 U	0.006 U	0.029	0.011 U	0.005	0.006 U	0.005 U	0.006 U	0.724	0.08 U
		020710-105D	10-Jul-02		24.2		4.89	4.89	0.005 U		0.005 U		0.005 U		0.017		0.005 U		0.005 U		0.726	0.08 U

Table 9 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Metals and Cyanide

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm)																	
					Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series																EPA Method 9010	
					Magnesium		Manganese		Nickel [5]		Selenium		Silver [5]		Titanium		Vanadium		Zinc [5]		Cyanide [9]	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Amenable
HUMAN HEALTH SCREENING LEVEL VALUES [8,10]																						
Fish Consumption																						
	EPA 2004 NRWQC (organism only)				#	#	0.1	#	4.6	#	4.2	#	#	#	#	#	#	#	26.	#	#	0.14
	Portland Harbor specific fish consumption rate				#	#	0.01	#	0.46	#	0.42	#	#	#	#	#	#	#	2.6	#	#	0.014
	DEQ 2004 AWQC (organism only)				#	#	0.1	#	4.6	#	4.2	#	#	#	#	#	#	#	26.	#	#	0.14
Drinking Water																						
	MCL				#	#	0.05 [7]	#	#	#	0.05	#	0.1 [7]	#	#	#	#	#	5 [7]	#	#	0.2
	Tap Water PRGs				#	#	0.88	#	0.73	#	0.18	#	0.18	#	#	#	#	#	11.	#	#	0.73
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [8,10]																						
	EPA 2004 NRWQC (chronic)				#	#	#	#	0.016	#	0.005 [8]	#	#	#	#	#	#	#	0.036	#	#	0.0052
	DEQ 2004 AWQC (chronic)				#	#	#	#	0.049 [6]	#	0.035	#	0.00012 [6]	#	#	#	#	#	0.033	#	#	0.0052
	Oak Ridge National Laboratory (Tier II SCV) [2]				#	#	0.12	#	#	#	#	#	0.0004	#	#	#	#	#	#	#	#	#
WS-8-59	HAI	011008-104	8-Oct-01	49-59	0.05 U		2.85		0.003 U		0.005 U		0.002 U		0.564		0.023		0.031		0.468	0.02 U,J
		011008-105D	8-Oct-01		0.05 U		2.84		0.003 U		0.005 U		0.002 U		0.448		0.017		0.024		0.456	0.02 U,J
		011212-103	12-Dec-01		54.7		1.83		0		0.005 U		0.005 U		0.169		0.008		0.01		0.725 J	0.263
		011212-104D	12-Dec-01		54.2		1.83		0		0.005 U		0.005 U		0.132		0.007		0.009		0.066 J	0.02 U,J
		020403-104	3-Apr-02		39.9		3.33		0.005 U		0.005 U		0.005 U		0.069		0.005 U		0.009		1.42	0.4 U
		020710-103	10-Jul-02		46.4		2.19		0.005 U		0.005 U		0.005 U		0.108		0.006		0.006 U		0.459	0.04 U
WS-9-34	HAI	011008-102	8-Oct-01	24-34	53.3		4.31		0.003 U		0.005 U		0.002 U		0.006		0.001 U		0.006		0.14	0.02 U,J
		011212-101	12-Dec-01		60.2	15.6	7.1	2.24	0.037	0.006	0.005 U	0.005 U	0.005 U	0.005 U	0.217	0.001 U	0.055	0.005 U	0.376	0.016	0.074	0.02 U
		020402-101	2-Apr-02		45.5	22.7	4.35	2.59	0	0.009	0.005 U	0.005	0.005 U	0.005 U	0.254	0.01 U	0.048	0.005 U	0.197	0.015 U	0.11	0.04 U
		020710-101	10-Jul-02		57.1	36.4	6.66	4.73	0.037	0.006	0.005 U	0.006 U	0.005 U	0.006 U	0.27	0.011 U	0.043	0.006 U	0.224	0.015	0.074 J	0.04 U,J
WS-10-27	MFA	WS-10-27	29-Apr-04	11-26	23.4		3.2		U						0.02		0.015		U		1.18	
		WS-10-27	16-Nov-04		39.1		7.93		0.005 U						0.264		0.022		0.041		1.46	
WS-11-125	MFA	WS-11-125	29-Apr-04	109-124	46.8		1.88		U						0.007		U		U		0.427	
		WS-11-125	16-Nov-04		50.4		1.81		0.005 U						0.005		0.01 U		0.01 U		0.574	
WS-11-161	MFA	WS-11-161	27-Apr-04	145-160	20.2		1.85		U						U		U		0.013		U	
		WS-11-161	16-Nov-04		24.3		2.34		0.005 U						0.005 U		0.01 U		0.01 U		0.01 U	
WS-12-125	MFA	WS-12-125	26-Apr-04	109-124	31.		1.76		U						0.009		U		U		0.422	
		WS-11-125	17-Nov-04		37.1		1.88		0.005 U						0.005 U		0.01 U		0.01 U		0.5	

Table 9 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Metals and Cyanide

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm)																	
					Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series																EPA Method 9010	
					Magnesium		Manganese		Nickel [5]		Selenium		Silver [5]		Titanium		Vanadium		Zinc [5]		Cyanide [9]	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Amenable
HUMAN HEALTH SCREENING LEVEL VALUES [8,10]																						
Fish Consumption																						
	EPA 2004 NRWQC (organism only)				#	#	0.1	#	4.6	#	4.2	#	#	#	#	#	#	#	26.	#	#	0.14
	Portland Harbor specific fish consumption rate				#	#	0.01	#	0.46	#	0.42	#	#	#	#	#	#	#	2.6	#	#	0.014
	DEQ 2004 AWQC (organism only)				#	#	0.1	#	4.6	#	4.2	#	#	#	#	#	#	#	26.	#	#	0.14
Drinking Water																						
	MCL				#	#	0.05 [7]	#	#	#	0.05	#	0.1 [7]	#	#	#	#	#	5 [7]	#	#	0.2
	Tap Water PRGs				#	#	0.88	#	0.73	#	0.18	#	0.18	#	#	#	#	#	11.	#	#	0.73
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [8,10]																						
	EPA 2004 NRWQC (chronic)				#	#	#	#	0.016	#	0.005 [8]	#	#	#	#	#	#	#	0.036	#	#	0.0052
	DEQ 2004 AWQC (chronic)				#	#	#	#	0.049 [6]	#	0.035	#	0.00012 [6]	#	#	#	#	#	0.033	#	#	0.0052
	Oak Ridge National Laboratory (Tier II SCV) [2]				#	#	0.12	#	#	#	#	#	0.0004	#	#	#	#	#	#	#	#	#
WS-12-161	MFA	WS-12-161	26-Apr-04	145-160	20.2		1.27		U						U		U		0.027		0.012	
		WS-12-161	17-Nov-04		28.5		2.04		0.005 U						0.029		0.01 U		0.01		0.01 U	
WS-13-69	MFA	WS-13-69	28-Apr-04	52.6-67.6	40.1		6.93		0.013						U		U		0.012		0.446	
		WS-13-69	18-Nov-04		49.3		9.1		0.005 U						0.005		0.01 U		0.012		0.483	
WS-13-105	MFA	WS-13-105	28-Apr-04	89-104	19.6		1.94		U						U		U		0.025		0.016	
		WS-13-105-DUP	28-Apr-04		19.8		1.95		U						U		U		0.028		U	
		WS-13-105	18-Nov-04		26.4		2.57		0.005 U						0.086		0.01 U		0.01 U		0.01 U	
		WS-13-105-DUP	18-Nov-04		27.5		2.61		0.005 U						0.079		0.01 U		0.01 U		0.01 U	
WS-14-125	MFA	WS-14-125	16-Nov-04	109-124	23.		1.46		0.005 U						0.011		0.01 U		0.015		0.254	
WS-14-161	MFA	WS-14-161	16-Nov-04	145-160	28.6		1.96		0.005 U						0.005 U		0.01 U		0.038		0.01 U	
WS-15-85	MFA	WS-15-85	18-Nov-04	70-85	32.4		7.82		0.005 U						0.25		0.019		0.028		0.023	
WS-15-140	MFA	WS-15-140	18-Nov-04	125-140	32.1		1.16		0.005 U						0.005 U		0.01 U		0.022		0.135	
WS-16-125	MFA	WS-16-125	17-Nov-04	109-124	32.1		4.48		0.005 U						0.005 U		0.01 U		0.029		0.01 U	
WS-16-161	MFA	WS-16-161	17-Nov-04	145-160	29.2		2.56		0.005 U						0.057		0.011		0.162		0.01 U	
WS-17-52	MFA	WS-17-52	16-Nov-04	41-51	31.4		4.78		0.245						0.329		0.02		0.049		0.149	
WS-17-94	MFA	WS-17-94	17-Nov-04	78-93	24.6		3.44		0.005 U						0.022		0.01		0.017		0.01 U	
RP-06-87	URS		14-Apr-00	81-86	177.		25.9		0.024	0.014							0.004	0.003	0.013	0.003		
RP-07-84	AMEC		13-Apr-04	79-84	127.		0.556		0.019	0.017							0.009		0.014	0.008		
RP-07-119	AMEC		13-Apr-04	114-119	57.5		0.255		0.008	0.008							0.003	0.003	0.01	0.01		

Table 9 - Summary of Analytical Results for Groundwater Samples: Monitoring Wells
Metals and Cyanide

Monitoring Well No.	Collected By	Sample Number	Sample Date	Screen Interval (feet bgs)	Analytical Results – mg/l (ppm)																	
					Dissolved Metals by EPA Methods 6010, 200.7 and/or 7000 Series																EPA Method 9010	
					Magnesium		Manganese		Nickel [5]		Selenium		Silver [5]		Titanium		Vanadium		Zinc [5]		Cyanide [9]	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Amenable
HUMAN HEALTH SCREENING LEVEL VALUES [8,10]																						
Fish Consumption																						
	EPA 2004 NRWQC (organism only)				#	#	0.1	#	4.6	#	4.2	#	#	#	#	#	#	#	26.	#	#	0.14
	Portland Harbor specific fish consumption rate				#	#	0.01	#	0.46	#	0.42	#	#	#	#	#	#	#	2.6	#	#	0.014
	DEQ 2004 AWQC (organism only)				#	#	0.1	#	4.6	#	4.2	#	#	#	#	#	#	#	26.	#	#	0.14
Drinking Water																						
	MCL				#	#	0.05 [7]	#	#	#	0.05	#	0.1 [7]	#	#	#	#	#	5 [7]	#	#	0.2
	Tap Water PRGs				#	#	0.88	#	0.73	#	0.18	#	0.18	#	#	#	#	#	11.	#	#	0.73
ECOLOGICAL RECEPTOR SCREENING LEVEL VALUES [8,10]																						
	EPA 2004 NRWQC (chronic)				#	#	#	#	0.016	#	0.005 [8]	#	#	#	#	#	#	#	0.036	#	#	0.0052
	DEQ 2004 AWQC (chronic)				#	#	#	#	0.049 [6]	#	0.035	#	0.00012 [6]	#	#	#	#	#	0.033	#	#	0.0052
	Oak Ridge National Laboratory (Tier II SCV) [2]				#	#	0.12	#	#	#	#	#	0.0004	#	#	#	#	#	#	#	#	#
Quality Control Samples																						
Water EB	HAI	011212-102	12-Dec-01		0.05		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U		0.005 U		0.01 U		0.02 U	0.02 U
		011008-103	8-Oct-01		0.078		0.005 U		0.003 U		0.005 U		0.002 U		0.001 U		0.005 U		0.005 U		0.02 U	0.02 U
		020402-102	2-Apr-02		0.05 U		0.006		0.005 U		0.005 U		0.005 U		0.01 U		0.005 U		0.036		0.04 U	
		020710-102	10-Jul-02		0.05 U		0.005 U		0.005 U		0.005 U		0.005 U		0.01 U		0.005 U		0.008		0.04 U	0.04 U

EPA = U.S. Environmental Protection Agency
# = Reference Level not established
AWQC = Ambient Water Quality Criteria
bgs = below ground surface
DEQ = Oregon Department of Environmental Quality
EB = equipment blank

J = Estimated Concentration
MCL = Maximum Contaminant Level
mg/l = milligrams/liter
ND = not detected above detection limit indicated
NRWQC = National Recommended Water Quality Criteria
ppb = parts per billion

ppm = parts per million
PRG = Potential Remediation Goal
SCV = Secondary Chronic Value
U = not detected above detection limit indicated
ug/l = micrograms per liter

1 = Screening Level Values for Soil/Stormwater Sediment, Stormwater and Surface water, *Portland Harbor Joint Source Control Strategy*, DEQ, December 2005.
2 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved) as potential ARARs under CERCLA. The final determination will be made in the EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be evaluated and prioritized on a case by case basis.
3 = Values were taken from Table 33c (OAR 340-41), which are Water Quality Guidance Values, not criteria, that can be used in application of Oregon's Narrative Toxics Criteria to waters of the state in order to protect aquatic life
4 = Value for Arsenic V.
5 = This is a hardness dependent metal. All values were calculated based on 25 mg/l of $CaCO_3$.
6 = These values were taken from OAR 340-41 Table 20 because they will remain the enforceable values for these particular analytes.
7 = National Secondary Drinking Water Standards.
8 = This metal is listed as the total recoverable metal in the water column.
9 = Cyanide value is based on a free cyanide value per DEQ OAR 340-41 Table 33, and EPA values are based on total Cyanide.
10 = Tier II SCV values were taken from Suter II, G.W. and Tasco, C.L., 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision. ORNL publication ES/ER/TM-96/R2.

TABLE 10 – Summary of Analytical Results for Soil Samples: TPH, BTEX, Total PAHs, TOC, and Cyanide

Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth	Analytical Results in mg/kg (ppm)																
					Field Observation					Northwest Method					EPA Method	EPA Method 8260				EPA Method	EPA Method
										HCID			TPH-Dx		8270 SIM or C	Volatile Aromatics				415.1	336.
				(feet bgs)	Odor	Sheen	Lamp Black	Oil	Tar	Gasoline	Diesel	Oil	Diesel	Oil	Total PAHs	Benzene	Toluene	Ethyl-benzene	Xylenes	TOC (%)	Total Cyanide
Soil Boring Samples																					
P-1	HAI	5237-010817-139	17-Aug-01	17.0	X								47.8	149.							
		5237-010817-142	17-Aug-01	30.0	X	X			X	24,100. U	Detect	120,000. U	12,000.	13,300.	35,432.	8.63	2.04	15.7	23.88		9,150.
		5237-010817-144	17-Aug-01	39.0									27.8 U	101.							
P-2	HAI	5237-010814-113	14-Aug-01	14.5						22.7 U	Detect	114. U	77.3	56.8 U							
		5237-010814-115	14-Aug-01	22.5	X					23.3 U	Detect	Detect	365.	805.	29.1	0.005 U	0.005 U	0.005 U	0.01 U		11,500. J
		5237-010814-118	14-Aug-01	32.0	X	X				24.7 U	Detect	Detect	414.	309. U							
P-3	HAI	5237-010820-152	20-Aug-01	6.5									22. U	100.							0.02 U
		5237-010820-155	20-Aug-01	17.0	X	X				2,150. U	Detect	10,800. U	1,120.	613.	7,308.1	0.5 U	0.5 U	3.36	6.68	4.13	13,900.
		5237-010820-159	20-Aug-01	35.5									29. U	106.							
P-4	HAI	5237-010810-79	10-Aug-01	10.0									37.4	210.							
		5237-010810-80	10-Aug-01	17.5	X	X				217. U	Detect	1,090. U	178.	135.	431.3 J	0.02 U	0.02 U	0.2	0.4	0.89	6,430.
		5237-010810-84	10-Aug-01	35.0									27.8 U	69.4 U							
P-5	HAI	5237-010813-91	13-Aug-01	6.5									21.7 U	54.3 U							
		5237-010813-92	13-Aug-01	9.5	X	X		X		2,220. U	Detect	11,100. U	14,000.	6,000.	5,699.4	0.1 U	0.15	1.38	3.67	5.51	8,780.
		5237-010813-93	13-Aug-01	15.0									21.7 U	54.3 U							
		5237-010813-98	13-Aug-01	32.5									26. U	64.9 U							
P-6	HAI	5237-010802-04	2-Aug-01	10.0	X					22.5 U	56.2 U	Detect	108.	157.	50.					0.9	1,000.
		5237-010802-07	2-Aug-01	23.0									24.1 U	60.2 U							
P-7	HAI	5237-010808-64	8-Aug-01	22.5	X	X		X		30.3 UJ	Detect J	Detect J	5,950. J	5,470. J	16.4 J	0.005 U	0.005 U	0.005 U	0.01 U	7.05 J	0.02 U
(duplicate)		5237-010808-65	8-Aug-01	22.5	X	X		X					1,960. J	1,770. J	3.4 J	0.005 U	0.005 U	0.005 U	0.01 U	1.81 J	0.02 U
P-8	HAI	5237-010806-31	6-Aug-01	2.0	X					22. UJ	54.9 UJ	110. UJ								8.92	15,000.
		5237-010806-37	6-Aug-01	30.0	X					27. U	67.6 U	135. U									
P-9	HAI	5237-010807-50	7-Aug-01	21.5		X				27. U	67.6 U	135. U								1.05	600.
P-10	HAI	5237-010803-23	3-Aug-01	26.0						27. U	135. U	Detect	27. U	67.6 U	0.1	0.005 U	0.005 U	0.005 U	0.01 U	2.6	0.02 U
		5237-010803-24	3-Aug-01	29.5									25. U	62.5 U							
GP02-01	LTI	GP02-01	19-Mar-02	4.0												0.005 U	0.005 U	0.005			
			19-Mar-02	12.5											41.42	0.1 U	0.1 U	0.1 U			0.34
			19-Mar-02	23.5					X						1,198.	43.	54.	62.			16.4

TABLE 10 – Summary of Analytical Results for Soil Samples: TPH, BTEX, Total PAHs, TOC, and Cyanide

Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth	Analytical Results in mg/kg (ppm)																
					Field Observation					Northwest Method					EPA Method	EPA Method 8260				EPA Method	EPA Method
										HCID			TPH-Dx		8270 SIM or C	Volatile Aromatics				415.1	336.
				(feet bgs)	Odor	Sheen	Lamp Black	Oil	Tar	Gasoline	Diesel	Oil	Diesel	Oil	Total PAHs	Benzene	Toluene	Ethyl-benzene	Xylenes	TOC (%)	Total Cyanide
Soil Boring Samples																					
GP02-02	LTI	GP-2-02	20-Mar-02	3.0											1.02	0.01 U	0.01 U	0.01 U			0.1
			20-Mar-02	19.0											4.04	0.02 U	0.02 U	0.02 U			0.34
			20-Mar-02	22.0	X	X									3.95	0.005 U	0.005	0.005 U			
			20-Mar-02	24.0											109.41	1.4	4.5	4.3			1.84
GP02-03	LTI	GP02-03	21-Mar-02	4.0											4.05						
			21-Mar-02	23.0					?						8.94	0.005 U	0.005	0.005 U			7.03
			21-Mar-02	25.0					?						38.25	0.005 U	0.005	0.005 U			5.62
GP4	MFA	GP4-S-7.5	26-Sep-02	7.5			X								1,838.7	15. U	15. U	15. U	15. U		
		GP4-S-19.0	26-Sep-02	19.0											1.93	0.005 U	0.005	0.005 U	0.005		
		GP4-S-26.0	26-Sep-02	26.0											0.2						
GP5	MFA	GP5-S-26.0	7-Oct-02	13.0											18.16						
		GP5-S-21.0	7-Oct-02	21.0											119.92						
		GP5-S-26.0	7-Oct-02	26.0											0.31	0.007 U	0.007	0.007 U	0.007		
GP6	MFA	GP6-S-23.0	30-Sep-02	15.0											3.2						
		GP6-S-23.0	30-Sep-02	23.0											1,650.5	0.071 U	0.071 U	0.15	0.071		
		GP6-S-30.0	30-Sep-02	30.0											0.12	0.007 U	0.007	0.007 U	0.007		
GP7	MFA	GP7-S-30.0	2-Oct-02	9.0											18.51						
		GP7-S-15.5	2-Oct-02	15.5											350.26						
		GP7-S-30.0	2-Oct-02	30.0											319.4	0.027 U	0.027 U	0.027 U	0.027		
GP8	MFA	GP8-S-22.0	16-Jul-03	22.0												0.01 U	0.01 U	0.01 U	0.02 U		
		GP8-S-25.0	16-Jul-03	25.0												0.443	0.01 U	0.051	0.02 U		
GP9	MFA	GP9-S-20.0	17-Jul-03	20.0												0.038	0.01 U	0.03	0.015		
		GP9-S-25.0	17-Jul-03	25.0												0.7	0.026	0.289	0.621		
		GP9-S-25.0 (dup)	17-Jul-03	25.0												0.736	0.017	0.331	0.401		
GP10	MFA	GP10-S-20.0	16-Jul-03	20.0	X			X							49.1	218.	223.	162.	358.		
GP11	MFA	GP11-S-15.0	14-Jul-03	15.0	X										722.9						
		GP11-S-17.0	14-Jul-03	17.0	X											7.2	0.155	32.8	19.77		
		GP11-S-27.0	14-Jul-03	27.0												0.01 U	0.01 U	0.01 U	0.02 U		

TABLE 10 – Summary of Analytical Results for Soil Samples: TPH, BTEX, Total PAHs, TOC, and Cyanide

Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth	Analytical Results in mg/kg (ppm)																
					Field Observation					Northwest Method					EPA Method	EPA Method 8260				EPA Method	EPA Method
										HCID			TPH-Dx		8270 SIM or C	Volatile Aromatics				415.1	336.
				(feet bgs)	Odor	Sheen	Lamp Black	Oil	Tar	Gasoline	Diesel	Oil	Diesel	Oil	Total PAHs	Benzene	Toluene	Ethyl-benzene	Xylenes	TOC (%)	Total Cyanide
Soil Boring Samples																					
GP12	MFA	GP12-S-12.5	29-Jun-04	12.0	X											0.01 U	0.01 U	0.01 U	0.02 U		
		GP12-S-15.5	29-Jun-04	15.5												0.01 U	0.01 U	0.01 U	0.02 U		
		GP12-S-18.0	29-Jun-04	18.0	X				X							28.	26.7	21.	22.3		
GP13	MFA	GP13-S-12.5	29-Jun-04	12.5	X											0.01 U	0.01 U	0.01 U	0.02 U		
		GP13-S-17.0	29-Jun-04	17.0	X	X										0.01 U	0.01 U	0.01 U	0.02 U		
		GP13-S-19.0	29-Jun-04	19.0	X	X			X							0.721	0.454	0.291	0.157		
GP14	MFA	GP14-S-15.0	30-Jun-04	15.0												0.01 U	0.01 U	0.01 U	0.02 U		
		GP14-S-17.0	30-Jun-04	17.0												0.054	0.049	0.156	0.158		
GP15	MFA	GP15-S-13.0	29-Jun-04	13.0	X											0.01 U	0.01 U	0.01 U	0.02 U		
		GP15-S-16.0	29-Jun-04	16.0	X											0.01 U	0.01 U	0.01 U	0.02 U		
GP16	MFA	GP16-S-16.0	29-Jun-04	16.0		X			X							0.01 U	0.01 U	0.01 U	0.02 U		
		GP16-S-20.0	29-Jun-04	20.0												0.01 U	0.01 U	0.01 U	0.02 U		
		GP16-S-23.0	29-Jun-04	23.0	X	X										34.6	44.6	38.4	42.2		
GP17	MFA	GP17-S-11.0	29-Jun-04	11.0		X			X							19.	3.46	65.3	60.7		
		GP17-S-13.0	29-Jun-04	13.0	X	X										0.393	0.2	7.66	71.9		
GP18	MFA	GP18-S-12.5	30-Jun-04	12.5												72.8	61.3	124.	151.		
		GP18-S-16.0	30-Jun-04	16.0	X	X										0.014	0.01 U	0.103	0.091		
GP19	MFA	GP19-S-12.0	30-Jun-04	12.0	X											0.24	0.134	1.15	1.149		
		GP19-S-16.0	30-Jun-04	16.0	X											0.146	0.032	0.099	0.105		
GP20	MFA	GP20-S-18.0	19-Jul-04	18.0	X											0.01 U	0.01 U	0.01 U	0.02 U		
		GP20-S-30.0	19-Jul-04	30.0	X										0.2	0.01 U	0.01 U	0.01 U	0.02 U		
GP21	MFA	GP21-S-18.0	19-Jul-04	18.0	X	X			?							32.	3.51	28.7	33.1		
		GP21-S-30.0	19-Jul-04	30.0	X	X									171.	0.175	0.011	0.047	0.024		
GP22	MFA	GP22-S-19.0	19-Jul-04	19.0												0.01 U	0.01 U	0.063	0.021		
(duplicate)		GP22-S-DUP														0.1 U	0.01 U	0.083	0.026		
		GP22-S-30.0	19-Jul-04	30.0	X	X			?						7,920.1	53.6	1.56	49.8	37.2		
GP23	MFA	GP23-S-18.0	19-Jul-04	18.0												1.8	0.01 U	0.166	0.046		
		GP23-S-28.5	19-Jul-04	28.5											1,605.7	0.01 U	0.01 U	0.01 U	0.02 U		
GP24	MFA	GP24-S-18.0	19-Jul-04	18.0												0.01 U	0.01 U	0.01 U	0.02 U		
		GP24-S-26.0	19-Jul-04	26.0											1.7	1.28	0.01 U	0.01 U	0.02 U		

TABLE 10 – Summary of Analytical Results for Soil Samples: TPH, BTEX, Total PAHs, TOC, and Cyanide

Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth	Analytical Results in mg/kg (ppm)																
					Field Observation					Northwest Method					EPA Method	EPA Method 8260				EPA Method	EPA Method
										HCID			TPH-Dx		8270 SIM or C	Volatile Aromatics				415.1	336.
				(feet bgs)	Odor	Sheen	Lamp Black	Oil	Tar	Gasoline	Diesel	Oil	Diesel	Oil	Total PAHs	Benzene	Toluene	Ethyl-benzene	Xylenes	TOC (%)	Total Cyanide
Soil Boring Samples																					
WS-10	MFA	WS10-S-26.0	3-Sep-03	26.0		X		X								137.	7.62	161.	225.2		
		WS10-S-30.0	3-Sep-03	30.0												0.01 U	0.01 U	0.01 U	0.02 U		
WS-11	MFA	WS11-S-118.0	23-Sep-03	118.0		X		X								0.01 U	0.01 U	0.013 J	0.02 U		
		WS11-S-165.0	24-Sep-03	165.0												0.01 U	0.01 U	0.01 U	0.02 U		
WS-12	MFA	WS12-S-80.0	8-Sep-03	80.0												0.01 U	0.01 U	0.01 U	0.02 U		
		WS12-S-120.0	9-Sep-03	120.0												0.01 U	0.01 U	0.01 U	0.02 U		
		WS12-S-150.0	9-Sep-03	150.0												0.01 U	0.01 U	0.01 U	0.02 U		
WS-13	MFA	WS13-S-50.0	4-Oct-03	50.0												0.01 U	0.01 U	0.01 U	0.02 U		
		WS13-S-85.0	4-Oct-03	85.0												0.025	0.021	0.032	0.045		
		WS13-S-105.0	4-Oct-03	105.0												0.01 U	0.01 U	0.01 U	0.02 U		
WS-14	MFA	WS14-S-41.0	22-Jun-04	41.0	X											0.548	0.105	0.91	0.556		
		WS14-S-124.0	26-Jun-04	124.0	X	X										0.01 U	0.01 U	0.01 U	0.02 U		
		WS14-S-158.0	28-Jun-04	158.0												0.01 U	0.01 U	0.01 U	0.02 U		
WS-15	MFA	WS15-S-55.0	10-Jul-04	55.0	X	X										10.6	1.13	22.4	19.12		
		WS15-S-80.0	10-Jul-04	80.0												0.01 U	0.01 U	0.01 U	0.02 U		
		WS15-S-129.0	12-Jul-04	129.0												0.01 U	0.01 U	0.01 U	0.02 U		
WS-16	MFA	WS16-S-112.0	26-Jul-04	112.0												0.01 U	0.01 U	0.01 U	0.02 U		
WS-17	MFA	WS17-S-21.0	5-Aug-04	21.0	X	X										0.012	0.01 U	0.015	0.011		
		WS17-S-30.0	5-Aug-04	30.0	X	X										0.129	0.017	0.101	0.368		
		WS17-S-42.0	6-Aug-04	42.0	X	X										1.19	1.03	4.54	4.41		
		WS17-S-79.0	6-Aug-04	79.0												0.229	0.103	0.599	0.584		
		WS17-S-106.0	9-Aug-04	106.0												0.01 U	0.01 U	0.01 U	0.02 U		
RP-11	AMEC	128-01	17-Nov-05	7.5-8	X	X							23,000.			2.18 U	2.18 U	4. J	9.8 J		
		141-01	1-Dec-05	28-29																12,900.	
		140-01	1-Dec-05	154-155																5,720.	
		138-01	28-Nov-05	208-210																1,060.	
SIL-02	AMEC	121-01	15-Nov-05	216-218																638.	

TABLE 10 – Summary of Analytical Results for Soil Samples: TPH, BTEX, Total PAHs, TOC, and Cyanide

Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth	Analytical Results in mg/kg (ppm)																
					Field Observation					Northwest Method					EPA Method	EPA Method 8260				EPA Method	EPA Method
										HCID			TPH-Dx		8270 SIM or C	Volatile Aromatics				415.1	336.
				(feet bgs)	Odor	Sheen	Lamp Black	Oil	Tar	Gasoline	Diesel	Oil	Diesel	Oil	Total PAHs	Benzene	Toluene	Ethyl-benzene	Xylenes	TOC (%)	Total Cyanide
Surface Samples (Above Top of Willamette River Embankment)																					
S-1	HAI	5237-010821-167	21-Aug-01	0.2						20.8 U	52.1 U	104. U	20.8 U	52.1 U	2.14 J						0.02 U
S-2	HAI	5237-010821-168	21-Aug-01	0.2						20.2 U	50.5 U	101. U			0.71						0.02 U
S-3	HAI	5237-010821-169	21-Aug-01	0.2						20.8 U	52.1 U	104. U			1.8						0.02 U
S-4	HAI	5237-010821-170	21-Aug-01	0.2						20.4 U	51. U	102. U			ND						0.02 U
(duplicate)		5237-010821-171	21-Aug-01	0.2											ND						0.02 U
S-5	HAI	5237-010821-172	21-Aug-01	0.2						20.4 U	51. U	102. U			ND						0.02 U
Outfall / Embankment Sample																					
Fab 2 OF	HAI	5237-010919-173	19-Sep-01	0.2						51.9 U	130. U	Detect	3,720.	4,700.	91.2	0.005 U	0.005 U	0.005 U	0.01 U	15.7	13,900.
Stormwater Catch Basin Sample																					
CDA / Chrome Shed Catch Basin	Wacker	CLI Composite 1-2	19-Jun-01	-									2,200. UJ	9,000. J	2.6	1.74 U	10.	1.74 U	1.74 U	1.3 J	0.4 J

Note:
bgs = below ground surface
EPA = U.S. Environmental Protection Agency
HAI = Hahn and Associates, Inc.
HCID = hydrocarbon identification
J = estimated concentration
LTI = Limno-Tech, Inc.
MFA = Maul Foster and Alongi, Inc.
mg/kg = milligrams per kilogram
PAHs = polynuclear aromatic hydrocarbons
ppm = parts per million
TOC = total organic carbon
TPH = total petroleum hydrocarbons
U = not detected above detection limit indicated

TABLE 11 – Summary of Analytical Results for Soil Samples
Detected Volatile Organic Compounds by EPA Method 8260

Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth	Analytical Results - mg/ kg (ppm)													
					Aromatic VOCs (AVOCs)										Halogenated VOCs (HVOCs)			Other VOCs
				(feet bgs)	Benzene	n-Butyl-benzene	sec-Butyl-benzene	Ethyl-benzene	n-Propyl-benzene	Toluene	1,2,4-TMB	1,3,5-TMB	Naphthalene	Total Xylenes	cis-1,2-DCE	TCE	Vinyl Chloride	
Soil Boring Samples																		
P-1	HAI	5237-010817-142	17-Aug-01	30.0	8.63	1. U	1.92	15.7	1. U	2.04	16.	5.61	60,900.	23.88	1. U	1. U	2. U	IPB=2.11
P-2	HAI	5237-010814-115	14-Aug-01	22.5	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.005 U	0.005 U	0.01 U	ND
P-3	HAI	5237-010820-155	20-Aug-01	17.0	0.5 U	0.57	0.5 U	3.36	0.5 U	0.5 U	15.6	4.59	1,100.	6.68	0. U	0.5 U	0.6 U	4-IPT=1.69 IPB=1.18
P-4	HAI	5237-010810-80	10-Aug-01	17.5	0.02 U	0.02 U	0.02 U	0.2	0.04	0.02 U	0.664	0.181	64.2	0.4	0.02 U	0.02 U	0.04 U	4-IPT=0.068
P-5	HAI	5237-010813-92	13-Aug-01	9.5	0.1 U	0.243	0.1 U	1.38	0.225	0.15	7.12	2.05	684.	3.67	0.1 U	0.1 U	0.12 U	4-IPT=0.919
P-7	HAI	5237-010808-64	8-Aug-01	22.5	0.005 U	0.011	0.01	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.011	0.005 U	0.005 U	0.005 U	0.01 U	Acetone=0.128
(duplicate)	HAI	5237-010808-65	8-Aug-01	22.5	0.005 U	0.005 U	0.006	0.005 U	0.007	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.005 U	0.005 U	0.01 U	Acetone=0.125
P-10	HAI	5237-010803-23	3-Aug-01	26.0	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.005 U	0.005 U	0.01 U	ND
GP02-01	LTI	GP02-01	19-Mar-02	4.0	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U		0.008	0.005 U		
			19-Mar-02	12.5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.3		0.1 U	0.1 U		
			19-Mar-02	23.5	43.	1.4	1. U	62.	2.9	54.	43.	14.	3,100.		1. U	1. U		2-CT=2.9 4-IPT=3.5
GP02-02	LTI	GP-02-02	20-Mar-02	3.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.064		0.042	0.01 U		
			20-Mar-02	19.0	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.43		0.064	2.		
			20-Mar-02	22.0	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005	0.005 U	0.005 U	0.099		0.041	0.016		
			20-Mar-02	24.0	1.4	1. U	1. U	4.3	1. U	4.5	6.4	1.8	470.		1. U	1. U		
GP02-03	LTI	GP02-03	21-Mar-02	23.0	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005	0.005 U	0.005 U	0.017		0.005 U	0.005 U		
			21-Mar-02	25.0	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005	0.005 U	0.005 U	0.045		0.005 U	0.005 U		
GP4	MFA	GP4-S-7.5	26-Sep-02	7.5	15. U	59. U	59. U	15. U	59. U	15. U	59. U	59. U	1,500. J	15. U	15. U	1.2 U		
		GP4-S-19.0	26-Sep-02	19.0	0.005 U	0.022 U	0.022 U	0.005 U	0.022 U	0.005	0.022 U	0.022 U	0.022 U	0.005	0.005 U	0.002 U		Acetone=0.064
GP5	MFA	GP5-S-26.0	7-Oct-02	26.0	0.007 U	0.029 U	0.029 U	0.007 U	0.029 U	0.007	0.029 U	0.029 U	0.029 U	0.007	0.007 U	0.003 U		Acetone=0.12
GP6	MFA	GP6-S-23.0	30-Sep-02	23.0	0.071 U	0.87 U	0.4	0.15	0.3	0.071 U	2.4	0.61	3.4	0.071	0.071 U	0.029 U		4-IPT=0.95
		GP6-S-30.0	30-Sep-02	30.0	0.007 U	0.03 U	0.03 U	0.007 U	0.03 U	0.007	0.03 U	0.03 U	0.03 U	0.007	0.007 U	0.003 U		Acetone=0.098
GP7	MFA	GP7-S-30.0	2-Oct-02	30.0	0.027 U	0.11 U	0.11 U	0.027 U	0.11 U	0.027 U	0.11 U	0.11 U	0.18	0.027	0.027 U	0.011 U		
GP8	MFA	GP8-S-22.0	16-Jul-03	22.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	4.58	0.02 U	0.01 U	0.01 U	0.01 U	
		GP8-S-25.0	16-Jul-03	25.0	0.443	0.01 U	0.01 U	0.0511	0.01 U	0.01 U	0.01 U	0.01 U	3.89	0.02 U	0.675	0.01 U	0.105	
GP9	MFA	GP9-S-20.0	17-Jul-03	20.0	0.0381	0.01 U	0.01 U	0.0295	0.01 U	0.01 U	0.0379	0.016	1.61	0.015	0.0713	0.0375	0.01 U	
		GP9-S-25.0	17-Jul-03	25.0	0.7	0.01 U	0.01 U	0.289	0.0157	0.0259	0.231	0.0642	11.8	0.621	0.855	0.211	0.01 U	
		GP9-S-25.0 (dup)	17-Jul-03	25.0	0.736	0.0012	0.0053	0.331	0.01 U	0.0173	0.15	0.042	7.41	0.401	0.971	0.859	0.01 U	
GP10	MFA	GP10-S-20	16-Jul-03	20.0	218.	12.3	50. U	162.	14.1	223.	178.	56.7	6,450.	358.	208.	557.	50. U	
GP11	MFA	GP11-S-17	14-Jul-03	17.0	7.2	0.0194	0.104	32.8	0.0376	0.155	11.4	0.18	3,270.	19.77	0.01 U	0.01 U	0.01 U	
		GP11-S-27	14-Jul-03	27.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0366	0.02 U	0.01 U	0.01 U	0.01 U	

TABLE 11 – Summary of Analytical Results for Soil Samples
Detected Volatile Organic Compounds by EPA Method 8260

Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth	Analytical Results - mg/ kg (ppm)													
					Aromatic VOCs (AVOCs)										Halogenated VOCs (HVOCs)			Other VOCs
				(feet bgs)	Benzene	n-Butyl-benzene	sec-Butyl-benzene	Ethyl-benzene	n-Propyl-benzene	Toluene	1,2,4-TMB	1,3,5-TMB	Naphthalene	Total Xylenes	cis-1,2-DCE	TCE	Vinyl Chloride	
Soil Boring Samples																		
GP12	MFA	GP12-S-12.5	29-Jun-04	12.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1.01	0.02 U	0.062	0.01 U		
		GP12-S-15.5	29-Jun-04	15.5	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.052	0.02 U	0.01 U	0.01 U		
		GP12-S-18.0	29-Jun-04	18.0	28.	1. U	1. U	21.	1. U	26.7	19.	4.46	3,090.	22.3	0.01 U	0.01 U		Acetone=0.492 IPB=0.55 Styrene=2.22
GP13	MFA	GP13-S-12.5	29-Jun-04	12.5	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.055	0.02 U	0.01 U	0.024		
		GP13-S-17.0	29-Jun-04	17.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	4.57	0.02 U	0.01 U	0.01 U		
		GP13-S-19.0	29-Jun-04	19.0	0.721	0.1 U	0.1 U	0.291	0.1 U	0.454	0.1 U	0.1 U	2.9	0.157	0.01 U	0.01 U		IPB=0.065 MEK=0.070
GP14	MFA	GP14-S-15.0	30-Jun-04	15.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U		Acetone=0.296 MEK=0.087
		GP14-S-17.0	30-Jun-04	17.0	0.054	0.02 U	0.02 U	0.156	0.02 U	0.049	0.02 U	0.02 U	0.349	0.158	0.02 U	0.02 U		
GP15	MFA	GP15-S-13.0	29-Jun-04	13.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	2.92	0.02 U	0.01 U	0.01 U		
		GP15-S-16.0	29-Jun-04	16.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.31	0.02 U	0.01 U	0.01 U		
GP16	MFA	GP16-S-16.0	29-Jun-04	16.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.255	0.02 U	0.01 U	0.01 U		
		GP16-S-20.0	29-Jun-04	20.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.016	0.02 U	0.01 U	0.01 U		
		GP16-S-23.0	29-Jun-04	23.0	34.6	0.595	0.168	38.4	1.4	44.6	30.4	9.54	41,700.	42.2	0.1 U	0.1 U		IPB=0.9 4-IPT=0.897 Styrene=4.64
GP17	MFA	GP17-S-11.0	29-Jun-04	11.0	19.	1.35	1. U	65.3	3.21	3.46	43.3	13.3	3,180.	60.7	1. U	1. U		IPB=6.52 4-IPT=4.68
		GP17-S-13.0	29-Jun-04	13.0	0.393	0.299	0.1 U	7.66	0.82	0.2	6.57	1.86	703.	71.9	0.01 U	0.01 U		IPB=1.29 4-IPT=1.02
GP18	MFA	GP18-S-12.5	30-Jun-04	12.5	72.8	2.	1. U	124.	4.06	61.3	112.	20.7	9,180.	151.	0.1 U	0.1 U		IPB=7.63 4-IPT=6.39 Styrene=1.39
		GP18-S-16.0	30-Jun-04	16.0	0.014	0.01 U	0.01 U	0.103	0.01 U	0.01 U	0.14	0.034	32.	0.091	0.01 U	0.01 U		IPB=0.016 4-IPT=0.012
GP19	MFA	GP19-S-12.0	30-Jun-04	12.0	0.24	0.1 U	0.1 U	1.15	0.113	0.134	1.37	0.385	996.	1.149	0.01 U	0.01 U		IPB=0.11 4-IPT=0.11 Styrene=0.14
		GP19-S-16.0	30-Jun-04	16.0	0.146	0.01 U	0.01 U	0.099	0.01 U	0.032	0.079	0.028	11.5	0.105	0.01 U	0.01 U		

TABLE 11 – Summary of Analytical Results for Soil Samples
Detected Volatile Organic Compounds by EPA Method 8260

Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth	Analytical Results - mg/ kg (ppm)													
					Aromatic VOCs (AVOCs)										Halogenated VOCs (HVOCs)			Other VOCs
				(feet bgs)	Benzene	n-Butyl-benzene	sec-Butyl-benzene	Ethyl-benzene	n-Propyl-benzene	Toluene	1,2,4-TMB	1,3,5-TMB	Naphthalene	Total Xylenes	cis-1,2-DCE	TCE	Vinyl Chloride	
Soil Boring Samples																		
GP20	MFA	GP20-S-18.0	19-Jul-04	18.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.03	0.02 U	0.01 U	0.01 U		
		GP20-S-30.0	19-Jul-04	30.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.036	0.02 U	0.01 U	0.01 U		Acetone=0.159
GP21	MFA	GP21-S-18.0	19-Jul-04	18.0	32.	0.441	0.1 U	28.7	1.37	3.51	16.6	6.12	1,090.	33.1	0.01 U	0.01 U		IPB=3.1 4-IPT=1.82 Styrene=0.053
		GP21-S-30.0	19-Jul-04	30.0	0.175	0.01 U	0.01 U	0.047	0.01 U	0.011	0.033	0.01 U	5.36	0.024	0.01 U	0.01 U		Acetone=0.150
GP22	MFA	GP22-S-19.0	19-Jul-04	19.0	0.01 U	0.01 U	0.01 U	0.063	0.011	0.01 U	0.062	0.027	3.35	0.021	0.01 U	0.01 U		Acetone=0.213
(duplicate)		GP22-S-DUP	19-Jul-04	19.0	0.01 U	0.01 U	0.01 U	0.083	0.013	0.01 U	0.081	0.032	2.16	0.026	0.01 U	0.01 U		Acetone=0.207
		GP22-S-30.0	19-Jul-04	30.0	53.6	0.912	0.1 U	49.8	1.7	1.56	26.	8.45	2,260.	37.2	0.01 U	0.01 U		Acetone=0.132 IPB=3.99 4-IPT=3.19
GP23	MFA	GP23-S-18.0	19-Jul-04	18.0	1.8	0.01 U	0.01 U	0.166	0.029	0.01 U	0.064	0.019	3.3	0.046	0.01 U	0.01 U		IPB=0.051
		GP23-S-28.5	19-Jul-04	28.5	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.043	0.02 U	0.01 U	0.01 U		
GP24	MFA	GP24-S-18.0	19-Jul-04	18.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.03	0.02 U	0.01 U	0.01 U		
		GP24-S-26.0	19-Jul-04	26.0	1.28	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.7	0.02 U	0.01 U	0.01 U		
WS10	MFA	WS10-S-26.0	3-Sep-03	26.0	137.	4.76	1.07	161.	5.54	7.62	93.8	12.7	3,540.	225.2	5. U	5. U	5. U	
		WS10-S-30.0	3-Sep-03	30.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U	
WS11	MFA	WS11-S-118	23-Sep-03	118.0	0.01 U	0.01 U	0.01 U	0.013 J	0.01 U	0.01 U	0.0132 J	0.01 U	3.33 J	0.02 U	0.01 U	0.01 U	0.01 U	
		WS11-S-165	24-Sep-03	165.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U	
WS12	MFA	WS12-S-80	8-Sep-03	80.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U	
		WS12-S-120	9-Sep-03	120.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U	
		WS12-S-150	9-Sep-03	150.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U	
WS13	MFA	WS13-S-50	4-Oct-03	50.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.198	0.02 U	0.108	0.188	0.01 U	
		WS13-S-85	4-Oct-03	85.0	0.0253	0.01 U	0.01 U	0.0316	0.01 U	0.0207	0.01 U	0.01 U	0.221	0.0448	0.105	127.	0.01 U	
		WS13-S-105	5-Oct-03	105.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U	0.01 U	

TABLE 11 – Summary of Analytical Results for Soil Samples
Detected Volatile Organic Compounds by EPA Method 8260

Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth (feet bgs)	Analytical Results - mg/ kg (ppm)													
					Aromatic VOCs (AVOCs)										Halogenated VOCs (HVOCs)			Other VOCs
					Benzene	n-Butyl-benzene	sec-Butyl-benzene	Ethyl-benzene	n-Propyl-benzene	Toluene	1,2,4-TMB	1,3,5-TMB	Naphthalene	Total Xylenes	cis-1,2-DCE	TCE	Vinyl Chloride	
Soil Boring Samples																		
WS-14	MFA	WS14-S-41.0	22-Jun-04	41.0	0.548	0.01 U	0.01 U	0.91	0.014	0.105	0.762	0.104	62.8	0.556	0.01 U	0.01 U		IPB=0.027 4-IPT=0.017
		WS14-S-124.0	26-Jun-04	124.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.021	0.013	0.0141	0.02 U	0.01 U	0.01 U		
		WS14-S-158.0	28-Jun-04	158.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0253	0.02 U	0.01 U	0.01 U		
WS-15	MFA	WS15-S-55.0	10-Jul-04	55.0	10.6	0.447	0.1 U	22.4	1.23	1.13	48.2	5.53	4,410.	19.12	24.6	11.6		1,1,2-TCA=0.617 1,1-DCE=0.124 2-Hexanone=0.05 IPB=1.94 4-IPT=1.91 Styrene=0.015
		WS15-S-80.0	10-Jul-04	80.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.242	0.02 U	0.486	3.83		
		WS15-S-129.0	12-Jul-04	129.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0134	0.02 U	0.01 U	0.01 U		
WS-16	MFA	WS16-S-112.0	26-Jul-04	112.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0245	0.02 U	0.01 U	0.01 U		Acetone=0.104
WS-17	MFA	WS17-S-21.0	5-Aug-04	21.0	0.012	0.01 U	0.01 U	0.015	0.01 U	0.01 U	0.0218	0.01 U	2.37	0.011	0.01 U	0.01 U		IPB=0.012
		WS17-S-30.0	5-Aug-04	30.0	0.129	0.0138	0.01 U	0.101	0.0266	0.017	0.145	0.123	5.14	0.368	0.01 U	0.01 U		IPB=0.047 4-IPT=0.032
		WS17-S-42.0	6-Aug-04	42.0	1.19	0.1 U	0.1 U	4.54	0.184	1.03	3.17	0.835	304.	4.41	0.01 U	0.01 U		Acetone=0.228 IPB=0.36 4-IPT=0.18 Styrene=0.021
		WS17-S-79.0	6-Aug-04	79.0	0.229	0.0126	0.01 U	0.599	0.0404	0.103	0.419	0.121	11.2	0.584	0.01 U	0.01 U		IPB=0.048 4-IPT=0.021
		WS17-S-106.0	9-Aug-04	106.0	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 U	0.01 U	0.01 U		
RP-11	AMEC	128-01	17-Nov-05	7.5-8.0	2.18 U	3.51 U	6.05 U	4. J	2.18 U	2.18 U	25. U	8.2 U	3.87 J	11.9 J	2.06 U	2.66 U	2.18 U	4-Isopropyltoulene=2.9 J
Outfall / Embankment Sample																		
Fab 2 OF	HAI	5237-010919-173	19-Sep-01	0.2	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.029	0.01 U	0.005 U	0.005 U	0.01 U	ND
Stormwater Catch Basin Sample																		
CDA / Chrome Shed Catch Basin	Wacker	CLI Composite 1-2	19-Jun-01	NA	1.74 U	1.74 U	1.74 U	1.74 U	1.74 U	10.	1.74 U	1.74 U	1.74 U	1.74 U	1.74 U	1.74 U	1.74 U	ND

Note:
bgs = below ground surface
CT = chlorotoluene
DCE = dichloroethene
EPA = U.S. Environmental Protection Agency
HAI = Hahn and Associates, Inc.
IPB = isopropylbenzene
IPT = isopropyltoluene
J = estimated concentration
LTI = Limno-Tech, Inc.
MFA = Maul Foster & Alongi, Inc.
MEK = methyl ethyl ketone
mg/kg = milligrams per kilogram
ND = not detected
ppm = parts per million
TCA = trichloroethane
TCE = trichloroethene
TMB = trimethylbenzene
U = not detected above detection limit indicated
VOCs = volatile organic compounds

TABLE 12 – Summary of Analytical Results for Soil Samples
Polynuclear Aromatic Hydrocarbons

PAHs by EPA Method 8270SIM or 8270C					Analytical Results in mg/kg (ppm)																
					Carcinogenic PAHs							Non-carcinogenic PAHs									
Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth (feet bgs)	Benz (a) anthracene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Chrysene	Dibenzo (ah) anthracene	Indeno (1,2,3-cd) pyrene	Acenaphthene	Acenaph-thylene	Anthracene	Benzo (ghi) perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	Total PAHs
Push Probe Boring Samples																					
P-1	HAI	5237-010817-142	17-Aug-01	30.0	817.	638.	743.	1,280.	940.	143.	623.	2,770.	151.	997.	1,120.	3,020.	1,240.	10,900.	6,650.	3,400.	35,432.
P-2	HAI	5237-010814-115	14-Aug-01	22.5	1.	0.948	0.833	1.3	1.5	0.335 U	0.617	5.2	0.335 U	1.7	1.1	4.	1.9	0.335 U	4.4	4.6	29.1
P-3	HAI	5237-010820-155	20-Aug-01	17.0	220.	163.	141.	204.	247.	25.4	115.	523.	48.7	208.	201.	713.	282.	1,790.	1,600.	827.	7,308.1
P-4	HAI	5237-010810-80	10-Aug-01	17.5	18.3 J	10. J	8.2 J	18.1 J	21.3 J	2.3 J	7.6 J	35.1 J	4. J	25.1 J	13.1 J	56.5 J	23.9 J	41.1 J	83.5 J	63.2 J	431.3
P-5	HAI	5237-010813-92	13-Aug-01	9.5	207.	103.	103.	205.	245.	24.2	83.2	463.	36.	322.	149.	655.	307.	905.	1,120.	772.	5,699.4
P-6	HAI	5237-010802-04	2-Aug-01	10.0	3.	5.	3.8	8.8	4.2	0.67 U	3.3	0.67 U	1.5	0.79	5.2	5.8	0.67 U	0.67 U	1.5	7.1	50.
P-7	HAI	5237-010808-64	8-Aug-01	22.5	0.67 U	0.67 U	0.67 U	0.67 U	1.9	0.67 U	0.67 U	1.4	0.67 U	0.67 U	0.67 U	0.687	5.6 J	0.67 U	5.8 J	1.	16.4
(duplicate)		5237-010808-65	8-Aug-01	22.5	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	1.6 J	0.67 U	1.8 J	0.67 U	3.4
P-10	HAI	5237-010803-23	3-Aug-01	26.0	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.076	0.1
GP02-01	LTI	GP02-01	19-Mar-02	12.5	2.6	1.8	1.7	3.	3.5	0.34	1.6	1.	0.92	2.1	2.3	5.5	1.4	0.36	6.2	7.1	41.4
			19-Mar-02	23.5	26.	13.	18.	26.	40.	5.	13.	30.	45.	50.	18.	100.	44.	430.	230.	110.	1,198.
GP02-02	LTI	GP-02-02	20-Mar-02	3.0	0.08	0.055	0.06	0.075	0.11	0.05 U	0.055	0.05 U	0.05 U	0.05 U	0.065	0.16	0.05 U	0.11	0.095	0.15	1.
			20-Mar-02	19.0	0.28	0.24	0.27	0.44	0.4	0.07	0.28	0.05 U	0.05	0.075	0.4	0.68	0.05 U	0.05 U	0.16	0.69	4.
			20-Mar-02	22.0	0.22	0.14	0.19	0.28	0.31	0.05 U	0.17	0.05 U	0.075	0.18	0.24	0.66	0.065	0.055	0.74	0.62	3.9
			20-Mar-02	24.0	3.5	1.8	1.9	3.3	4.4	0.41	1.7	3.	3.8	4.4	2.4	8.8	4.	34.	21.	11.	109.4
GP02-03	LTI	GP02-03	21-Mar-02	4.0	0.28	0.26	0.26	0.44	0.48	0.075	0.3	0.05 U	0.065	0.11	0.44	0.64	0.05 U	0.05 U	0.07	0.63	4.1
			21-Mar-02	23.0	0.53	0.5	0.44	0.75	0.86	0.12	0.5	0.16	0.12	0.26	0.72	1.3	0.07	0.07	0.64	1.9	8.9
			21-Mar-02	25.0	3.1	2.4	2.4	4.1	4.4	0.65	2.6	0.38	0.22	0.7	3.5	4.4	0.32	0.38	3.3	5.4	38.3
GP4	MFA	GP4-S-7.5	26-Sep-02	7.5	72.	45.	45.	78.	79.	5.7	48.	120.	12.	110.	47.	250.	77.	140.	420.	290.	1,838.7
		GP4-S-19.0	26-Sep-02	19.0	0.12	0.12	0.099	0.17	0.15	0.016	0.14	0.006	0.026	0.036	0.16	0.27	0.018	0.02	0.15	0.43	1.9
		GP4-S-26.0	26-Sep-02	26.0	0.007	0.011	0.011	0.013	0.013	0.005 U	0.01	0.005 U	0.005 U	0.005 U	0.012	0.007	0.005 U	0.005 U	0.005 U	0.12	0.2
GP5	MFA	GP5-S-26.0	7-Oct-02	13.0	1.3	1.8	1.5	3.3	1.5	0.23	2.3	0.055 U	0.21	0.13	2.5	1.2	0.055 U	0.085	0.055 U	2.1	18.2
		GP5-S-21.0	7-Oct-02	21.0	6.8	4.4	3.8	8.4	6.9	0.47	4.4	5.6	0.59	6.7	4.3	19.	3.4	0.16	24.	21.	119.9
		GP5-S-26.0	7-Oct-02	26.0	0.017	0.014	0.012	0.02	0.023	0.007 U	0.014	0.008	0.007 U	0.013	0.017	0.048	0.007 U	0.007 U	0.055	0.068	0.3
GP6	MFA	GP6-S-23.0	30-Sep-02	15.0	0.22	0.35	0.25	0.62	0.25	0.052	0.49	0.006	0.008	0.052	0.48	0.13	0.005 U	0.028	0.04	0.22	3.2
		GP6-S-23.0	30-Sep-02	23.0	74.	42.	38.	83.	77.	5.6	45.	140.	8.7	110.	42.	210.	87.	8.2	450.	230.	1,650.5
		GP6-S-30.0	30-Sep-02	30.0	0.01	0.013	0.01	0.02	0.013	0.007 U	0.014	0.074 U	0.007 U	0.007 U	0.014	0.012	0.007 U	0.007 U	0.007 U	0.018	0.1
GP7	MFA	GP7-S-30.0	2-Oct-02	9.0	1.4	1.3	1.2	2.1	1.7	0.27	2.1	0.018	0.49	0.38	2.5	2.5	0.003	0.38	0.37	1.8	18.5
		GP7-S-15.5	2-Oct-02	15.5	21.	31.	27.	57.	25.	4.4	34.	0.73	6.7	5.8	35.	32.	0.93	5.5	9.2	55.	350.3
		GP7-S-30.0	2-Oct-02	30.0	17.	17.	14.	28.	20.	2.	17.	15.	1.9	14.	16.	47.	7.4	1.1	45.	57.	319.4
GP10	MFA	GP10-S-20.0	16-Jul-03	20.0	2.4	2.	0.47	1.9	1.8	0.19	0.91	1.6	2.	2.5	1.3	5.6	1.7	10.	7.7	7.	49.1
GP11	MFA	GP11-S-15.0	14-Jul-03	15.0	44.	45.	11.	44.	31.	4.3	22.	63.	8.6	37.	29.	59.	28.	110.	67.	120.	722.9
GP20	MFA	GP20-S-30.0	19-Jul-04	30.0	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U		0.067 U	0.069	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.113	0.067 U	0.067	0.2
GP21	MFA	GP21-S-30.0	19-Jul-04	30.0	3.56	3.2	1.22	3.81	3.92		1.77	12.	1.66	6.42	2.3	13.	6.27	60.2	35.1	16.6	171.
GP22	MFA	GP22-S-30.0	19-Jul-04	30.0	174.	179.	53.	186.	185.		56.2	642.	32.9	281.	112.	657.	266.	3,190.	1,270.	636.	7,920.1
(duplicate)	MFA	GP22-S-DUP2	19-Jul-04	30.0	170.	167.	53.2	189.	182.		57.7	626.	33.3	281.	110.	660.	260.	3,360.	1,350.	679.	8,178.2
GP23	MFA	GP23-S-28.5	19-Jul-04	28.5	48.1	50.4	16.5	52.9	52.8		19.7	161.	8.14	73.2	23.3	163.	72.7	259.	415.	190.	1,605.7
GP24	MFA	GP24-S-26.0	19-Jul-04	26.0	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U		0.067 U	0.459	0.067 U	0.07	0.067 U	0.074	0.214	0.227	0.526	0.116	1.7

TABLE 12 – Summary of Analytical Results for Soil Samples
Polynuclear Aromatic Hydrocarbons

PAHs by EPA Method 8270SIM or 8270C					Analytical Results in mg/kg (ppm)																
					Carcinogenic PAHs							Non-carcinogenic PAHs									
Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth (feet bgs)	Benz (a) anthracene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Chrysene	Dibenzo (ah) anthracene	Indeno (1,2,3-cd) pyrene	Acenaphthene	Acenaph-thylene	Anthracene	Benzo (ghi) perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	Total PAHs
Surface Samples																					
S-1	HAI	5237-010821-167	21-Aug-01	0.2	0.153 J	0.256 J	0.159 J	0.322 J	0.201 J	0.067 U	0.199 J	0.067 U	0.067 U	0.067 U	0.334 J	0.211	0.067 U	0.067 U	0.08	0.228 J	2.1
S-2	HAI	5237-010821-168	21-Aug-01	0.2	0.067 U	0.081	0.07	0.11	0.069	0.067 U	0.077	0.067 U	0.067 U	0.067 U	0.143	0.069	0.067 U	0.067 U	0.067 U	0.087	0.7
S-3	HAI	5237-010821-169	21-Aug-01	0.2	0.119	0.156	0.109	0.213	0.167	0.067 U	0.113	0.067 U	0.067 U	0.067 U	0.197	0.259	0.067 U	0.067 U	0.149	0.315	1.8
S-4	HAI	5237-010821-170	21-Aug-01	0.2	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	U
(duplicate)		5237-010821-171	21-Aug-01	0.2	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	U
S-5	HAI	5237-010821-172	21-Aug-01	0.2	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	U
RP-11	AMEC	128-01	17-Nov-05	7.5-8.0	91.	58.	65. J	99.	100.	9.6 J	29. J	240.	10.	160.	81. J	300.	140. J	700.	630.	460. J	3,172.6
Outfall / Embankment Sample																					
Fab 2 OF	HAI	5237-010919-173	19-Sep-01	0.2	7.	6.67 U	6.7	7.1	8.7	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U	6.67 U	21.	6.67 U	6.67 U	17.5	23.2	91.2
Stormwater Catch Basin Sample																					
CDA / Chrome Shed Catch Basin	Wacker	CLI Composite 1-2	19-Jun-01	NA	0.2	0.3	0.2	0.2	0.3	0.17 U	0.2	0.17 U	0.17 U	0.17 U	0.2	0.4	0.17 U	0.17 U	0.2	0.4	2.6

Note: bgs = below ground surface
EPA = U.S. Environmental Protection Agency
HAI = Hahn and Associates, Inc.
J = estimated concentration
LTI = Limno-Tech, Inc.
MFA = Maul Foster & Alongi, Inc.
mg/kg = milligrams per kilogram
PAHs = polynuclear aromatic hydrocarbons
ppm = parts per million
U = not detected above detection limit indicated

TABLE 13 – Summary of Analytical Results for Soil Samples
Detected Semi-Volatile Organic Compounds by EPA Method 8270C

Semi-Volatile Organics by EPA Method 8270C					Analytical Results in mg/kg (ppm)				
Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth (ft bgs)	2-Methyl naphthalene	Carbazole	Dibenzofuran	Other SVOCs	PAHs
Push Probe Boring Samples									
P-1	HAI	5237-010817-142	17-Aug-01	30.0	2,180.	413.	230.	U	See PAH Table
P-2	HAI	5237-010814-115	14-Aug-01	22.5	0.335 U	0.67 U	0.712	bis(2-ethylhexy)phthalate=4.3 butyl benzyl phthalate = 1.4 di-n-butyl phthalate =0.405	See PAH Table
P-3	HAI	5237-010820-155	20-Aug-01	17.0	683.	44.	49.3	U	See PAH Table
P-4	HAI	5237-010810-80	10-Aug-01	17.5	25.1 J	2.1 J	3.5 J	bis(2-ethylhexy)phthalate=1.48 butyl benzyl phthalate = 0.929	See PAH Table
P-5	HAI	5237-010813-92	13-Aug-01	9.5	553.	68.7	40.	1,2-diphenylhydrazine=3.5	See PAH Table
P-6	HAI	5237-010802-04	2-Aug-01	10.0	0.67 U	0.67 U	0.67 U	U	See PAH Table
P-7	HAI	5237-010808-64	8-Aug-01	22.5	0.67 U	0.67 U	0.67 U	7,12-dimethylbenz(a) anthracene=1.53	See PAH Table
(duplicate)		5237-010808-65	8-Aug-01	22.5	0.67 U	0.67 U	0.67 U	U	See PAH Table
P-10	HAI	5237-010803-23	3-Aug-01	26.0	0.067 U	0.067 U	0.067 U	U	See PAH Table
GP4	MFA	GP4-S-7.5	26-Sep-02	7.5	82.		9.2		See PAH Table
		GP4-S-19.0	26-Sep-02	19.0	0.0067		0.0054 U		See PAH Table
		GP4-S-26.0	26-Sep-02	26.0	0.053 U		0.0053 U		See PAH Table
GP5	MFA	GP5-S-26.0	7-Oct-02	13.0	0.055 U		0.055 U		See PAH Table
		GP5-S-21.0	7-Oct-02	21.0	0.054 U		0.3		See PAH Table
		GP5-S-26.0	7-Oct-02	26.0	0.0071 U		0.0071 U		See PAH Table
GP6	MFA	GP6-S-23.0	30-Sep-02	15.0	0.0066		0.0054 U		See PAH Table
		GP6-S-23.0	30-Sep-02	23.0	11.		11.		See PAH Table
		GP6-S-30.0	30-Sep-02	30.0	0.0074 U		0.0074 U		See PAH Table
GP7	MFA	GP7-S-30.0	2-Oct-02	9.0	0.12		0.014		See PAH Table
		GP7-S-15.5	2-Oct-02	15.5	2.2		0.24		See PAH Table
		GP7-S-30.0	2-Oct-02	30.0	5.		0.97		See PAH Table
GP10	MFA	GP10-S-20.0	16-Jul-03	20.0	3.2	NA	NA	1-methyl naphthalene = 2.0	See PAH Table
GP11	MFA	GP11-S-15.0	14-Jul-03	15.0	56.	NA	NA	1-methyl naphthalene = 31.0	See PAH Table
GP20	MFA	GP20-S-30.0	19-Jul-04	30.0	0.0667 U	0.145	0.0667 U		See PAH Table
GP21	MFA	GP21-S-30.0	19-Jul-04	30.0	14.	2.39	0.907		See PAH Table
GP22	MFA	GP22-S-30.0	19-Jul-04	30.0	627.	99.4	38.7		See PAH Table
(duplicate)	MFA	GP22-S-DUP2	19-Jul-04	30.0	657.	98.2	39.7		See PAH Table
GP23	MFA	GP23-S-28.5	19-Jul-04	28.5	37.8	22.9	12.4		See PAH Table
GP24	MFA	GP24-S-26.0	19-Jul-04	26.0	0.0667 U	0.159	0.0667 U		See PAH Table
Surface Samples									
S-1	HAI	5237-010821-167	21-Aug-01	0.2	0.67 U	0.67 U	0.67 U	U	See PAH Table
S-2	HAI	5237-010821-168	21-Aug-01	0.2	0.67 U	0.69 U	0.67 U	U	See PAH Table
S-3	HAI	5237-010821-169	21-Aug-01	0.2	0.67 U	0.134 U	0.67 U	2-chlorophenol = 0.0707 phenol = 0.077	See PAH Table
S-4	HAI	5237-010821-170	21-Aug-01	0.2	0.67 U	0.134 U	0.67 U	U	See PAH Table
(duplicate)	HAI	5237-010821-171	21-Aug-01	0.2	0.67 U	0.134 U	0.67 U	U	See PAH Table
S-5	HAI	5237-010821-172	21-Aug-01	0.2	0.67 U	0.134 U	0.67 U	U	See PAH Table
RP-11	AMEC	128-01	17-Nov-05	7.5-8.0	360.		13.	U	See PAH Table
Outfall / Embankment Sample									
Fab 2 OF	HAI	5237-010919-173	19-Sep-01	0.2	6.67 U	13.4 U	6.67 U	U	See PAH Table
Stormwater Catch Basin Sample									
CDA / Chrome Shed Catch Basin	Wacker	CLI Composite 1-2	19-Jun-01	NA				U	See PAH Table

Note:
bgs = below ground surface
EPA = U.S. Environmental Protection Agency
HAI = Hahn and Associates, Inc.
J = estimated concentration
LTI = Limno-Tech, Inc.
MFA = Maul Foster & Alongi, Inc.
mg/kg = milligrams per kilogram
PAHs = polynuclear aromatic hydrocarbons
ppm = parts per million
SVOCs = semi-volatile organic compounds
U = not detected above detection limit indicated

TABLE 14 – Summary of Analytical Results for Soil Samples: Total Metals

Soil Sample Location	Collected By	Sample Number	Sample Date	Sample Depth (feet bgs)	Aluminum	Antimony	Arsenic	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Magnesium	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Titanium	Vanadium	Zinc
					Analytical Results - mg/kg (ppm)																				
					Total Metals by EPA Methods 6010, 200.7 and/or 7000 Series																				
				Background Le	-	4.	7.	1.	-	42.		36.	43,100. [2]	17.	1,095. [2]	-	0.07	38.		2.	1.	-			86.
Push Probe Boring Samples																									
P-1	HAI	5237-010817-142	17-Aug-01	30.0		0.5 U	1.16	1. U		8.74	7.54	8.01	12,500.	1.58	127.			9.86		0.5 U	0.5 U		724.	41.7	26.1
P-2	HAI	5237-010814-115	14-Aug-01	22.5		1.39	4.05	**1.04**		16.4	12.6	**37.6**	24,500.	**75.3**	246.			**45.3**		0.5 U	0.5 U		1,570.	65.2	**244.**
P-3	HAI	5237-010820-152	20-Aug-01	6.5		0.96	3.12	1. U		12.3	13.2	12.6	23,400.	1.04	269.			14.8		0.5 U	0.5 U		1,520.	65.4	42.6
	HAI	5237-010820-155	20-Aug-01	17.0		0.79	3.28	1. U		10.9	11.8	15.5	21,700.	9.21	190.			14.7		0.5 U	0.5 U		1,270.	57.7	44.4
P-4	HAI	5237-010810-80	10-Aug-01	17.5		1.45	3.27	0.5 U		13.4	13.2	15.9	25,200.	**21.3**	220.			15.6		0.5 U	0.5 U		1,510.	65.7	**105.**
P-5	HAI	5237-010813-92	13-Aug-01	9.5		0.97	3.39	0.5 U		10.9	10.9	11.1	22,200.	8.07	201.			13.4		0.5 U	0.5 U		1,140.	54.8	38.7
P-6	HAI	5237-010802-04	2-Aug-01	10.0		1.04	3.01	0.5 U		11.5	11.5	14.3	21,900.	3.57	227.			13.9		0.5 U	0.5 U		1,180.	55.8	44.4
P-7	HAI	5237-010808-64	8-Aug-01	22.5		1.15	2.09	0.5 U		19.	9.62	20.4	21,100.	1.73	210.			15.3		0.5 U	0.5 U		1,240.	66.8	40.8
(duplicate)	HAI	5237-010808-65	8-Aug-01	22.5		1.1	2.49	0.5 U		20.4	10.4	21.7	22,700.	1.86	228.			17.2		0.5 U	0.5 U		1,180.	67.3	77.
P-8	HAI	5237-010806-31	6-Aug-01	2.0		0.95 J	3.1	0.5 U		11.7	12.3	10.7	23,700.	11.4	220.			13.8		0.5 U	0.5 U		1,310.	63.3 J	46.5 J
P-9	HAI	5237-010807-50	7-Aug-01	21.5		1.85	4.2	0.5 U		13.9		28.2 J	20,000.	**31.5**	268.			14.		0.5 U	0.5 U		1,040.	50.	**126.**
P-10	HAI	5237-010803-23	3-Aug-01	26.0		1.3	2.68	1. U		12.6	10.1	19.3	18,000.	**32.6**	227.			12.8		0.5 U	0.5 U		961.	47.5	66.4
RP-11	AMEC	128-01	17-Nov-05	7.5-8.0	8,780		3. J	0.08 U	3,630.	11.		14.	20.8	13. J	180. **J**	2,590. J	0.02 U	15.1	525.			327. J		60.3	45.1 J
Surface Samples (Above Top of Willamette River Embankment)																									
S-1	HAI	5237-010821-167	21-Aug-01	0.2		1.17	2.54	1. U		9.67	15.7	13.6	33,500.	1.97	380.			10.6		0.5 U	0.5 U		1,920.	89.8	**104.**
S-2	HAI	5237-010821-168	21-Aug-01	0.2		0.8	2.97	1. U		15.	14.3	14.6	26,900.	1.61	346.			15.		0.5 U	0.5 U		1,650.	74.6	50.
S-3	HAI	5237-010821-169	21-Aug-01	0.2		1.02	3.26	1. U		16.7	13.6	21.9	25,500.	10.1	366.			16.3		0.5 U	0.5 U		1,260.	68.4	70.6
S-4	HAI	5237-010821-170	21-Aug-01	0.2		1.38	4.26	1. U		17.7	19.1	18.4	37,700.	1.98	758.			24.		0.5 U	0.5 U		1,850.	97.2	51.1
(duplicate)	HAI	5237-010821-171	21-Aug-01	0.2		1.49	4.4	1. U		19.5	21.3	19.1	38,000.	2.6	756.			24.8		0.5 U	0.5 U		1,800.	102.	51.2
S-5	HAI	5237-010821-172	21-Aug-01	0.2		1.19	3.72	1. U		13.5	15.	25.1	31,600.	3.82	544.			18.		0.5 U	0.5 U		1,370.	75.7	53.7
Outfall / Embankment Sample																									
Fab 2 OF	HAI	5237-010919-173	19-Sep-01	0.2		3.31	2.34	1. U		30.9	7.21	**286.**	16.7	**31.7**	351.			14.1		1. U	1. U		828.	49.1	**846.**
Stormwater Catch Basin Sample																									
CDA / Chrome Shed Catch Basin	Wacker	CLI Composite 1-2	19-Jun-01	NA		0.5 U	1.1	0.55		13.	4.4	32.	10,000.	16.	110.			8.3		0.5 U	**1.3**		430.	25.	**360.**

Note:
bgs = below ground surface
EPA = U.S. Environmental Protection Agency
J = estimated concentration
mg/kg = milligrams per kilogram
ppm = parts per million
U = not detected above detection limit indicated

1 = Oregon Department of Environmental Quality Default Background Concentrations for Metals (October 2002)
2 = Washington Department of Ecology (1994), *Natural Background Soil Metals Concentrations in Washington State*, Toxics Cleanup Program, October 1994
Bold = Concentration exceeds background level

TABLE 15 – Summary of Stormwater Effluent Testing Results: Siltronic Outfalls

Detected Chemicals Only

Analytical Parameters	**Laboratory Analytical Testing Results** in ug/L (ppb)		
Sample Location ==>	Fab 1 Area Outfall	Fab 2 Area Outfall	Admin Area Outfall
Sample Number ==>	5237-010822-327	5237-010822-328	5237-010822-329
Sampled By ==>	HAI	HAI	HAI
Sample Date ==>	22-Aug-01	22-Aug-01	22-Aug-01
Volatile Organic Compounds (VOCs) by EPA 8260B			
Acetone	34.4	20. U	20. U
Chloroform	2.69	1. U	1. U
Semi-Volatile Organic Compounds (SVOCs) by EPA 8270C			
All PAHs and SVOCs	U	U	U
Total Metals by EPA 6010 or 6020			
Barium	5.6	8.9	4.8
Copper	13.4	15.5	9.8
Iron	73.5	458.	9.8
Lead	5. U	5. U	29.2
Magnesium	834.	290.	239.
Manganese	27.3	23.5	12.4
Titanium	2.7	1.1	1.
Vanadium	2.	3.3	1.5
Zinc	167.	475.	280.
Cyanide by EPA 9010			
Total Cyanide	20. U	20. U	20. U

Note: EPA = U.S. Environmental Protection Agency
ppb = parts per billion
U = not detected above concentration indicated
ug/L = micrograms/liter

TABLE 16 – Summary of Surface Water Testing Results: Doane Creek Drainage - General Chemistry and Organics

Analytical Parameters	Laboratory Analytical Testing Results in ug/L (ppb)						Screening Level Values (SLVs)[6] in ug/L (ppb)							
							Human Health [5,7]					Ecological Receptors[5,7]		
Sample Location ==>	City Outfall 22C						Fish Consumption			Drinking Water				
Sample Number ==>	CO-22C-01	5237-05224-100	5237-05224-101 (DUP)	-5237-050601-100	5237-051024-100	5237-051024-101 (DUP)	EPA's NRWQC	Portland Harbor	DEQ's 2004	MCL	Tap Water PRGs	EPA's 2004	DEQ's 2004	Oak Ridge National
Sampled By ==>	AMEC	HAI	HAI	HAI	HAI	HAI	(organism only)	Specific Fish	AWQC			NRWQC	AWQC	Laboratory's
Sample Date ==>	13-Aug-02	24-Feb-05	24-Feb-05	1-Jun-05	24-Oct-05	24-Oct-05		Consumption Rate	(Organism Only)			(Chronic)	(Chronic)	(Tier II SCV) [1]
General Chemistry by EPA 160.2, 2340B, 300, 310.1; Cyanide by EPA 9010A, 9012A														
Total Suspended Solids	47,000.	-	-	-	-	-	#	#	#	#	#	#	#	#
Hardness	290,000.	-	-	-	-	-	#	#	#	#	#	#	#	#
Chloride	30,800.	-	-	-	-	-	#	#	#	#	#	#	#	#
Cyanide-Total	-	8.5	-	5. U	151.	135.	140 [2]	14.	140 [2]	200 [#]	730.	5.2 [2]	5.2 [2]	#
Cyanide-Amenable	-	6.	-	5. U	55.9	-	#	#	#	#	#	#	#	#
Sulfate	4,710.	-	-	-	-	-	#	#	#	#	#	#	#	#
Alkalinity	360,000.	-	-	-	-	-	#	#	#	#	#	#	#	#
Volatile Organic Compounds (VOCs) by EPA 8260B														
Acetone	3.56	25.0 U	-	25.0 U	25.0 U	25.0 U	#	#	#	#	#	#	#	1,500.
Benzene	3.15	1.00 U	-	1.00 U	1.0 U	1.0 U	51.	5.1	51.	5.	0.35	#	#	130.
Chlorobenzene	0.605	1.00 U	-	1.00 U	1.0 U	1.0 U	1,600.	160.	1,600.	100.	110.	#	50 [3]	64.
iso-Propylbenzene	0.577	2.00 U	-	2.00 U	2.0 U	2.0 U	#	#	#	#	#	#	#	#
Naphthalene	13.4	2.00 U	-	2.00 U	2.4	2.9	#	#	#	0.2 [4]	6.2	#	620 [3]	12.
Toluene	0.5 U	1.00 U	-	1.00 U	1.0 U	1.0 U	15,000.	1,500.	15,000.	1,000.	720.	#	#	9.8
All others	U	U	-	U	U	U	#	#	#	#	#	#	#	#
Semi-Volatile Organic Compounds (SVOCs) by EPA 8270C or by EPA 8270M-SIM														
Acenaphthene	32.5	4.15	4.51	3.65	22.7	18.6	990.	99.	990.	0.2 [4]	370.	#	520 [3]	#
Acenaphthylene	0.182	0.0296	0.0227	0.02 U	0.101	0.0857	#	#	#	0.2 [4]	#	#	#	#
Anthracene	0.456	0.0552	0.0514	0.0356	0.259	0.224	40,000.	4,000.	40,000.	0.2 [4]	1,800.	#	#	0.73
Benz(a)anthracene	0.0422 U	0.0195 J	0.0209	0.02 U	0.0228	0.0206 U	0.018	0.0018	0.018	0.2 [4]	0.092	#	#	0.027
Benzo(a)pyrene	U	0.0145 J	0.0192 J	0.02 U	0.0204 U	0.0206 U	0.018	0.0018	0.018	0.2	0.0092	#	#	0.014
Benzo(ghi)perylene	0.0326 U	0.0138 J	0.018 J	0.02 U	0.0204 U	0.0206 U	#	#	#	0.2 [4]	#	#	#	#
Benzo(k)flouranthene	U	0.0125 J	0.0157 J	0.02 U	0.0204 U	0.0206 U	0.018	0.0018	0.018	0.2 [4]	0.92	#	#	#
Benzo(b)fluoranthene	0.0365 U	0.0167 J	0.0195 J	0.02 U	0.0204 U	0.0206 U	0.018	0.0018	0.018	0.2 [4]	0.092	#	#	#
Chrysene	0.024 U	0.0209	0.0227 J	0.02 U	0.0213	0.0206 U	0.018	0.0018	0.018	0.2 [4]	0.92	#	#	#
Dibenzofuran	1.72	3. U	-	5. U	5.15 J	-	#	#	#	#	#	#	#	#
Dibenzo(a, h) anthracene	U	0.0100 U	0.02 U	0.02 U	0.0204 U	0.0206 U	0.018	0.0018	0.018	0.2 [4]	0.0092	#	#	#
Fluoranthene	2.05	0.314	0.264	0.252	1.19	0.997	140.	14.	140.	0.2 [4]	1,500.	#	#	#
Fluorene	6.26	0.812	0.741	0.55	3.02	2.6	5,300.	530.	5,300.	0.2 [4]	240.	#	#	3.9
Indeno(1,2,3-cd)pyrene	0.0288 U	0.0122 J	0.0159 J	0.02 U	0.0204 U	0.0206 U	0.018	0.0018	0.018	0.2 [4]	0.092	#	#	#
Naphthalene	0.688	0.281	0.259	0.061	2.54	2.09	#	#	#	0.2 [4]	6.2	#	620 [3]	12.
Phenanthrene	0.243	0.0476	0.0458	0.02 U	1.88	1.57	#	#	#	0.2 [4]	#	#	#	#
Pyrene	2.03	0.265	0.272	0.194	1.3	1.18	4,000.	400.	4,000.	0.2 [4]	180.	#	#	#
All others	U	U	U	U	U	U	#	#	#	#	#	#	#	#

Concentration Exceeds Lowest Screening Level Value in **One** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Two** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Three** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

TABLE 16 – Summary of Surface Water Testing Results: Doane Creek Drainage - General Chemistry and Organics

Analytical Parameters	Laboratory Analytical Testing Results in ug/L (ppb)					Screening Level Values (SLVs) [6] in ug/L (ppb)							
						Human Health [5,7]					Ecological Receptors[5,7]		
						Fish Consumption			Drinking Water				
Sample Location ==>	Northwest Drainage Pond		North Doane Lake Outlet										
Sample Number ==>	NDP-101-W	5327-05224-102	5237-05224-103	5237-050601-102	5237-051024-102	EPA's NRWQC (organism only)	Portland Harbor Specific Fish Consumption Rate	DEQ's 2004 AWQC (Organism Only)	MCL	Tap Water PRGs	EPA's 2004 NRWQC (Chronic)	DEQ's 2004 AWQC (Chronic)	Oak Ridge National Laboratory's (Tier II SCV) [1]
Sampled By [1] ==>	AMEC	HAI	HAI	HAI	HAI								
Sample Date ==>	13-Aug-02	24-Feb-05	24-Feb-05	1-Jun-05	24-Oct-05								
General Chemistry by EPA 160.2, 2340B, 300, 310.1; Cyanide by EPA 9010A, 9012A													
Total Suspended Solids	93,000.	-	-	-	-	#	#	#	#	#	#	#	#
Hardness	110,000.	-	-	-	-	#	#	#	#	#	#	#	#
Chloride	14,000.	-	-	-	-	#	#	#	#	#	#	#	#
Cyanide-Total	-	5. U	5. U	5. U	5. U	140 [2]	14.	140 [2]	200 [#]	730.	5.2 [2]	5.2 [2]	#
Cyanide-Amenable	-	5. U	5. U	5. U	5. U	#	#	#	#	#	#	#	#
Sulfate	1,560.	-	-	-	-	#	#	#	#	#	#	#	#
Alkalinity	160,000.	-	-	-	-	#	#	#	#	#	#	#	#
Volatile Organic Compounds (VOCs) by EPA 8260B													
Acetone	2.95	25.0 U	25.0 U	25.0 U	25.0 U	#	#	#	#	#	#	#	1,500.
Benzene	1.47	1.00 U	1.0 U	1.00 U	1.0 U	51.	5.1	51.	5.	0.35	#	#	130.
Chlorobenzene	0.5 U	1.00 U	1.1	1.00 U	1.0 U	1,600.	160.	1,600.	100.	110.	#	50 [3]	64.
iso-Propylbenzene	0.5 U	2.00 U	2.0 U	2.00 U	2.0 U	#	#	#	#	#	#	#	#
Naphthalene	5.89	2.00 U	2.0 U	2.00 U	2.0 U	#	#	#	0.2 [4]	6.2	#	620 [3]	12.
Toluene	0.563	1.00 U	1.0 U	1.00 U	1.0 U	15,000.	1,500.	15,000.	1,000.	720.	#	#	9.8
All others	U	U	U	U	U	#	#	#	#	#	#	#	#
Semi-Volatile Organic Compounds (SVOCs) by EPA 8270C or by EPA 8270M-SIM													
Acenaphthene	9.53	0.109	0.167	0.0685	0.318	990.	99.	990.	0.2 [4]	370.	#	520 [3]	#
Acenaphthylene	0.0144 U	0.0100 U	0.01 U	0.02 U	0.0204 U	#	#	#	0.2 [4]	#	#	#	#
Anthracene	0.184	0.0348	0.0109 J	0.02 U	0.0283	40,000.	4,000.	40,000.	0.2 [4]	1,800.	#	#	0.73
Benz(a)anthracene	0.141	0.0124 J	0.0119 J	0.02 U	0.0336	0.018	0.0018	0.018	0.2 [4]	0.092	#	#	0.027
Benzo(a)pyrene	U	0.0117 J	0.0125 J	0.02 U	0.0468	0.018	0.0018	0.018	0.2	0.0092	#	#	0.014
Benzo(ghi)perylene	0.163	0.0109 J	0.0114 J	0.02 U	0.0376	#	#	#	0.2 [4]	#	#	#	#
Benzo(k)flouranthene	U	0.0100 U	0.01 U	0.02 U	0.0251	0.018	0.0018	0.018	0.2 [4]	0.92	#	#	#
Benzo(b)fluoranthene	0.453	0.0130 J	0.013 J	0.0546	0.0442	0.018	0.0018	0.018	0.2 [4]	0.092	#	#	#
Chrysene	0.25	0.0155 J	0.0139 J	0.02 U	0.0442	0.018	0.0018	0.018	0.2 [4]	0.92	#	#	#
Dibenzofuran	1.01	3.00 U	3. U	0.02 U	5.05 U	#	#	#	#	#	#	#	#
Dibenzo(a, h) anthracene	U	0.0100 U	0.01 U	0.02 U	0.0204 U	0.018	0.0018	0.018	0.2 [4]	0.0092	#	#	#
Fluoranthene	1.59	0.0282	0.0318	0.0664	0.156	140.	14.	140.	0.2 [4]	1,500.	#	#	#
Fluorene	1.16	0.0359	0.0654	0.0255	0.0925	5,300.	530.	5,300.	0.2 [4]	240.	#	#	3.9
Indeno(1,2,3-cd)pyrene	0.136	0.0100 U	0.01 U	0.02 U	0.0296	0.018	0.0018	0.018	0.2 [4]	0.092	#	#	#
Naphthalene	0.0211 U	0.0964	0.688	0.138	0.0613	#	#	#	0.2 [4]	6.2	#	620 [3]	12.
Phenanthrene	0.0211 U	0.0336	0.0447	0.0256	0.121	#	#	#	0.2 [4]	#	#	#	#
Pyrene	1.57	0.0269	0.0293	0.0334	0.162	4,000.	400.	4,000.	0.2 [4]	180.	#	#	#
All others	U	U	U	U	U	#	#	#	#	#	#	#	#

Concentration Exceeds Lowest Screening Level Value in **One** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Two** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Three** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

TABLE 16 – Summary of Surface Water Testing Results: Doane Creek Drainage - General Chemistry and Organics

Analytical Parameters	Laboratory Analytical Testing Results in ug/L (ppb)							Screening Level Values (SLVs) [6] in ug/L (ppb)							
								Human Health [5,7]					Ecological Receptors[5,7]		
									Fish Consumption		Drinking Water				
Sample Location ==>	Tualatin Hills Drainage Culvert			Koppers Inc. Drainage Culvert											
Sample Number ==>	5237-05224-104	5237-050601-103	5237-051024-103	5237-05224-106	5237-050601-104	-050601-105 (Dup)	5237-051024-104	EPA's NRWQC (organism only)	Portland Harbor Specific Fish Consumption Rate	DEQ's 2004 AWQC (Organism Only)	MCL	Tap Water PRGs	EPA's 2004 NRWQC (Chronic)	DEQ's 2004 AWQC (Chronic)	Oak Ridge National Laboratory's (Tier II SCV) [1]
Sampled By ==>	HAI	HAI	HAI	HAI	HAI	HAI	HAI								
Sample Date ==>	24-Feb-05	1-Jun-05	24-Oct-05	24-Feb-05	1-Jun-05	1-Jun-05	24-Oct-05								
General Chemistry by EPA 160.2, 2340B, 300, 310.1; Cyanide by EPA 9010A, 9012A															
Total Suspended Solids	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Hardness	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Chloride	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Cyanide-Total	5. U	5. U	5. U	11.5	5. U	6.	34.	140 [2]	14.	140 [2]	200 [#]	730.	5.2 [2]	5.2 [2]	#
Cyanide-Amenable	5. U	5. U	5. U	10.7	5. U	6.	25.9	#	#	#	#	#	#	#	#
Sulfate	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Alkalinity	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Volatile Organic Compounds (VOCs) by EPA 8260B															
Acetone	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	#	#	#	#	#	#	#	1,500.
Benzene	1.0 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.0 U	51.	5.1	51.	5.	0.35	#	#	130.
Chlorobenzene	1.0 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.0 U	1,600.	160.	1,600.	100.	110.	#	50 [3]	64.
iso-Propylbenzene	2.0 U	2.00 U	2.0 U	2.0 U	2.00 U	2.00 U	2.0 U	#	#	#	#	#	#	#	#
Naphthalene	2.0 U	2.00 U	2.0 U	2.0 U	2.00 U	2.00 U	2.0 U	#	#	#	0.2 [4]	6.2	#	620 [3]	12.
Toluene	1.0 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.0 U	15,000.	1,500.	15,000.	1,000.	720.	#	#	9.8
All others	U	U	U	U	U	U	U	#	#	#	#	#	#	#	#
Semi-Volatile Organic Compounds (SVOCs) by EPA 8270C or by EPA 8270M-SIM															
Acenaphthene	0.0100 U	0.0376	0.0189 U	0.0325	0.346	0.158	0.312	990.	99.	990.	0.2 [4]	370.	#	520 [3]	#
Acenaphthylene	0.0100 U	0.02 U	0.0189 U	0.0100 U	0.0205	0.02 U	0.0943 U	#	#	#	0.2 [4]	#	#	#	#
Anthracene	0.0100 U	0.0612	0.0189 U	0.0542	0.0793	0.0699	0.371	40,000.	4,000.	40,000.	0.2 [4]	1,800.	#	#	0.73
Benz(a)anthracene	0.0100 U	0.137	0.0189 U	0.213	0.396	0.270	2.01	0.018	0.0018	0.018	0.2 [4]	0.092	#	#	0.027
Benzo(a)pyrene	0.0100 U	0.255	0.0189 U	0.282	0.672	0.489	2.99	0.018	0.0018	0.018	0.2	0.0092	#	#	0.014
Benzo(ghi)perylene	0.0100 U	0.187	0.0189 U	0.231	0.633	0.437	2.73	#	#	#	0.2 [4]	#	#	#	#
Benzo(k)flouranthene	0.0100 U	0.149	0.0189 U	0.210	0.557	0.402	2.23	0.018	0.0018	0.018	0.2 [4]	0.92	#	#	#
Benzo(b)fluoranthene	0.0100 U	0.271	0.0189 U	0.278	0.745	0.566	2.74	0.018	0.0018	0.018	0.2 [4]	0.092	#	#	#
Chrysene	0.0100 U	0.23	0.0189 U	0.232	0.636	0.457	2.45	0.018	0.0018	0.018	0.2 [4]	0.92	#	#	#
Dibenzofuran	3.00 U	5. U	4.81 U	3.00 U	5. U	-	5.88 U	#	#	#	#	#	#	#	#
Dibenzo(a, h) anthracene	0.0100 U	0.0487	0.0189 U	0.0726	0.165	0.118	0.764	0.018	0.0018	0.018	0.2 [4]	0.0092	#	#	#
Fluoranthene	0.0100 U	0.629	0.0196	0.346	1.19	0.918	3.86	140.	14.	140.	0.2 [4]	1,500.	#	#	#
Fluorene	0.0100 U	0.0373	0.0189 U	0.0198 J	0.0612	0.0535	0.129	5,300.	530.	5,300.	0.2 [4]	240.	#	#	3.9
Indeno(1,2,3-cd)pyrene	0.0100 U	0.137	0.0189 U	0.201	0.489	0.344	2.22	0.018	0.0018	0.018	0.2 [4]	0.092	#	#	#
Naphthalene	0.0200 U	0.0416	0.0189 U	0.0200 U	0.0563	0.0698	0.118	#	#	#	0.2 [4]	6.2	#	620 [3]	12.
Phenanthrene	0.0100 U	0.319	0.0189 U	0.135	0.34	0.380	1.79	#	#	#	0.2 [4]	#	#	#	#
Pyrene	0.0200 U	0.213	0.0224	0.299	0.612	0.386	3.83	4,000.	400.	4,000.	0.2 [4]	180.	#	#	#
All others	U	U	0.0189 U	U	U	0.02 U	U	#	#	#	#	#	#	#	#

Concentration Exceeds Lowest Screening Level Value in **One** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Two** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Three** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Note: 1 = Tier II SCV values were taken from Suter II, G.W. and Tasco, C.L., 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision. ORNL publication ES/ER/TM-96/R2
2 = Cyanide value is based on a free cyanide value per DEQ OAR 340-41 Table 33, and EPA values are based on total cyanide
3 = Values were taken from (OAR 340-41), which are Water Quality Guidance Values, not criteria, that can be used in the application of Oregon's Narrative Toxics Criteria to waters of the state in order to protect aquatic life.
4 = MCL is based on benzo(a)pyrene
5 = Stormwater values in this table are intended for screening non-permitted discharges.
6 = Screening Level Values for Soil/Stormwater Sediment, Stormwater and Surface water, *Portland Harbor Joint Source Control Strategy*, DEQ, December 2005
7 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved) as potential ARARs under CERCLA. The final determination will be made in the EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be evaluated and prioritized on a case by case basis.
AWQC = Ambient Water Quality Criteria
DEQ = Oregon Department of Environmental Quality

EPA = U.S. Environmental Protection Agency
J = estimated concentration
MCL = Maximum Contaminant Level
NRWQC = National Recommended Water Quality Criteria
ppb = parts per billion
PRG = Potential Remediation Goal
SCV = Secondary Chronic Value
U = not detected above concentration indicated
ug/l = micrograms/liter
= Screening Level not established

TABLE 17 – Summary of Surface Water Testing Results: Doane Creek Drainage - Metals

Analytical Parameters	Laboratory Analytical Testing Results in ug/L (ppb)						Screening Level Values (SLVs) [9] in ug/L (ppb)							
	City Outfall 22C						Human Health [5,10]					Ecological Receptors [5,10]		
							Fish Consumption			Drinking Water				
Sample Location ==>														
Sample Number ==>	CO-22C-01	5237-05224-100	05224-101 (DUP)	050601-100	5237-051024-100	051024-101 (DUP)	EPA's NRWQC (organism only)	Portland Harbor Specific Fish Consumption Rate	DEQ's 2004 AWQC (Organism Only)	MCL	Tap Water PRGs	EPA's 2004 NRWQC (Chronic)	DEQ's 2004 AWQC (Chronic)	Oak Ridge National Laboratory's (Tier II SCV) [1]
Sampled By ==>	AMEC	HAI	HAI	HAI	HAI	HAI								
Sample Date ==>	13-Aug-02	24-Feb-05	24-Feb-05	1-Jun-05	24-Oct-05	24-Oct-05								
Total Metals by EPA 6010 or 6020														
Antimony	-	0.50 U	0.5 U	0.5 U	-	-	640.	64.	640.	6.	15.	#	1600 [1]	30.
Arsenic	1.14 J	1.00 U	1. U	1.18	3.09	3.	0.14	0.014	0.14	10.	0.045	150.	#	3.1 [2]
Aluminum	9. U	-	-	-	-	-	#	#	#	#	#	#	#	#
Barium	56.9	20.8	20.3	24.8	40.4	41.7	#	#	#	#	#	#	#	#
Boron	73.7	-	-	-	-	-	#	#	#	#	#	#	#	#
Cadmium[4]	0.0071 U	0.10 U	0.1 U	0.01 U	0.1 U	0.1 U	#	#	#	5.	18.	0.0094	0.38 [3]	#
Calcium	70,800.	-	-	-	-	-	#	#	#	#	#	#	#	#
Chromium	0.0354 U	1.00	1. U	1. U	1. U	1. U	#	#	#	#	110.	11.	11 [3]	#
Cobalt	2.74	-	-	-	-	-	#	#	#	#	#	#	#	#
Copper[4]	45.	2.00 U	2. U	2. U	2. U	2. U	#	#	#	1,300.	1,500.	2.7	3.6 [3]	#
Iron	19,100.	3,230.	3,180.	3,333.	13,400.	15,800.	#	#	#	#	#	#	#	#
Lead[4]	0.082 U	1.00 U	1. U	1. U	1. U	1. U	#	#	#	15.	#	0.54 [3]	0.54 [3]	#
Magnesium	26,700.	-	-	-	-	-	#	#	#	#	#	#	#	#
Manganese	3,470.	341	340.	347.	352.	2,040.	100.	10.	100.	50 [6]	880.	#	#	120.
Mercury	-	0.200 U	0.2 U	0.2 U	-	-	#	0.0146	0.146	2.	11.	0.77	0.012	1.3 [7]
Molybdenum	13.6	-	-	-	-	-	#	#	#	#	#	#	#	#
Nickel[4]	2.23	2.00 U	-	2. U	2. U	2. U	4,600.	460.	4,600.	#	730.	16.	49 [3]	#
Potassium	4,770.	-	-	-	-	-	#	#	#	#	#	#	#	#
Selenium	-	1.00 U	1. U	1. U	1. U	1. U	4,200.	420.	4,200.	50.	180.	5 [8]	35 [3]	3.
Silicon Dioxide	42,600.	-	-	-	-	-	#	#	#	#	#	#	#	#
Silver	1.18	1.00 U	1. U	1. U	1. U	1. U	#	#	#	100 [6]	180.	#	0.12 [3]	0.36
Sodium	36,100.	-	-	-	-	-	#	#	#	#	#	#	#	#
Thallium	-	1.00 U	1. U	1. U	0.1 U	0.1 U	#	#	#	#	#	#	#	#
Vanadium	0.726 U	5.00 U	5. U	5. U	5. U	5. U	#	#	#	#	#	#	#	#
Zinc[4]	7.64 U	-	-	-	-	-	26,000.	2,600.	26,000.	5,000 [6]	11,000.	36.	33.	#

Concentration Exceeds Lowest Screening Level Value in **One** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Two** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Three** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

TABLE 17 – Summary of Surface Water Testing Results: Doane Creek Drainage - Metals

Analytical Parameters	Laboratory Analytical Testing Results in ug/L (ppb)					Screening Level Values (SLVs) [9] in ug/L (ppb)							
						Human Health [5,10]					Ecological Receptors [5,10]		
						Fish Consumption			Drinking Water				
	Northwest Drainage Pond		North Doane Lake Outlet										
Sample Location ==>						EPA's NRWQC (organism only)	Portland Harbor Specific Fish Consumption Rate	DEQ's 2004 AWQC (Organism Only)	MCL	Tap Water PRGs	EPA's 2004 NRWQC (Chronic)	DEQ's 2004 AWQC (Chronic)	Oak Ridge National Laboratory's (Tier II SCV) [1]
Sample Number ==>	NDP-101-W	5327-05224-102	5237-05224-103	5237-050601-102	5237-051024-102								
Sampled By [1] ==>	AMEC	HAI	HAI	HAI	HAI								
Sample Date ==>	13-Aug-02	24-Feb-05	24-Feb-05	1-Jun-05	24-Oct-05								
Total Metals by EPA 6010 or 6020													
Antimony	-	0.50 U	0.5 U	0.5 U	-	640.	64.	640.	6.	15.	#	1600 [1]	30.
Arsenic	11.6 J	1. U	1.02	4.18	7.64	0.14	0.014	0.14	10.	0.045	150.	#	3.1 [2]
Aluminum	1,780.	-	-	-	-	#	#	#	#	#	#	#	#
Barium	96.4	12.3	21.4	29.	54.8	#	#	#	#	#	#	#	#
Boron	121.	-	-	-	-	#	#	#	#	#	#	#	#
Cadmium[4]	0.016	0.10 U	0.1 U	0.1 U	0.1 U	#	#	#	5.	18.	0.0094	0.38 [3]	#
Calcium	27,200.	-	-	-	-	#	#	#	#	#	#	#	#
Chromium	4.04	1. U	1. U	1.24	1.3	#	#	#	#	110.	11.	11 [3]	#
Cobalt	9.52	-	-	-	-	#	#	#	#	#	#	#	#
Copper[4]	11.1	2.00 U	2. U	2.64	2.05	#	#	#	1,300.	1,500.	2.7	3.6 [3]	#
Iron	22,300.	648	1,180.	2,030.	6,210.	#	#	#	#	#	#	#	#
Lead[4]	5.2	1. U	1.19	2.18	2.84	#	#	#	15.	#	0.54 [3]	0.54 [3]	#
Magnesium	9,380.	-	-	-	-	#	#	#	#	#	#	#	#
Manganese	2,660.	62.6	192.	455.	1,140.	100.	10.	100.	50 [6]	880.	#	#	120.
Mercury	-	0.2 U	0.2 U	0.2 U	0.2 U	#	0.0146	0.146	2.	11.	0.77	0.012	1.3 [7]
Molybdenum	44.1	-	-	-	-	#	#	#	#	#	#	#	#
Nickel[4]	4.41	2. U	2. U	2. U	2.05	4,600.	460.	4,600.	#	730.	16.	49 [3]	#
Potassium	2,270.	-	-	-	-	#	#	#	#	#	#	#	#
Selenium	-	1. U	1. U	1. U	1. U	4,200.	420.	4,200.	50.	180.	5 [8]	35 [3]	3.
Silicon Dioxide	35,400.	-	-	-	-	#	#	#	#	#	#	#	#
Silver	0.8 U	1. U	1. U	1. U	1. U	#	#	#	100 [6]	180.	#	0.12 [3]	0.36
Sodium	25,300.	-	-	-	-	#	#	#	#	#	#	#	#
Thallium	-	1. U	1. U	1. U	0.1 U	#	#	#	#	#	#	#	#
Vanadium	21. J	5. U	5. U	5.25	7.36	#	#	#	#	#	#	#	#
Zinc[4]	345.	-	-	-	-	26,000.	2,600.	26,000.	5,000 [6]	11,000.	36.	33.	#

Concentration Exceeds Lowest Screening Level Value in **One** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Two** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Three** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

TABLE 17 – Summary of Surface Water Testing Results: Doane Creek Drainage - Metals

Analytical Parameters	Laboratory Analytical Testing Results in ug/L (ppb)							Screening Level Values (SLVs) [9] in ug/L (ppb)							
								Human Health [5,10]					Ecological Receptors [5,10]		
	Tualatin Hills Drainage Culvert			Koppers Inc. Drainage Culvert				Fish Consumption			Drinking Water				
Sample Location ==>															
Sample Number ==>	5237-05224-104	5237-050601-103	5237-051024-103	5237-05224-106	5237-050601-104	-050601-105 (Dup)	5237-051024-104	EPA's NRWQC	Portland Harbor	DEQ's 2004	MCL	Tap Water PRGs	EPA's 2004	DEQ's 2004	Oak Ridge National
Sampled By [1] ==>	HAI	HAI	HAI	HAI	HAI	HAI	HAI	(organism only)	Specific Fish	AWQC			NRWQC	AWQC	Laboratory's
Sample Date ==>	24-Feb-05	1-Jun-05	24-Oct-05	24-Feb-05	1-Jun-05	1-Jun-05	24-Oct-05		Consumption Rate	(Organism Only)			(Chronic)	(Chronic)	(Tier II SCV) [1]
Total Metals by EPA 6010 or 6020															
Antimony	0.5 U	1.38	-	1. U	0.5 U	0.64	-	640.	64.	640.	6.	15.	#	1600 [1]	30.
Arsenic	1. U	1. U	1. U	1. U	1. U	1.00 U	1.01	0.14	0.014	0.14	10.	0.045	150.	#	3.1 [2]
Aluminum	-	-	-	-	-		-	#	#	#	#	#	#	#	#
Barium	7.42	78.1	10.3	28.2	50.8	51.8	111.	#	#	#	#	#	#	#	#
Boron	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Cadmium[4]	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.26	#	#	#	5.	18.	0.0094	0.38 [3]	#
Calcium	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Chromium	1. U	7.38	1. U	1. U	3.56	3.71	5.94	#	#	#	#	110.	11.	11 [3]	#
Cobalt	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Copper[4]	2. U	21.4	2. U	2. U	9.83	9.87	14.9	#	#	#	1,300.	1,500.	2.7	3.6 [3]	#
Iron	458.	4,700.	410.	653.	3,920.	4,200	5,780.	#	#	#	#	#	#	#	#
Lead[4]	1. U	17.	1. U	1. U	7.27	10.50	18.8	#	#	#	15.	#	0.54 [3]	0.54 [3]	#
Magnesium	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Manganese	4.31	118.	7.4	675.	424.	417	1,210.	100.	10.	100.	50 [6]	880.	#	#	120.
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	#	0.0146	0.146	2.	11.	0.77	0.012	1.3 [7]
Molybdenum	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Nickel[4]	2. U	3.77	2. U	2. U	2.59	2.70	5.48	4,600.	460.	4,600.	#	730.	16.	49 [3]	#
Potassium	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Selenium	1. U	1. U	1. U	1. U	1. U	1 U	1. U	4,200.	420.	4,200.	50.	180.	5 [8]	35 [3]	3.
Silicon Dioxide	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Silver	1. U	1. U	1. U	1. U	1. U	1 U	1. U	#	#	#	100 [6]	180.	#	0.12 [3]	0.36
Sodium	-	-	-	-	-	-	-	#	#	#	#	#	#	#	#
Thallium	1. U	1. U	0.1 U	1. U	1. U	1 U	0.1 U	#	#	#	#	#	#	#	#
Vanadium	5. U	11.9	5. U	5. U	8.24	8.41 U	11.7	#	#	#	#	#	#	#	#
Zinc[4]	-	-	-	-	-	-	-	26,000.	2,600.	26,000.	5,000 [6]	11,000.	36.	33.	#

Concentration Exceeds Lowest Screening Level Value in **One** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Two** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Concentration Exceeds Lowest Screening Level Value in **Three** of Three Categories (either Human Health Fish Consumption; Human Health Drinking Water; or Ecological Receptor)

Note: 1 = Values were taken from (OAR 340-41), which are Water Quality Guidance Values, not criteria, that can be used in
2 = Value for Arsenic V
3 = These values were taken from OAR-41 Table 20 because they will remain the enforceable values for these particular analytes.
4 = This is a hardness dependent metal. All values were calculated based on 25 mg/l of $CaCO_3$.
5 = Stormwater values in this table are intended for screening non-permitted discharges.
6 = National Secondary Drinking Water Standards
7 = See notation for ORNL's Mercury value
8 = This metal is listed as the total recoverable metal in the water column
9 = Screening level values were taken from the *Portland Harbor Joint Source Control Strategy*, December 2005
10 = EPA, under CERCLA authority, has identified the Safe Drinking Water Acts MCLs and AWQCs (federal and state once approved) as potential ARARs under CERCLA. The final determination will be made in the EPA Portland Harbor Record of Decision (ROD). Decisions to implement source control, prior to The EPA Portland Harbor ROD, due to an exceedance of an SLV in upland stormwater will be evaluated and prioritized on a case by case basis.

AWQC = Ambient Water Quality Criteria
DEQ = Oregon Department of Environmental Quality
EPA = U.S. Environmental Protection Agency
J = estimated concentration
MCL = Maximum Contaminant Level
NRWQC = National Recommended Water Quality Criteria
ppb = parts per billion
PRG = Potential Remediation Goal
SCV = Secondary Chronic Value
U = not detected above concentration indicated
ug/l = micrograms/liter
= Screening Level not established

TABLE 18 – Summary of Surface Sediment Testing Results: Doane Creek Drainage

Analytical Parameters	Laboratory Analytical Testing Results				Screening Level Values (SLVs)[11]	
Sample Location ==>	Northwest Drainage Pond		North Doane Creek		Toxicity	Bioaccumulation
Sample Number ==>	5327-05224-01		5327-05224-02		MacDonald PESc and Other SQVs [1]	DEQ 2001 Bioaccumulative Sediment SLVs [9]
Sampled By ==>	HAI		HAI			
Sample Date ==>	24-Feb-05		24-Feb-05			
Cyanide by EPA 9010A or 9010B in mg/kg						
Cyanide (amenable)	0.227	U	0.227	U	#	#
Cyanide (total)	0.227	U	0.227	U	#	#
Semivolatile Organic Compounds (SVOCs) by EPA 8270M-SIM or 8270C in mg/kg						
Acenaphthene	1.85		0.134	U	0.3 [2]	#
Acenaphthylene	0.268	U	0.134	U	0.2 [2]	#
Anthracene	2.78		0.134	U	0.845 [3]	#
Benz(a)anthracene	1.66		0.168		1.050 [3]	#
Benzo(a)pyrene	1.29		0.243		1.450 [3]	#
Benzo(ghi)perylene	0.814		0.197		0.3 [4]	#
Benzo(b)fluoranthene	1.31		0.243		#	#
Benzo(k)flouranthene	1.12		0.189		#	#
Carbazole	0.668	J	0.139	U	#	#
Chrysene	1.94		0.207		1.290 [3]	#
Dibenzofuran	0.981	J	0.139	U	#	#
Dibenzo(a, h) anthracene	0.268	U	0.134	U	1.300 [5]	#
Fluoranthene	4.43		0.244		2.230 [3]	#
Fluorene	2.64		0.134	U	0.536 [3]	#
Indeno(1,2,3-cd)pyrene	0.714		0.167		0.1 [6]	#
Naphthalene	0.268	U	0.134	U	0.561 [3]	#
Phenanthrene	6.05		0.134	U	1.170 [3]	#
Pyrene	3.66		0.249		1.520 [3]	#
All Others		U		U	#	#

TABLE 18 – Summary of Surface Sediment Testing Results: Doane Creek Drainage

Analytical Parameters	Laboratory Analytical Testing Results				Screening Level Values (SLVs)[11]	
Sample Location ==>	Northwest Drainage Pond		North Doane Creek		Toxicity	Bioaccumulation
Sample Number ==>	5327-05224-01		5327-05224-02		MacDonald PESc and Other SQVs [1]	DEQ 2001 Bioaccumulative Sediment SLVs [9]
Sampled By ==>	HAI		HAI			
Sample Date ==>	24-Feb-05		24-Feb-05			
Total Metals by EPA 6010 or 6020 or 7471A in mg/kg						
Antimony	1.53		0.500	U	64 [10]	10.
Arsenic	5.45		0.500	U	33 [3]	#
Barium	126		84.8		#	#
Cadmium	2.45	U	0.500	U	4.98 [3]	0.003
Chromium	21.1		4.10		#	#
Copper	27.6		8.12		149 [3]	10.
Iron	26,400		20,200		#	#
Lead	34.7		7.39		128 [3]	128.
Manganese	452		578		1,100 [2,5]	#
Mercury	0.0481	U	0.0532	U	1.06 [3]	#
Nickel	14.2		3.89		48.6 [3]	316.
Selenium	0.500	U	0.500	U	5 [7]	0.1
Silver	0.500	U	0.500	U	5 [7,8]	#
Thallium	0.500	U	0.500	U	#	#
Vanadium	84.0		42.9		#	#

Note: 1 = The values were chosen by first referring to the PEC's in MacDonald DD, Ingersoll C.G., Berger T.A. (2000) *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems*.
2 = Upper Effects Threshold (UET), Freshwater Sediment (NOAA, 1999)
3 = These values were taken from MacDonald DD, Ingersoll C.G., Berger T.A. (2000) *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems*.
4 = Values were taken from (OAR 340-41), which are Water Quality Guidance Values, not criteria, that can be used in the application of Oregon's Narrative Toxics Criteria to waters of the state in order to protect aquatic life.
5 = Severe effect level, British Columbia, quoted in MacDonald et al. (1999); Appendix 3-1
6 = 5x conversion from measured "LOW" to estimated "HIGH", NOAEL to chronic LOAEL per USEPA (1997b)
7 = Quoted in MacDonald et al. (1999); Appendix 3-1
8 = Lowest Apparent Effects Threshold (LAET), Table 11, WDOE (1997)
9 = All values are Level II Screening Level Values taken from DEQ Guidance for Ecological Risk Assessment, December 2001
10 = Sediment quality value (Hyalella), Washington State, quoted in MacDonald et al (1999); Appendix 3-1.
11 = Screening level values were taken from the *Portland Harbor Joint Source Control Strategy*, December 2005
DEQ = Oregon Department of Environmental Quality
EPA = U.S. Environmental Protection Agency
J = estimated concentration
ppm = parts per million
U = not detected above concentration indicated
mg/kg = milligram per kilogram
# = Reference Level not established
shaded = SLV exceeded

Table 19 - Boring Log Descriptions for Tar or Oil Identification in Soil Borings - Siltronic Property

Boring Number	Installation Date	Installed By	Installation Method	Total Boring Depth (feet bgs)	Soil Data Summary		
					NAPL/Tar Depth(s) (feet bgs)	Notes	Soil Type (USCS Soil Designation)
Upland Borings							
P-1	17-Aug-01	HAI	Push Probe	64	30 - 30.8	Black, weathered tar, creosote odor, very stiff, mixed with vegetative debris	Gravelly Silt (GM)
P-1A	18-Mar-02	HAI	Push Probe	58	28 - 30.5	Black, weathered tar, creosote odor, very stiff, non-elastic and grainy	Sand with Gravel (SP)
P-4	10-Aug-01	HAI	Push Probe	64	20 - 24	Soils have a coating of brown oil, continuous sheen	Sand with Gravel (SP)
P-5	13-Aug-01	HAI	Push Probe	100	9.5 - 10	Soils have a coating of brown oil, creosote odor, continuous sheen, several brick and tar fragments, very sharp boundary	Sand with Gravel (SP)
P-7	8-Aug-01	HAI	Push Probe	64	22.5 - 24	Several patches of oil coating soil, diesel odor, sheen	Silty Sandy Gravel (GM)
B-1	1977	CH2M HILL	?	45	22 - 30?	Black organic silt with bitumen	Silt (ML)
B-2	1977	CH2M HILL	?	65	5 - 26?	Sand with bitumen; grading with bitumen	Sand (SP) and Silt (ML)
B-3	1977	CH2M HILL	?	50	16?	Medium fine sand; grading with bitumen	Sand (SP)
B-1-8	1978	CH2M HILL	?	217	20 - 50	Oil saturated	Sand (SP) and Silt (ML)
B-2-8	1978	CH2M HILL	Cone Probe	30	25 - 30	Oily	Sand (SP) and Silt (ML)
B-3-8	1978	CH2M HILL	Cone Probe	50	20 - 25?	Oily	Sand/Gravel (SP)
B-4-8	1978	CH2M HILL	?	50	24	Oil	Sand (SP) and Silt (ML)
B-5-8	1978	CH2M HILL	?	50	15 - 30	Oily	Sand (SP) and Silt (ML)
B-HQ-8	1978	CH2M HILL	?	50	10	Oil	Silt (ML)
B-SU-8	1978	CH2M HILL	?	40	13	Oil	Silty Sand (SM)
B-102-8	1978	CH2M HILL	?	65	15 - 20	Oily	Silty Sand (SM)
B-102	1982	CH2M HILL	Mud Rotary	80	19 - 20	Cuttings are saturated with oily material and have a strong hydrocarbon odor.	Sample not recovered and soil type not noted.
B-104	1982	CH2M HILL	Revert Rotary	96.1	15 - 20?	Oil, occasional wood fragments, hydrocarbon odor	Sandy Silt (ML)
B-105	1982	CH2M HILL	Mud Rotary	76.7	16 - 20?	Oil at bottom of sample, hydrocarbon odor	Sand (SP)
B-106	1982	CH2M HILL	Mud Rotary	100	18 - 20	Oil	Silt (ML)
B-107	1982	CH2M HILL	Mud Rotary	71.5	12 - 23	Oil	Sand (SP) and Silt (ML)

Table 19 - Boring Log Descriptions for Tar or Oil Identification in Soil Borings - Siltronic Property

Boring Number	Installation Date	Installed By	Installation Method	Total Boring Depth (feet bgs)	Soil Data Summary		
					NAPL/Tar Depth(s) (feet bgs)	Notes	Soil Type (USCS Soil Designation)
Upland Borings (continued)							
MW-1/WS-1	1985	CH2M HILL	HSA	31.5	10 - 20	Saturated with oil, prominent oily sheen	Sand (SP)
MW-2/WS-2	1985	CH2M HILL	HSA	31.5	10 - 20	Sample tube came up oily, oily material on sample	Sand (SP)
MW-5/WS-5	1985	CH2M HILL	HSA	31.5	5 - 10	Oil sheen	Sand (SP)
					10 - 15	Saturated with oil	Sand (SP)
MW-6/WS-6	1985	CH2M HILL	HSA	31.5	15	Small oily splotches in soil	Sand (SP)
MW-7/WS-7	1985	CH2M HILL	HSA	41.5	25.5 - 27	Visible blotches of oil	Silt (ML) and Sand (SP)
RP-3-26	17-Feb-00	URS	Air Rotary	26.5	22 - 25.5	Small NAPL blobs on drill stem, rainbow sheen	Silty Sand (SM) and Silt (ML)
RP-03-30R	13-Sep-00	URS	Air Rotary	30.0	27 - 27.5	NAPL both as LNAPL and within water	Sand (SP)
WS-10	3-Sep-03	MFA	Rotosonic	106	21 - 27	Free product present; petroleum-like staining; dark gray to black fluid with reddish-green sheen	Sand (SP) and Silt (ML)
WS-11	21-Sep-03	MFA	Rotosonic	207	123.5 - 125	DNAPL in bottom of well WS-11-125	Sand (SP)
WS-14	9-Jul-04	MFA	Rotosonic	210	11.0 - 14.0	Tar-like balls	Sand (SP)
					26.0 - 29.0	Strong sheen and odor; possible product	Gravelly Silt (ML)
					29.0 - 33.0	Heavy sheen and odor; tarry-like impacts, possible product	Sandy Silt (ML)
					35.5 - 38.5	Heavy sheen and odor; globules	Sand (SP)
					121.9 - 125	3.09 feet of DNAPL measured in well	Sand (SP)
WS-15	23-Jul-04	MFA	Rotosonic	196	22.0 - 26.0	Black residue with heavy sheen and odor; black residue with strong odor	Organic Soil (OL) and Silty Sand (SM)
					34.5 - 42.5	Black residue with heavy sheen and odor	Organic Soil (OL) and Sand (SP)
WS-16	5-Aug-04	MFA	Rotosonic	236	66.0 - 74.0	Product visible	Sand (SP)
GP02-01	19-Mar-02	LTI	Push Probe	100	23 - 24.5	Tar	Sand (SP)
GP02-02	20-Mar-02	LTI	Push Probe	100	20.5 - 21	Tar, black	Sand (SP)
GP-10	16-Jul-03	MFA	Geo-Probe	25	19 - 24.5	Apparent NAPL with naphthalene-like odor	Sand (SP)
GP-12	29-Jun-04	MFA	Geo-Probe	20	17.5 - 18.0	Sand becomes black and tarry with strong odor	Sand (SP)
GP-13	29-Jun-04	MFA	Geo-Probe	20	18.5 - 19.0	Sand becomes black and tarry with strong odor and sheen	Sand (SP)
GP-16	29-Jun-04	MFA	Geo-Probe	25	19.0	Soil in shoe was tar-like and black with sheen	Sand (SP)
GP-17	29-Jun-04	MFA	Geo-Probe	20	10.0 - 12.0	Black and tar-like with sheen	Sand (SP)
GP-21	19-Jul-04	MFA	Geo-Probe	30	15.0 - 17.5	Strong odor with staining and sheen; tar-like feel	Sand (SP)
GP-22	19-Jul-04	MFA	Geo-Probe	30	22.0 - 24.0	Tar-like feel with odor and staining	Sand (SP)

Table 19 - Boring Log Descriptions for Tar or Oil Identification in Soil Borings - Siltronic Property

Boring Number	Installation Date	Installed By	Installation Method	Total Boring Depth (feet bml)	Soil Data Summary		
					NAPL/Tar Depth(s) (feet bml)	Notes	Soil Type (USCS Soil Designation)
In-Water Borings							
GP-25	1-Oct-04	MFA	Geo-Probe	151	6.0	NAPL globules with moderate odor and sheen	Clayey Silt (ML-CL)
GP-26	6-Oct-04	MFA	Geo-Probe	128	7.0	NAPL present	Clayey Silt (ML-CL)
					11	3-inch layer of black 'tar-like' material, high plasticity and odor	Clayey Silt (ML-CL)
GP-27	11-Oct-04	MFA	Geo-Probe	110	10.0 - 13.5	NAPL observed between 10.0 feet and 13.5 feet bml. NAPL rising to surface through drill casing set at 20 feet bml.	Not noted on boring log
GP-28	15-Oct-04	MFA	Geo-Probe	160	5.0 - 10.0	NAPL globules with strong odor and heavy sheen	Silt (ML)
					20.0 - 25.0	Black tar-like fines	Silt (ML)
GP-29	21-Oct-04	MFA	Geo-Probe	117	12.0	NAPL globules	Sand (SP)
GP-31	27-Oct-04	MFA	Geo-Probe	113	6.0 - 7.0	Visible NAPL	Sand (SP)
GP-32	29-Oct-04	MFA	Geo-Probe	121	5.5 - 6.0	Visible NAPL with strong odor and heavy sheen	Sand (SP)

NOTE:
bgs = below ground surface
bml = below mud line
HAI = Hahn and Associates, Inc.
HSA = hollow stem auger
LTI = Limno-Tech, Inc.
MFA = Maul Foster & Alongi, Inc.
NAPL = non - aqueous phase liquid
URS = URS Greiner Woodward Clyde
USCS = Unified Soil Classification System

TABLE 20 – Depth Intervals: Field Screen and Oil, Tar, or Solid Carbon Pitch Occurrence in Soil Borings - Siltronic Property

Boring Number	Installation Date	Installed By	Installation Method	Total Boring Depth (feet bgs)	Base of Fill WBZ (feet bgs)	Top of Alluvial WBZ (feet bgs)	Soil Boring Log Summary								
							Odor	Light Sheen	Heavy Sheen	Oil Blebs or Patchy Oil	Oil Saturation	Patchy/Soil-Mixed Tar	Tar	Carbon Pitch / Soil Mixture	Carbon Pitch
Upland Borings															
P-1	17-Aug-01	HAI	Push Probe	64	31	32	16-20.5	31-32					30-30.8		
P-1A	18-Mar-02	HAI	Push Probe	58	31	32							28-30.5		
P-2	14-Aug-01	HAI	Push Probe	100	32.5	34	20-22.5 30.5-32.5	3-4.25				3-4.25			
P-3	20-Aug-01	HAI	Push Probe	90	32.5	36	13-13.5 16.5-30.5 59-64 solvent?	13-13.5 16.5-18							
P-4	10-Aug-01	HAI	Push Probe	64	32	33	18-28 29.5-32	18-24		20-22.5					
P-5	13-Aug-01	HAI	Push Probe	100	33	36	9.5-14 20-22	9.5-13		9.5-10		9.5-10			
P-6	2-Aug-01	HAI	Push Probe	64	24	26	10-12	16-16.5 20-23.5						6.5-8	
P-7	8-Aug-01	HAI	Push Probe	64	25	49	24-25	24-25		22.5-24					
P-8	7-Aug-01	HAI	Push Probe	86.5	17	23.5		31.5-36							
P-9	7-Aug-01	HAI	Push Probe	64	24	24.5		8-12 21-22.5							
P-10	3-Aug-01	HAI	Push Probe	64	26.5	35.5									
P-11	17-Aug-01	HAI	Push Probe	20			7-13.5	7-13.5							
B-1	1977	CH2M HILL	?	45	33.7							22-30?			
B-2	1977	CH2M HILL	?	65								5-26?			
B-3	1977	CH2M HILL	?	50	22	30	30-35					16?			
B-1-8	1978	CH2M HILL	?	217							20-50				
B-2-8	1978	CH2M HILL	Cone Probe	30	25					25-30?					
B-3-8	1978	CH2M HILL	Cone Probe	50	30	34				20-25?					
B-4-8	1978	CH2M HILL	?	50	30	41				24					
B-5-8	1978	CH2M HILL	?	50	35	55.0				15-30?					
B-HQ-8	1978	CH2M HILL	?	50						10					

TABLE 20 – Depth Intervals: Field Screen and Oil, Tar, or Solid Carbon Pitch Occurrence in Soil Borings - Siltronic Property

Boring Number	Installation Date	Installed By	Installation Method	Total Boring Depth (feet bgs)	Base of Fill WBZ (feet bgs)	Top of Alluvial WBZ (feet bgs)	Soil Boring Log Summary								
							Odor	Light Sheen	Heavy Sheen	Oil Blebs or Patchy Oil	Oil Saturation	Patchy/Soil-Mixed Tar	Tar	Carbon Pitch / Soil Mixture	Carbon Pitch
B-SU-8	1978	CH2M HILL	?	40	28					13					
B-101-8	1978	CH2M HILL	?	58	21	55.0									
B-102-8	1978	CH2M HILL	?	65	27	53.0				15-20					
B-100	1982	CH2M HILL	Mud Rotary	90	21	60.0	5-10 20-21								
B-101	1982	CH2M HILL	Mud Rotary	87.5	21.5	46.0	15-20 25-30								
B-102	1982	CH2M HILL	Mud Rotary	80	20	49.5	10-25				19-20				
B-103	1982	CH2M HILL	Mud Rotary	77	19	35.0									
B-104	1982	CH2M HILL	Revert Rotary	96.1	25	94.0	15-20			15-20					
B-105	1982	CH2M HILL	Mud Rotary	76.7	20	61.0	10-20 30-35			16-17					
B-106	1982	CH2M HILL	Mud Rotary	100	30	80.0	15-20			18-20					
B-107	1982	CH2M HILL	Mud Rotary	71.5	20	70.0	10-15 20-25			12-23					
B-108	1982	CH2M HILL	Revert Rotary	69.5	20	50.0									
MW-1/WS-1	1985	CH2M HILL	HSA	31.5	26.5		10-25				11.5-21.5				
MW-2/WS-2	1985	CH2M HILL	HSA	31.5	26.5		10-25			10-20					
MW-3/WS-3	1985	CH2M HILL	HSA	41.5	36.5		15-36								
MW-4/WS-4	1985	CH2M HILL	HSA	41.5	20		15-20								
MW-5/WS-5	1985	CH2M HILL	HSA	31.5	25		5-25	5-10 15-20			10-15				
MW-6/WS-6	1985	CH2M HILL	HSA	31.5	21		10-21.5			16-16.5					
MW-7/WS-7	1985	CH2M HILL	HSA	41.5	21	28.0	20-21 26-26.5			26-26.5					
RP-01-65	2000	URS	Air Rotary	66.0	30	38.0									
RP-3-26	17-Feb-00	URS	Air Rotary	26.5	25	55.0					22-25				
RP-03-30R	13-Sep-00	URS	Air Rotary	30.0	15	33.0	17-27.5				26-27.5				
RP-3-52R	12-Sep-00	URS	Air Rotary	52.5	25	43.0	15-32 35.5-40								
RP-03-63	17-Feb-00	URS	Air Rotary	64.0	25	55.0	25-30								
W-03-81	16-Feb-00	URS	Air Rotary	91.5	35	91.0									
RP-06-87	7-Feb-00	URS	Air Rotary	88.0	25	68.0									
RP-07	1-May-02	AMEC	HAS/Air Rotary	119.4	34.5	39.5									

TABLE 20 – Depth Intervals: Field Screen and Oil, Tar, or Solid Carbon Pitch Occurrence in Soil Borings - Siltronic Property

Boring Number	Installation Date	Installed By	Installation Method	Total Boring Depth (feet bgs)	Base of Fill WBZ (feet bgs)	Top of Alluvial WBZ (feet bgs)	Soil Boring Log Summary								
							Odor	Light Sheen	Heavy Sheen	Oil Blebs or Patchy Oil	Oil Saturation	Patchy/Soil-Mixed Tar	Tar	Carbon Pitch / Soil Mixture	Carbon Pitch
WS-10	3-Sep-03	MFA	Rotosonic	106	26	93.0	8-8.7 21-27				21-27				
WS-11	21-Sep-03	MFA	Rotosonic	207	31.5	41.0	12-18 31.5 41-47 118-119.5	109-110 118-118.5							
WS-12	21-Sep-03	MFA	Rotosonic	207	37	40.0	13-13.5 15.5-17 18-27 31.5-33 34.5-37								
WS-13	11-Oct-03	MFA	Rotosonic	207	26	45.0	83-84		83-84						
WS-14	9-Jul-04	MFA	Rotosonic	210	29	33.0	11-14 26-67 75-84.5 85-89.5 90.5-99 102-107 108-114 138-141.5		26-38.5 90.5-96 102-105 108-110.5 124 130			11-14 29-33			
WS-15	23-Jul-04	MFA	Rotosonic	196	42.5	45.5	16-56	45.5-46	34.5-42.5 46-56						
WS-16	5-Aug-04	MFA	Rotosonic	236	38.5	52.0	23-26 32.5-36 38.5-44	23-26 38.5-52 56-58.5	52-56 58-74	66-74		22-26? 34.5-42.5?			
WS-17	13-Aug-04	MFA	Rotosonic	122	35	61.0	10-35 41.5-44.5 45-51		11-23 27.5-30						

TABLE 20 – Depth Intervals: Field Screen and Oil, Tar, or Solid Carbon Pitch Occurrence in Soil Borings - Siltronic Property

Boring Number	Installation Date	Installed By	Installation Method	Total Boring Depth (feet bgs)	Base of Fill WBZ (feet bgs)	Top of Alluvial WBZ (feet bgs)	Soil Boring Log Summary								
							Odor	Light Sheen	Heavy Sheen	Oil Blebs or Patchy Oil	Oil Saturation	Patchy/Soil-Mixed Tar	Tar	Carbon Pitch / Soil Mixture	Carbon Pitch
GP-011	29-Sep-99	URS	Geo-Probe	60	32	57.0	15-18								
GP02-01	19-Mar-02	LTI	Push Probe	100	26	36.0	25-27		41-44.5				23-24.5		
GP02-02	20-Mar-02	LTI	Push Probe	100	21	27.0	20-20.1	20-20.1					20.5-21		
GP02-03	21-Mar-02	LTI	Geo-Probe	100	26	26.5									
GP-025	11-Oct-99	URS	Push Probe	50	27	32.5	12.5-16 22-22.5								
GP-026	11-Oct-99	URS	Push Probe	50	32	40.0									
GP-027	12-Oct-99	URS	Push Probe	75	25	56.0									
GP-4	30-Sep-02	MFA	Geo-Probe	100	28	36.0									
GP-5	8-Oct-02	MFA	Geo-Probe	100	24	28.0									
GP-6	2-Oct-02	MFA	Geo-Probe	100	29	32.0									
GP-7	4-Oct-02	MFA	Geo-Probe	100	29	30.5									
GP-8	16-Jul-03	MFA	Geo-Probe	25	23										
GP-9	2-Jan-04	MFA	Geo-Probe	25	24										
GP-10	16-Jul-03	MFA	Geo-Probe	25	25		19-25			19-24.5					
GP-11		MFA	Geo-Probe	97	28	50.0	9.5-18.5 19-20								
GP-12	29-Jun-04	MFA	Geo-Probe	20			11-12.5 17.5-18					17.5-18			
GP-13	29-Jun-04	MFA	Geo-Probe	20			15-19					18.5-19			
GP-14	30-Jun-04	MFA	Geo-Probe	20			18.5-20	18.5-20							
GP-15	29-Jun-04	MFA	Geo-Probe	20			10-19								
GP-16	29-Jun-04	MFA	Geo-Probe	25			23	23				18.75-19			
GP-17	29-Jun-04	MFA	Geo-Probe	20			10-13	10-13				10-12			
GP-18	30-Jun-04	MFA	Geo-Probe	24			12.5-18		12.5-18						
GP-19	30-Jun-04	MFA	Geo-Probe	20			10-18								
GP-20	19-Jul-04	MFA	Geo-Probe	30			11-29.7	11-12 20-21.5							
GP-21	19-Jul-04	MFA	Geo-Probe	30			10-30	15-29.8				15-17.5			
GP-22	19-Jul-04	MFA	Geo-Probe	30			22-25		25-30			22-30			

TABLE 20 – Depth Intervals: Field Screen and Oil, Tar, or Solid Carbon Pitch Occurrence in Soil Borings - Siltronic Property

Boring Number	Installation Date	Installed By	Installation Method	Total Boring Depth (feet bgs)	Base of Fill WBZ (feet bgs)	Top of Alluvial WBZ (feet bgs)	Soil Boring Log Summary								
							Odor	Light Sheen	Heavy Sheen	Oil Blebs or Patchy Oil	Oil Saturation	Patchy/Soil-Mixed Tar	Tar	Carbon Pitch / Soil Mixture	Carbon Pitch
GP-23	19-Jul-04	MFA	Geo-Probe	30			20-21 23-28	20-21 23-28							
GP-24	19-Jul-04	MFA	Geo-Probe	30	25.5		15-16 22.5-25.5								
GP-33	28-Apr-05	MFA	Geo-Probe	205	30.4	37.5	0.5-15.3 16.5-30.4 34-36.5								
GP-36	3-May-05	MFA	Geo-Probe	210	30.5	36.5	14.5-36.5								
SIL-01	31-Oct-05	AMEC	Sonic	218	40.0	47.0	9.5-33.5 72-74		17-23						
SIL-02	15-Nov-05	AMEC	Sonic	235	34.5	47.0	10-34.5	10-15	28-4.5						
SIL-03	6-Dec-05	AMEC	Sonic	130	18.0	36.0									
SIL-04	9-Dec-05	AMEC	Sonic	120	35.5	52.0	6-8								
RP-11-216	29-Nov-05	AMEC	Sonic	216	28.0	41.0	7.5-26		7.5-16						

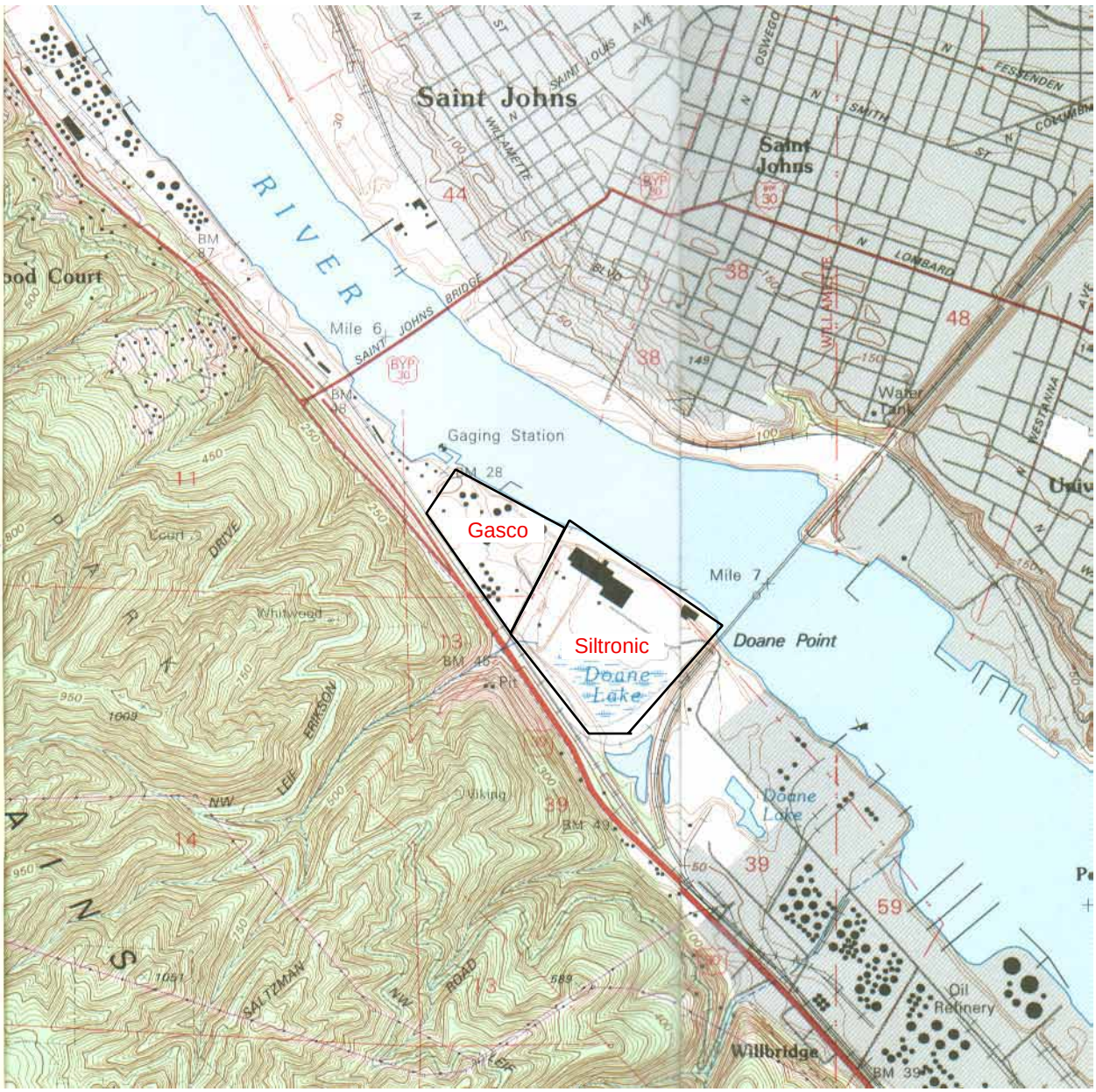
TABLE 20 – Depth Intervals: Field Screen and Oil, Tar, or Solid Carbon Pitch Occurrence in Soil Borings - Siltronic Property

Boring Number	Installation Date	Installed By	Installation Method	Total Boring Depth (feet bgs)	Base of Fill WBZ (feet bgs)	Top of Alluvial WBZ (feet bgs)	Soil Boring Log Summary								
							Odor	Light Sheen	Heavy Sheen	Oil Blebs or Patchy Oil	Oil Saturation	Patchy/Soil-Mixed Tar	Tar	Carbon Pitch / Soil Mixture	Carbon Pitch
In-Water Borings															
GP-25	1-Oct-04	MFA	Geo-Probe	151			16-28	27.5-28 31-35.5	16-18	6.0					
GP-26	6-Oct-04	MFA	Geo-Probe	128			3-18 21-21.5	30-32.5	3-18				11-11.25		
GP-27	11-Oct-04	MFA	Geo-Probe	110			20-33 35-41.5 45-55.5 57-60	35-40 45-47			10-13.5				
GP-28	15-Oct-04	MFA	Geo-Probe	160			5-34.5 50.5-51		5-10		5-10	20-25			
GP-29	21-Oct-04	MFA	Geo-Probe	117			7-67	62-67		12					
GP-30	25-Oct-04	MFA	Geo-Probe	118			3-18	3-12							
GP-31	27-Oct-04	MFA	Geo-Probe	113			6-37	6-22		6-7					
GP-32	29-Oct-04	MFA	Geo-Probe	121			5.5-16		5.5-6	5.5-6					
	29-Oct-04	MFA	Geo-Probe	121											

NOTE: bgs = below ground surface
bml = below mud line
HAI = Hahn and Associates, Inc.
HSA = hollow stem auger
LTI = Limno-Tech, Inc.
MFA = Maul Foster & Alongi, Inc.

Carbon pitch referes to any black solid/granular material - either coal-like; lampblack; or pencilpitch

FIGURES



Note: Base Map from Linnton (1990) and Portland (1990), Oregon, USGS 7.5-Minute Quadrangles

N

0 2,000 4,000

Approximate Scale in Feet
Contour Interval = 10 feet

FIGURE 1
Location Map

NW Natural Gasco Facility
7900 NW St. Helens Road

Siltronic Corporation Property
7200 NW Front Avenue
Portland, Oregon

HAHN AND ASSOCIATES, INC.

Project No. 2708/5237 November 2005

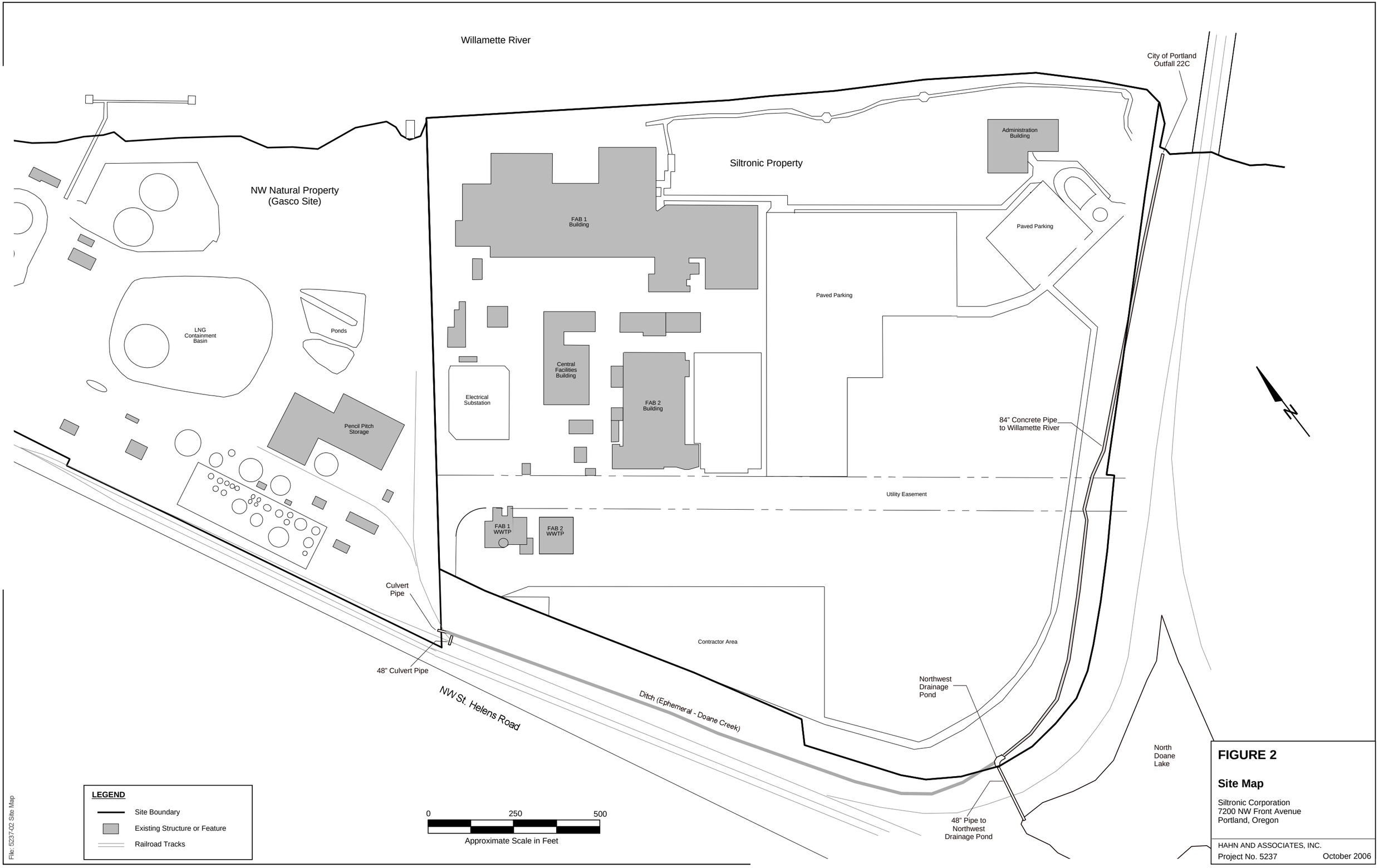


FIGURE 2

Site Map

Siltronic Corporation
7200 NW Front Avenue
Portland, Oregon

HAHN AND ASSOCIATES, INC.
Project No. 5237 October 2006

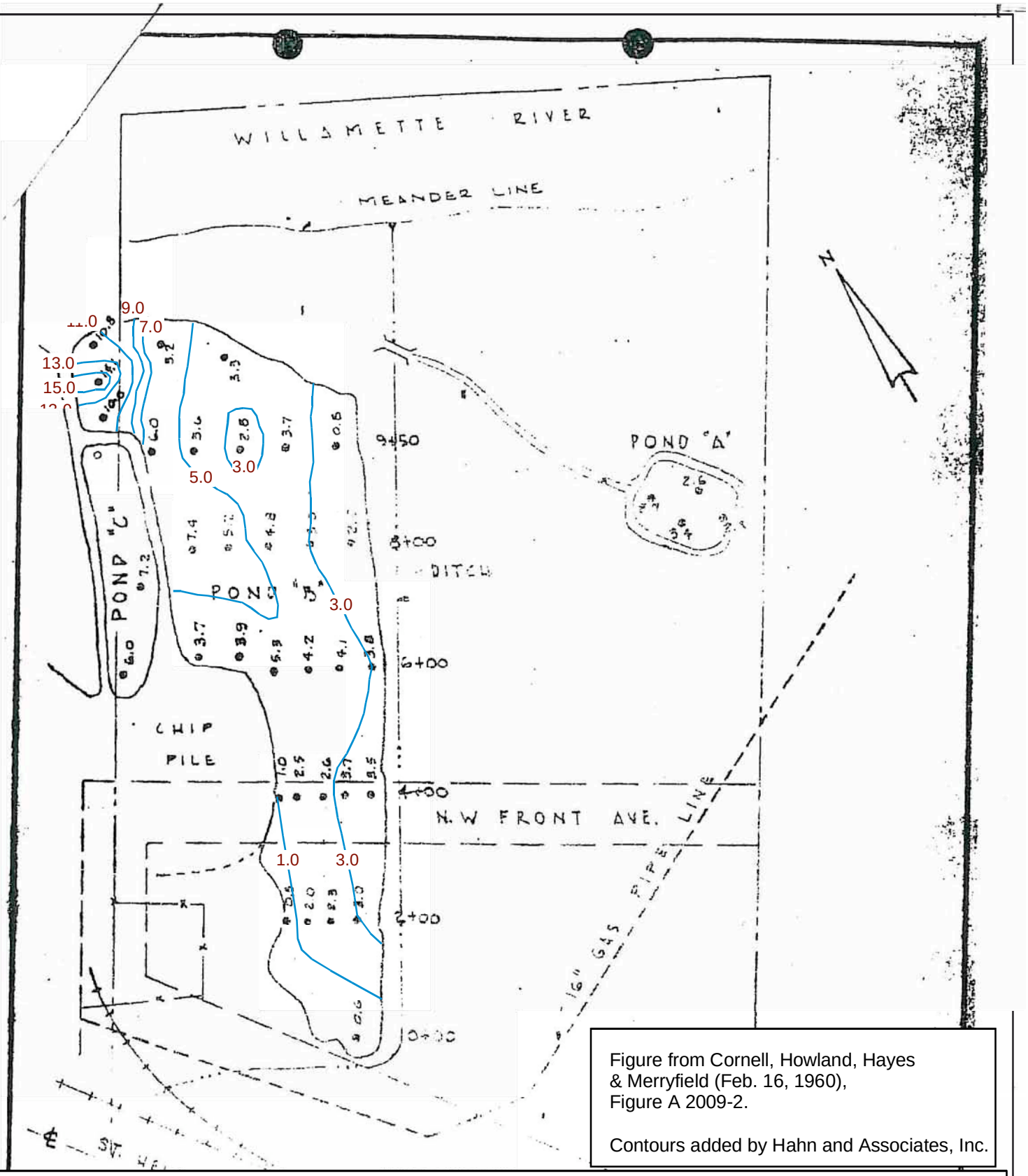


Figure from Cornell, Howland, Hayes & Merryfield (Feb. 16, 1960), Figure A 2009-2.

Contours added by Hahn and Associates, Inc.

LEGEND

- 2.3 Tar Thickness in feet (does not include free wat[illegible] face)
- 3.0 Tar Thickness Isopach (thickness in feet)

0 100 200 400

1"=200' Scale in Feet

FIGURE 3
Historic Tar Thickness (1960)
Siltronic Property
7200 NW Front Avenue
Portland, Oregon

HAHN AND ASSOCIATES, INC.
Project No. 2708-5237 October 2006

WILLAMETTE RIVER

WILLAMETTE RIVER

-40

-40

-40

-40

30

30

50

FORMER CHANNELIZED CREEK DISCHARGE (1913-1951)

FORMER TAR POND OVERFLOW (1951-1956)

FORMER SHELL TRANSFER FACILITIES (1913-1969)

SEWER OUTFALL (1941-1973?)

FORMER DRAINAGE DITCH (1913-1941)

FORMER CHANNELIZED CREEK DISCHARGE (1951-1967)
OVERFLOW POND DISCHARGE (1951-1956)

FORMER WESTERN TRANSPORTATION DOCKS AND STRUCTURES (1930-1956)

DREDGING-INDUCED SHEEN (1990)

STAINING AROUND WESTERN TRANSPORTATION (1919)

SILTRONIC SHORELINE (APPROXIMATE)

GASCO SHORELINE (APPROXIMATE)

ADMINISTRATION BUILDING

CITY OF PORTLAND OUTFALL 22C

FORMER TAR POND OVERFLOW (1951-1956)

FAB 1 BUILDING

SPILL AND TCE UST STORAGE LOCATION

EXCAVATION / DEPRESSION (1955-1956) FILLED BY 1964

SILTRONIC PROPERTY

LOW-ANGLE EFFLUENT POND OVERFLOW AREA (1941-1956) FILLED 1968-1973

FORMER LAMPBLACK PLACEMENT AREA (1955)

SHELL OIL TANK

DITCH (REMOVED 2005)

FORMER TAR SETTLING POND(S) (1941-1956) FILLED BY 1971

ABANDONED SEWER OUTFALL (LOCATION UNKNOWN)

OIL TANK

SEWER OUTFALL (1913-1941?)

FORMER EFFLUENT DISCHARGE DIKE (1913-1971)

FORMER SPENT OXIDE STORAGE AREA

OXIDE BUILDING

BRIQUETTE STORAGE SHED

OXIDE REACTOR AREA

NW NATURAL PROPERTY

STILL

GENERATOR BUILDING

STORAGE HOLDER

WASH ROOM

MACHINERY BUILDING

RETORT AREA

TAR THICKENER

NAPHTHALENE PLANT

PITCH BAY

PITCH POOL

RELIEF HOLDER

HIGH BTU GAS HOLDER

OIL PURIFICATION STILL

FORMER LIGHT OIL PLANT TANK FARM

TAR LOADING

CENTRAL UTILITIES BUILDING

ACID/ SOLVENT STORE

CENTRAL FACILITIES BUILDING

WAREHOUSE

DARK COLORED FILL PLACEMENT 1967-1971

ELECTRICAL SUBSTATION

SPENT OXIDE STORAGE (1952-1966)

FAB 2 BUILDING

OVERALL PROPERTY WAS FILLED BETWEEN 1967 AND 1971

84-INCH CONCRETE PIPE TO WILAMETTE RIVER

16" ABANDONED NATURAL GAS LINE

96" ABANDONED CITY OF PORTLAND SEWER LINE

DARK COLORED FILL PLACEMENT 1967-1971

APPROXIMATE AREA OF 1979 OLYMPIC PIPELINE LEAK INVESTIGATION

UTILITY EASEMENT

PITCH PANS

FAB 1 WTTP

FAB 2 WTTP

DARK COLORED FILL PLACEMENT 1967-1971

FORMER CREEK

FORMER N. DOANE LAKE REMNANT

48" CULVERT PIPE

DOANE CREEK (EPHEMERAL)

SILTRONIC PROPERTY LINE

NORTHWEST DRAINAGE POND

48" PIPE TO NORTHWEST DRAINAGE POND

NORTH DOANE LAKE

NW ST. HELENS ROAD

N

LEGEND

Property Line (Approximate)

Current Site Feature

Historical Site Feature

HAHN AND ASSOCIATES, INC.

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PORTLAND, OREGON 97209
503-796-0717

1"=200'

0 100' 200' 400'
Scale in Feet

Project No. 2708-5237 REV. OCT. 2006

FIGURE 4
Historic Operational Areas and Features

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.

LEGEND

- Monitoring Well
- Soil Boring
- Property Line (Approximate)

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1"=200' 0 100' 200' 400' Scale in Feet

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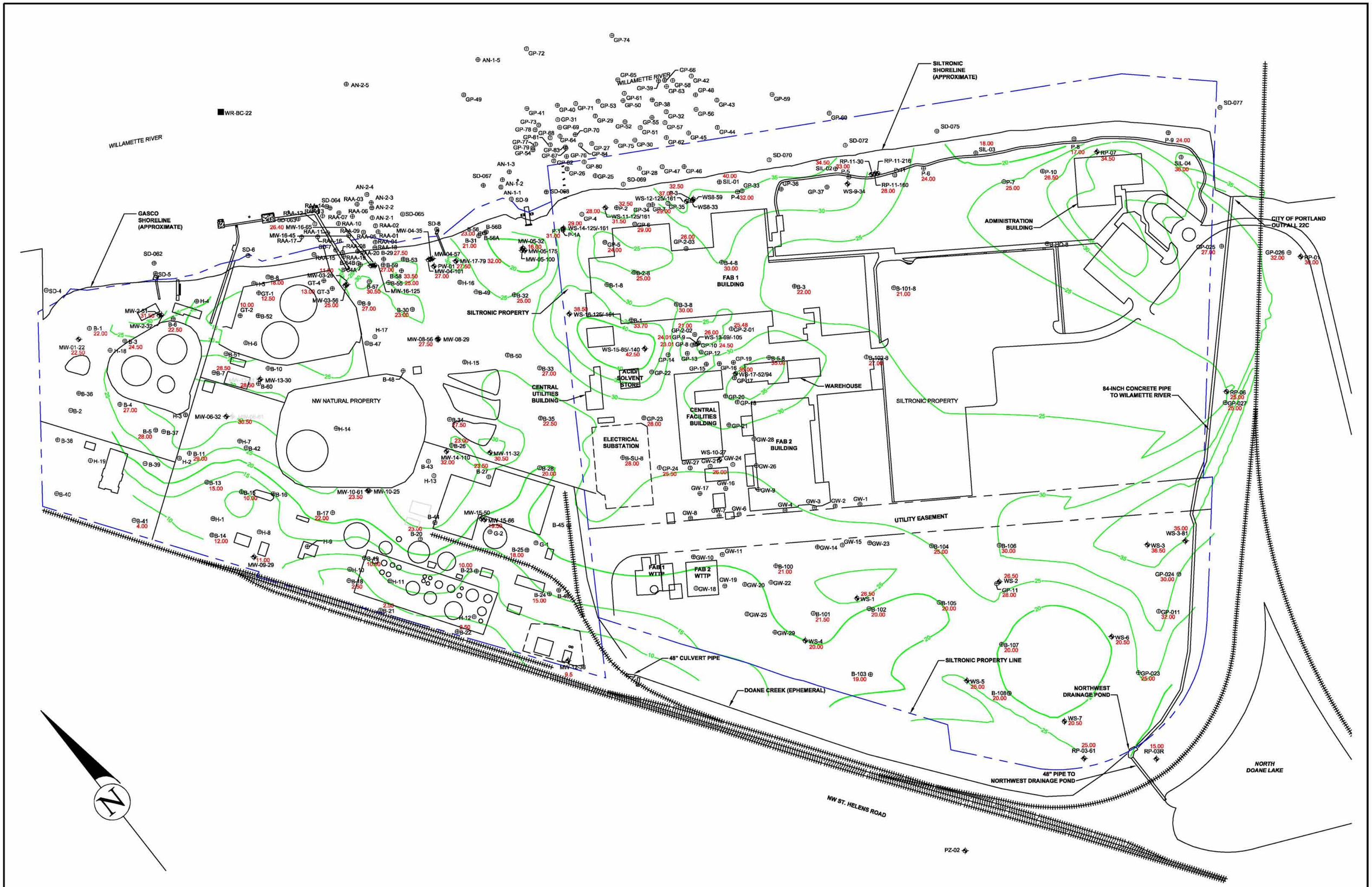
FIGURE 5
Soil Boring and Monitoring Well Locations with Historic Operational Areas and Features

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.



CONTOUR INTERVAL = 5 FEET

LEGEND

- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- Isocontour Line - Surficial Fill Thickness
- 5.00 Surficial Fill Thickness in feet

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0 100' 200' 400'
1"=200' Scale in Feet

Project No. 2708-5237 REV. OCT. 2006

FIGURE 6
SURFICIAL FILL THICKNESS

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

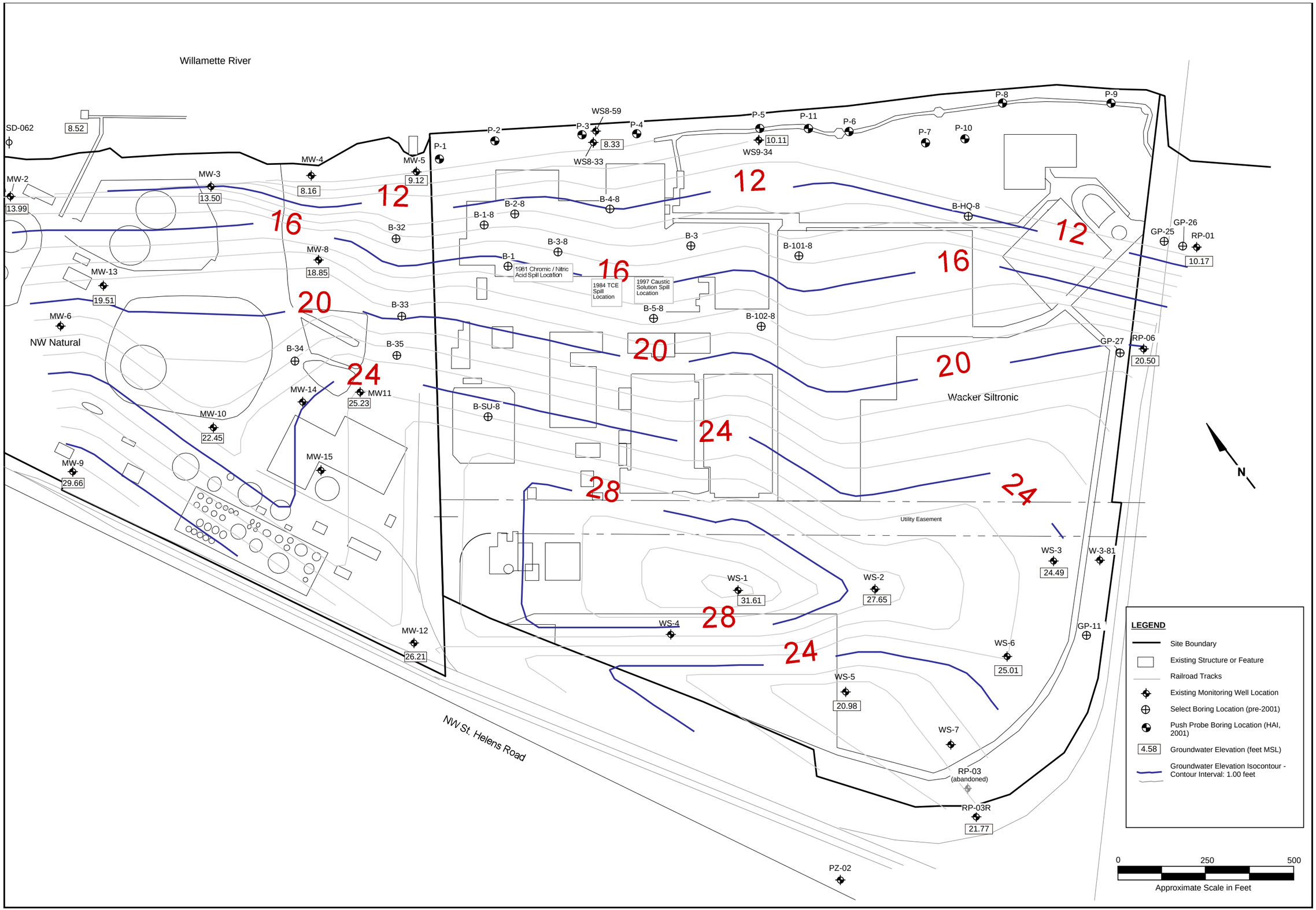


Figure 7

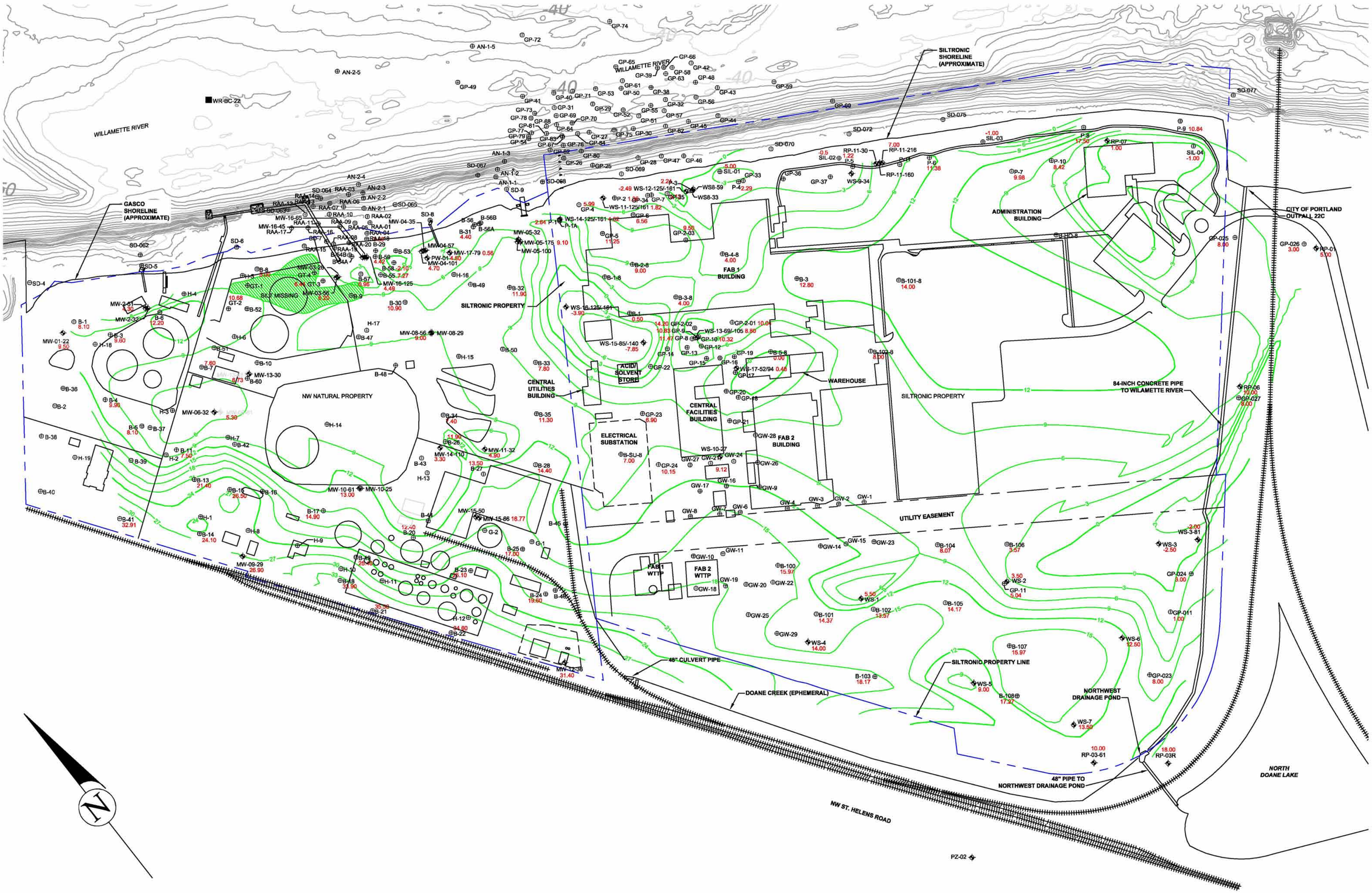
Groundwater Elevation Map - Surficial Fill Wells
April 2, 2002

Remedial Investigation
NW Natural Gasco / Siltronic Corporation Properties
Portland, Oregon

HAHN & ASSOCIATES, INC.
ENVIRONMENTAL MANAGEMENT
434 NW SIXTH AVENUE, SUITE 203
PORTLAND, OREGON 97209
503/796-0717

June 2006

Project No. 2708



CONTOUR INTERVAL = 3 FEET

LEGEND

- Monitoring Well
- Soil Boring
- 31.40 Silt Surface Elevation - Feet msl (City of Portland Datum)
- Property Line (Approximate)
- Isocontour Line - Alluvial Silt Surface Elevation

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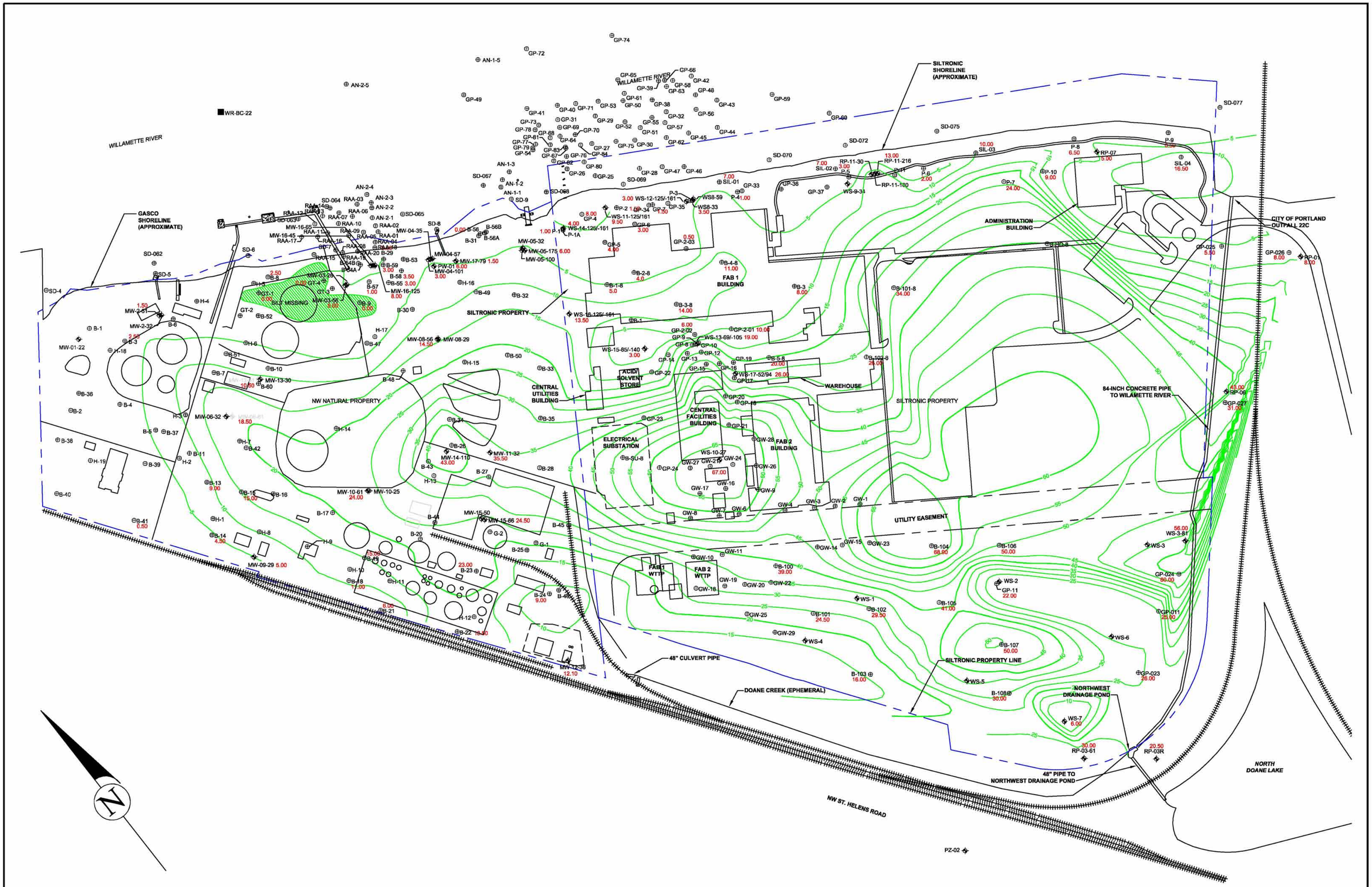
1"=200' 0 100' 200' 400' Scale in Feet

Project No. 2708-5237 REV. OCT. 2006

FIGURE 8
Alluvial Silt Surface Elevation

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.



CONTOUR INTERVAL = 5 FEET

LEGEND

- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- Isocontour Line - Alluvial Silt Unit Thickness
- 2.50 Silt Unit Thickness in feet

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0 100' 200' 400'
1"=200' Scale in Feet

Project No. 2708-5237 REV. OCT. 2006

FIGURE 9
Alluvial Silt Unit Thickness

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

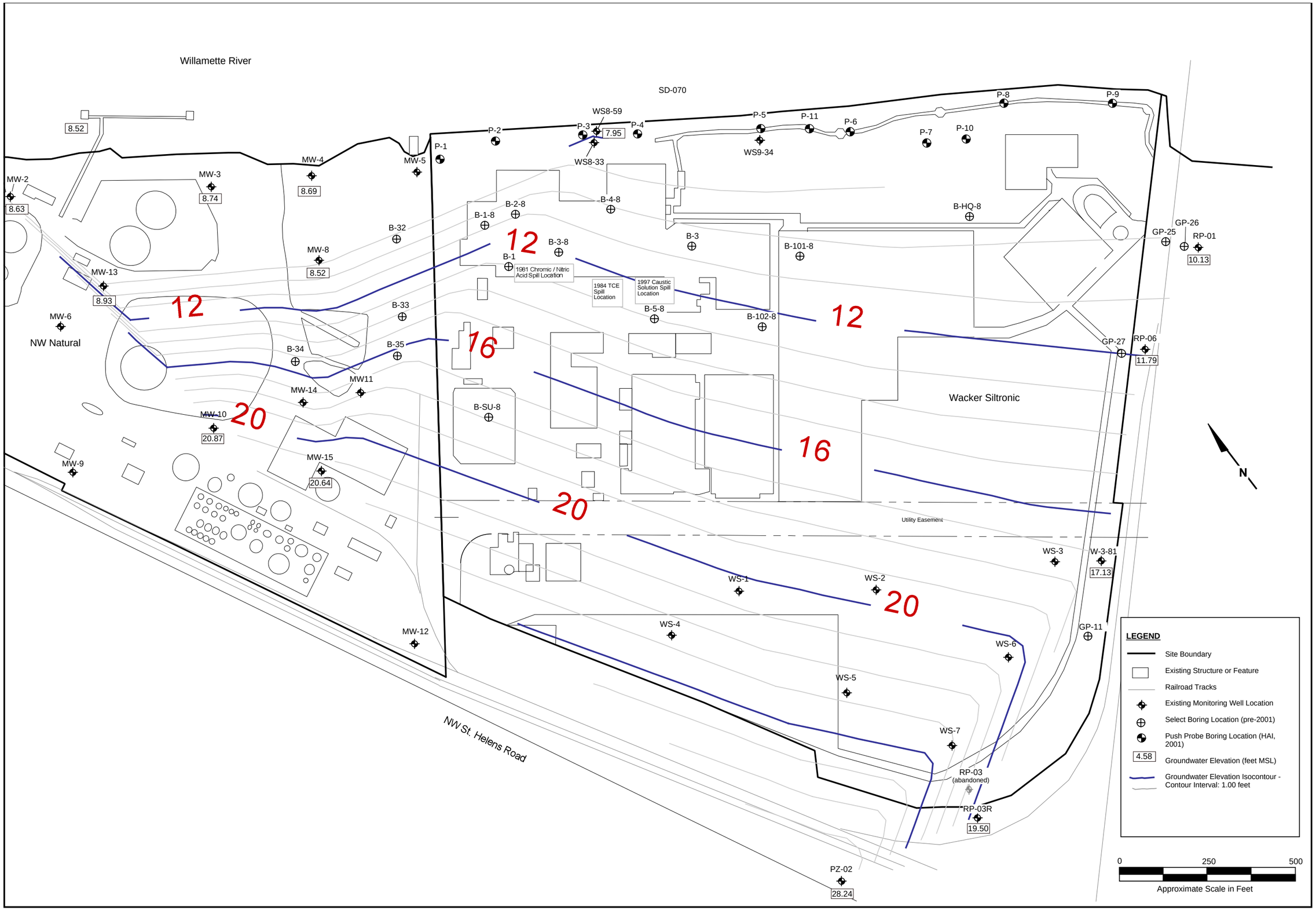

Figure 10

Groundwater Elevation Map - Alluvial WBZ Wells to 85 feet bgs (Upper)
April 2, 2002

Remedial Investigation
NW Natural - Gasco / Siltronic Corporation Properties
Portland, Oregon

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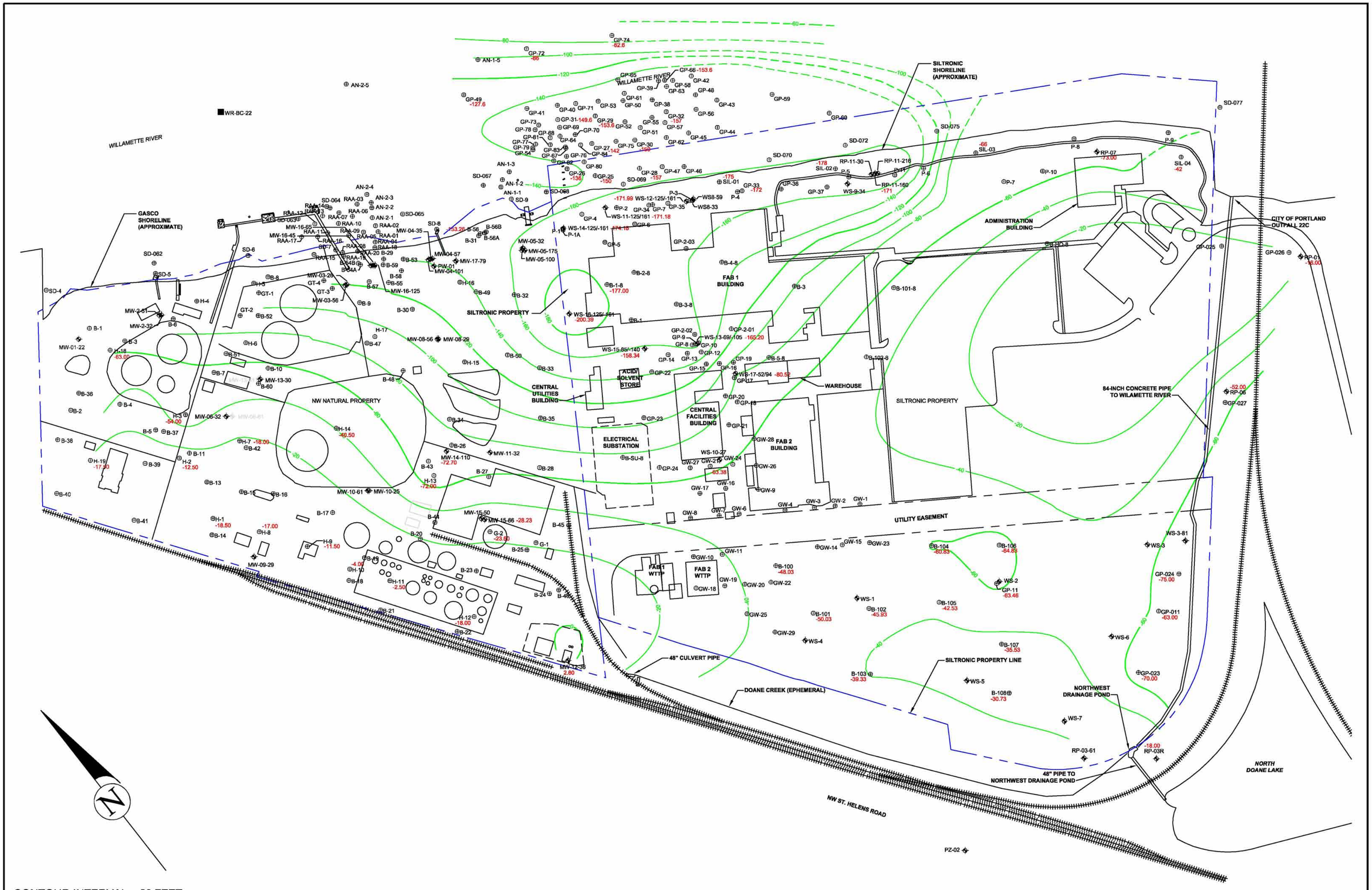
ENVIRONMENTAL MANAGEMENT
434 NW SIXTH AVENUE, SUITE 203
PORTLAND, OREGON 97209
503/796-0717

June 2006

Project No. 2708



CONTOUR INTERVAL = 20 FEET

LEGEND

- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- Isocontour Line - Bedrock Surface Elevation
- -72.0 Top of Bedrock Elevation - Feet msl (City of Portland Datum)

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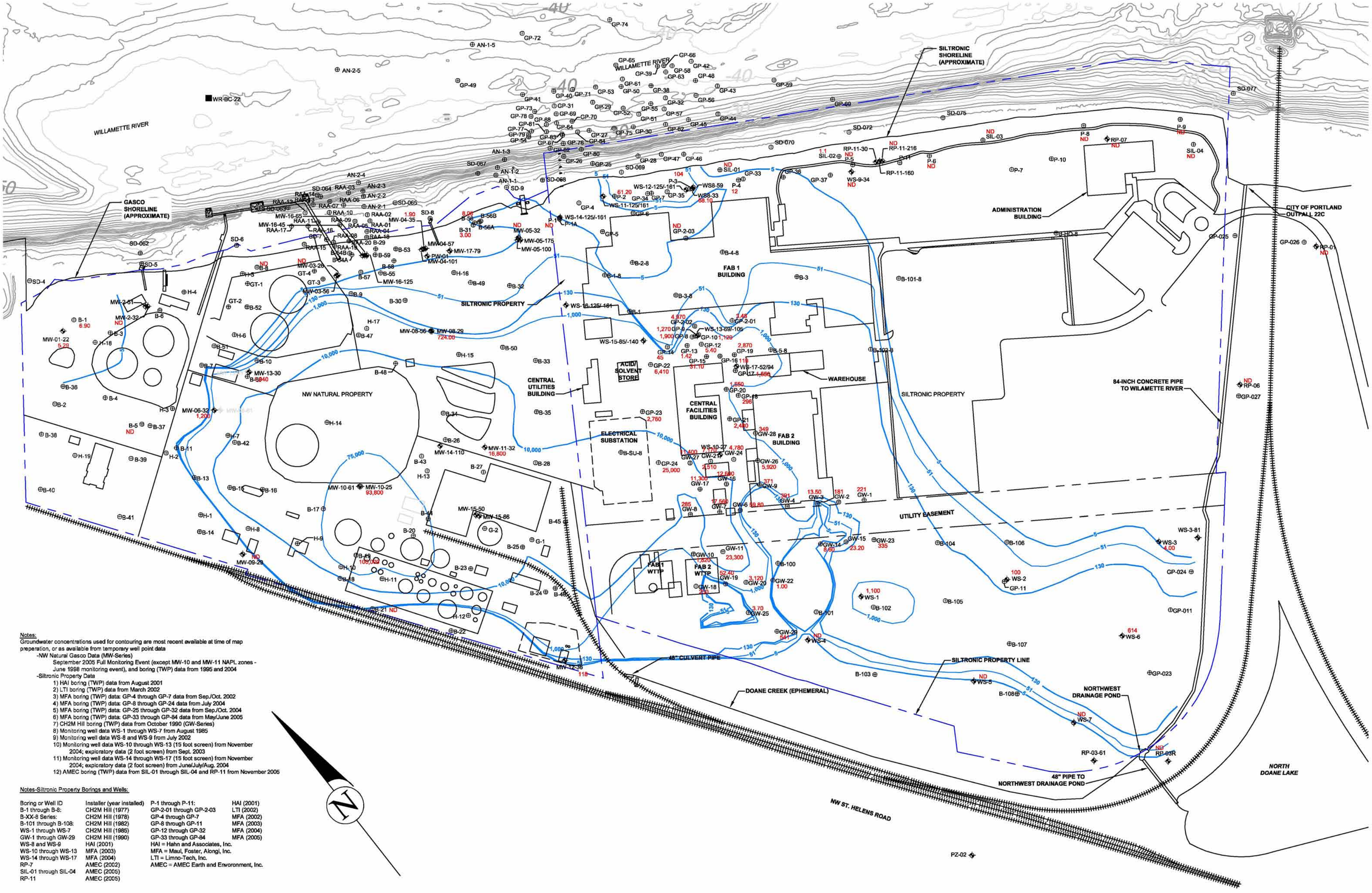
1"=200' 0 100' 200' 400' Scale in Feet

Project No. 2708-5237 REV. OCT. 2006

FIGURE 11
BEDROCK SURFACE ELEVATION

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.



Notes:
Groundwater concentrations used for contouring are most recent available at time of map preperation, or as available from temporary well point data
- -NW Natural Gasco Data (MW-Series)
  - September 2005 Full Monitoring Event (except MW-10 and MW-11 NAPL zones - June 1998 monitoring event), and boring (TWP) data from 1995 and 2004
- -Siltronic Property Data
  1) HAI boring (TWP) data from August 2001
  2) LTI boring (TWP) data from March 2002
  3) MFA boring (TWP) data: GP-4 through GP-7 data from Sep./Oct. 2002
  4) MFA boring (TWP) data: GP-8 through GP-24 data from July 2004
  5) MFA boring (TWP) data: GP-25 through GP-32 data from Sep./Oct. 2004
  6) MFA boring (TWP) data: GP-33 through GP-84 data from May/June 2005
  7) CH2M Hill boring (TWP) data from October 1990 (GW-Series)
  8) Monitoring well data WS-1 through WS-7 from August 1985
  9) Monitoring well data WS-8 and WS-9 from July 2002
  10) Monitoring well data WS-10 through WS-13 (15 foot screen) from November 2004; exploratory data (2 foot screen) from Sept. 2003
  11) Monitoring well data WS-14 through WS-17 (15 foot screen) from November 2004; exploratory data (2 foot screen) from June/July/Aug. 2004
  12) AMEC boring (TWP) data from SIL-01 through SIL-04 and RP-11 from November 2005

Notes-Siltronic Property Borings and Wells:

Boring or Well ID	Installer (year installed)	P-1 through P-11:	HAI (2001)
B-1 through B-8:	CH2M Hill (1977)	GP-2-01 through GP-2-03	LTI (2002)
B-XX-8 Series:	CH2M Hill (1978)	GP-4 through GP-7	MFA (2002)
B-101 through B-108:	CH2M Hill (1982)	GP-8 through GP-11	MFA (2003)
WS-1 through WS-7	CH2M Hill (1985)	GP-12 through GP-32	MFA (2004)
GW-1 through GW-29	CH2M Hill (1990)	GP-33 through GP-84	MFA (2005)
WS-8 and WS-9	HAI (2001)	HAI = Hahn and Associates, Inc.	
WS-10 through WS-13	MFA (2003)	MFA = Maul, Foster, Alongi, Inc.	
WS-14 through WS-17	MFA (2004)	LTI = Limno-Tech, Inc.	
RP-7	AMEC (2002)	AMEC = AMEC Earth and Enviornment, Inc.	
SIL-01 through SIL-04	AMEC (2005)		
RP-11	AMEC (2005)		

LEGEND
- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- Estimated Isoconcentration of chemical in groundwater (0.2)
- 0.02 Chemical concentration in groundwater in parts per billion (µg/L)

HAHN AND ASSOCIATES, INC.
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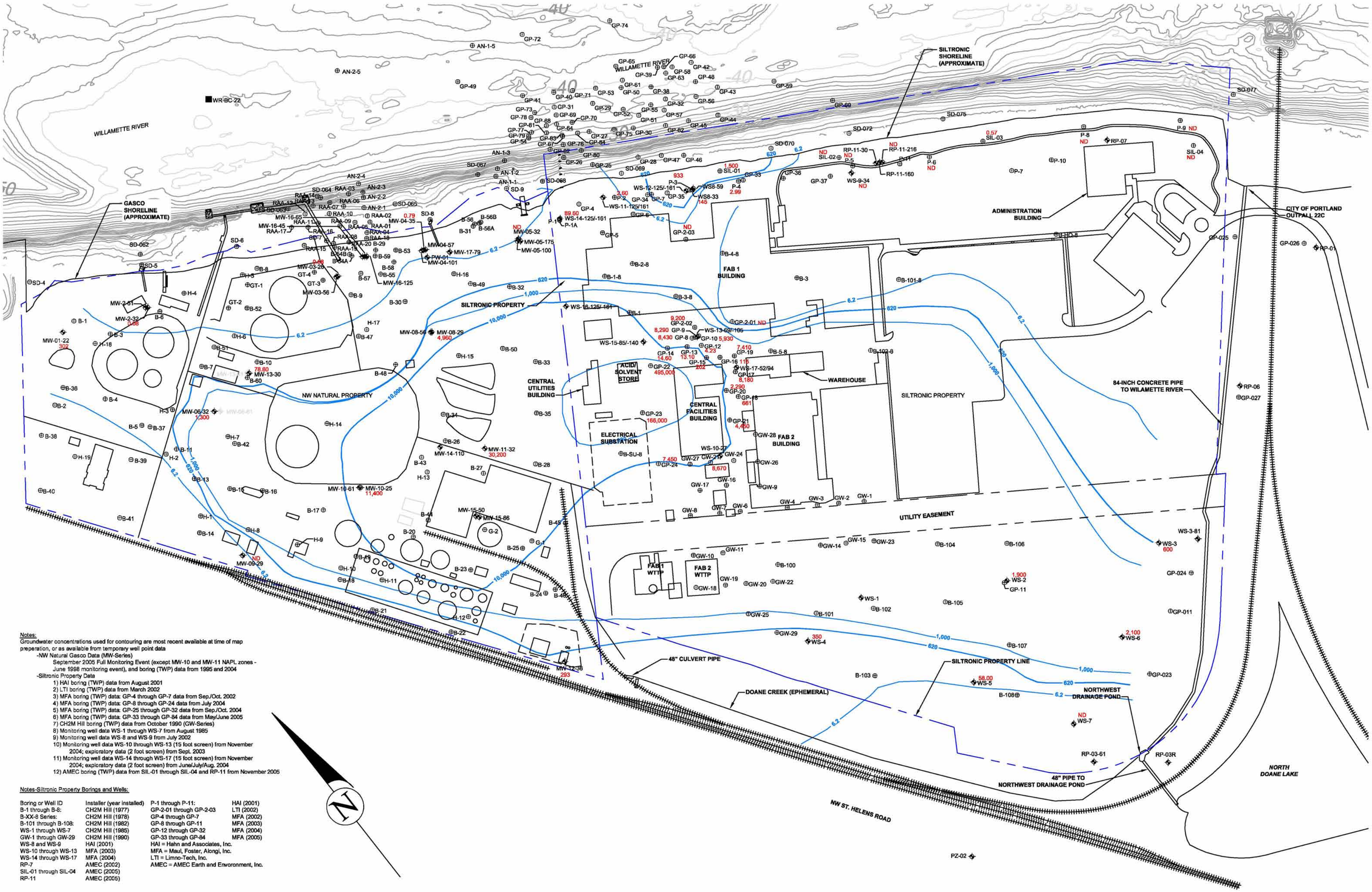
0 100' 200' 400'
1"=200' Scale in Feet

Project No. 2708-5237 REV. OCT. 2006

FIGURE 12
Benzene Concentrations in Groundwater:
Surficial Fill Water-Bearing Zone

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.



Notes:
Groundwater concentrations used for contouring are most recent available at time of map preperation, or as available from temporary well point data
- -NW Natural Gasco Data (MW-Series)
  - September 2005 Full Monitoring Event (except MW-10 and MW-11 NAPL zones - June 1998 monitoring event), and boring (TWP) data from 1995 and 2004
- -Siltronic Property Data
  1) HAI boring (TWP) data from August 2001
  2) LTI boring (TWP) data from March 2002
  3) MFA boring (TWP) data: GP-4 through GP-7 data from Sep./Oct. 2002
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Notes-Siltronic Property Borings and Wells:

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RP-7	AMEC (2002)	AMEC = AMEC Earth and Environment, Inc.	
SIL-01 through SIL-04	AMEC (2005)		
RP-11	AMEC (2005)		

LEGEND
- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- 0.2 Estimated Isoconcentration of chemical in groundwater
- 0.02 Chemical concentration in groundwater in parts per billion (µg/L)

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1"=200' 0 100' 200' 400' Scale in Feet

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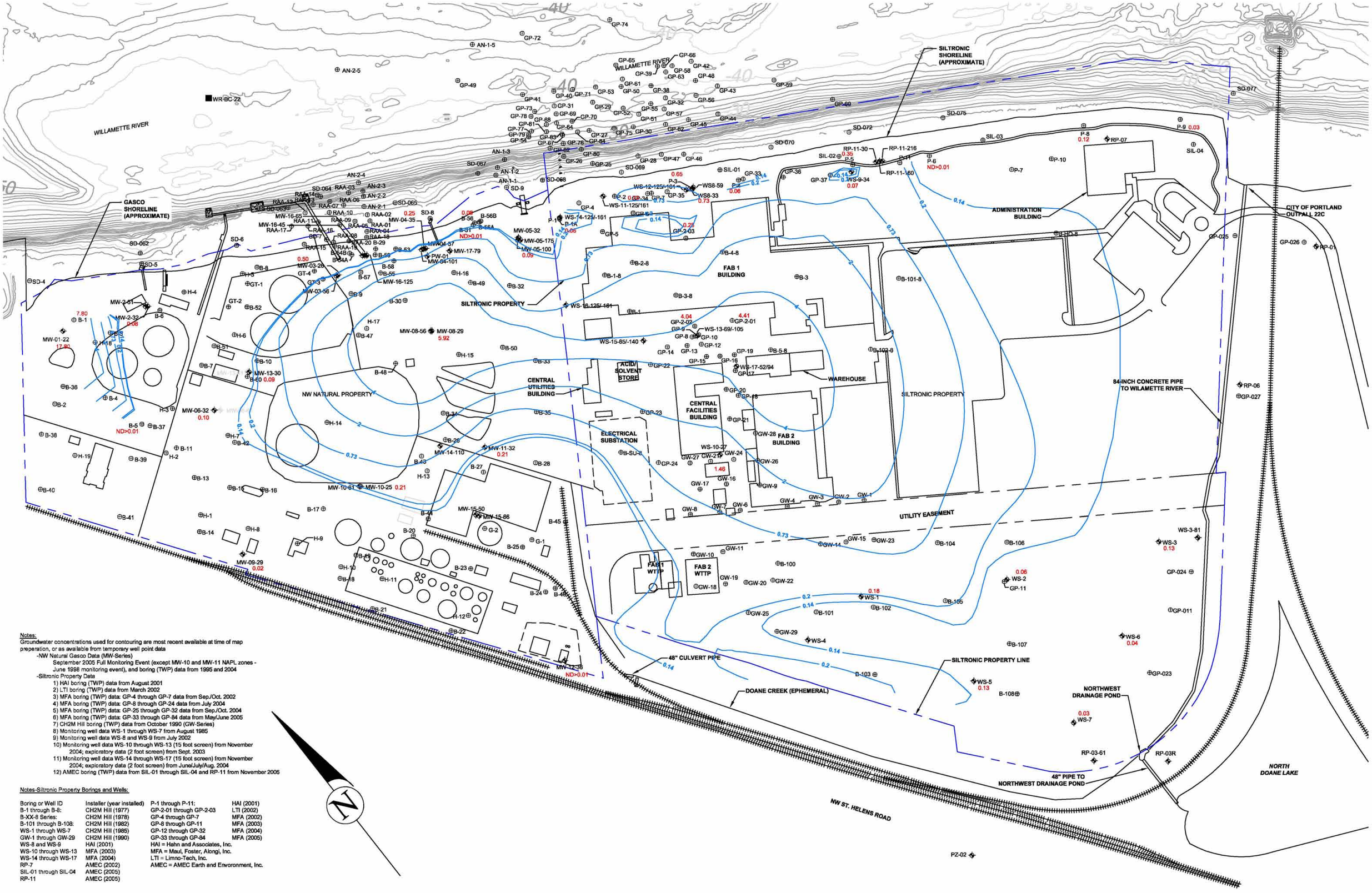
FIGURE 13
Naphthalene Concentrations in Groundwater:
Surficial Fill Water-Bearing Zone

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.



Notes:
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RP-7	AMEC (2002)	AMEC = AMEC Earth and Enviornment, Inc.	
SIL-01 through SIL-04	AMEC (2005)		
RP-11	AMEC (2005)		

LEGEND

- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- Estimated Isoconcentration of chemical in groundwater
- 0.02 Cyanide concentration in groundwater in parts per million (mg/L)

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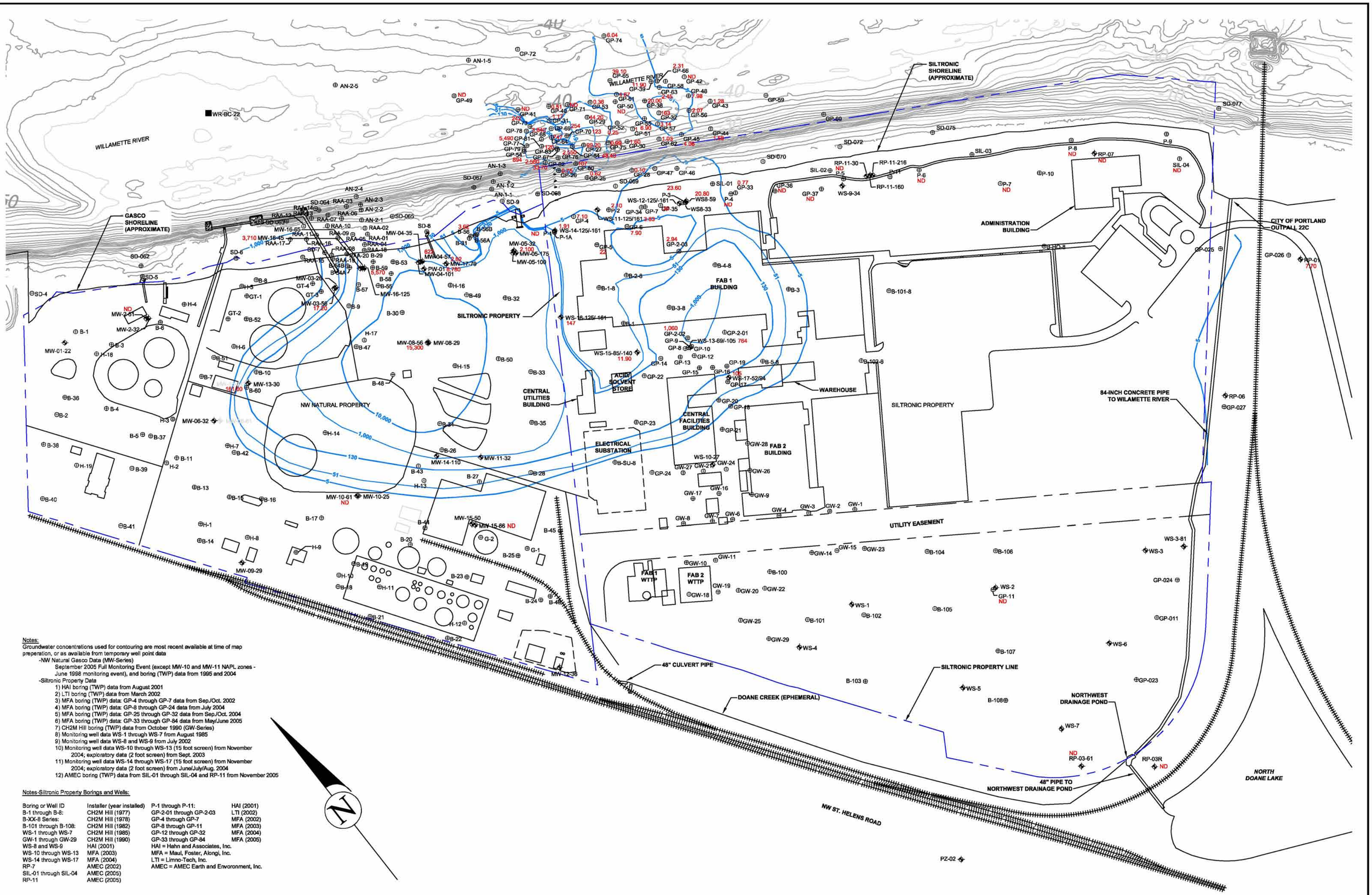
FIGURE 14
Total Cyanide Concentrations in Groundwater:
Surficial Fill Water-Bearing Zone

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.



Notes:
Groundwater concentrations used for contouring are most recent available at time of map preperation, or as available from temporary well point data

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Notes-Siltronic Property Borings and Wells:

Boring or Well ID	Installer (year installed)	P-1 through P-11:	HAI (2001)
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WS-1 through WS-7	CH2M Hill (1985)	GP-12 through GP-32	MFA (2004)
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RP-7	AMEC (2002)	AMEC = AMEC Earth and Envoronment, Inc.	
SIL-01 through SIL-04	AMEC (2005)		
RP-11	AMEC (2005)		

LEGEND

- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- Estimated Isoconcentration of chemical in groundwater

0.02 Chemical concentration in groundwater in parts per billion (µg/L)

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1"=200' 0 100' 200' 400' Scale in Feet

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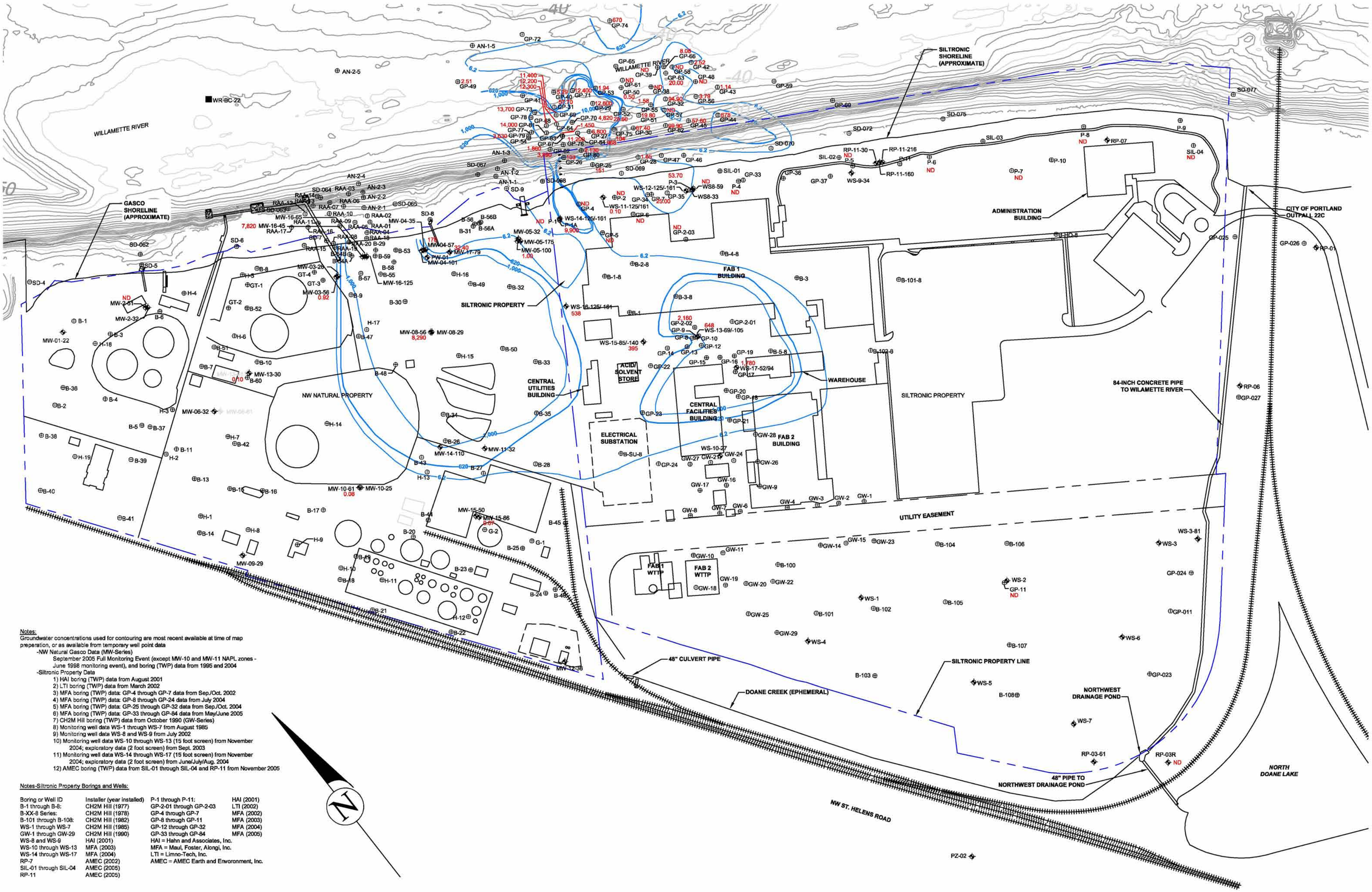
FIGURE 15
Benzene Concentrations in Groundwater:
Alluvial Water-Bearing Zone
Shallower than -40 feet elevation msl

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.



Notes:
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Notes-Siltronic Property Borings and Wells:

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RP-7	AMEC (2002)	AMEC = AMEC Earth and Enviornment, Inc.	
SIL-01 through SIL-04	AMEC (2005)		
RP-11	AMEC (2005)		

LEGEND
- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- Estimated Isoconcentration of chemical in groundwater
- 0.02 Chemical concentration in groundwater in parts per billion (µg/L)

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1"=200' 0 100' 200' 400' Scale in Feet

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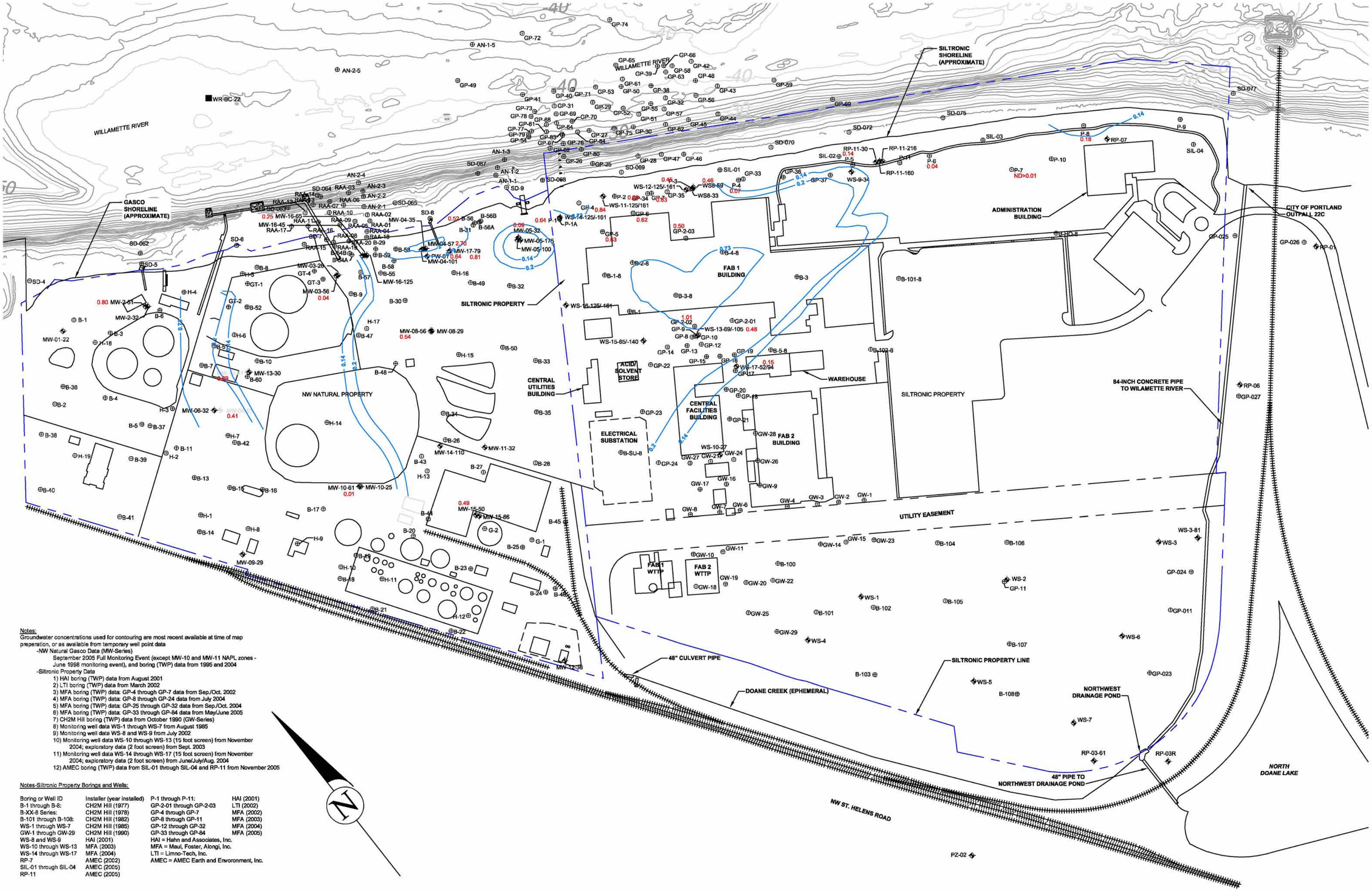
FIGURE 16
Naphthalene Concentrations in Groundwater:
Alluvial Water-Bearing Zone
Shallower than -40 feet elevation msl

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.



Notes:
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RP-11	AMEC (2005)		

LEGEND
- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- Estimated Isoconcentration of chemical in groundwater
- 0.02 Cyanide concentration in groundwater in parts per million (mg/L)

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1"=200' 0 100' 200' 400' Scale in Feet

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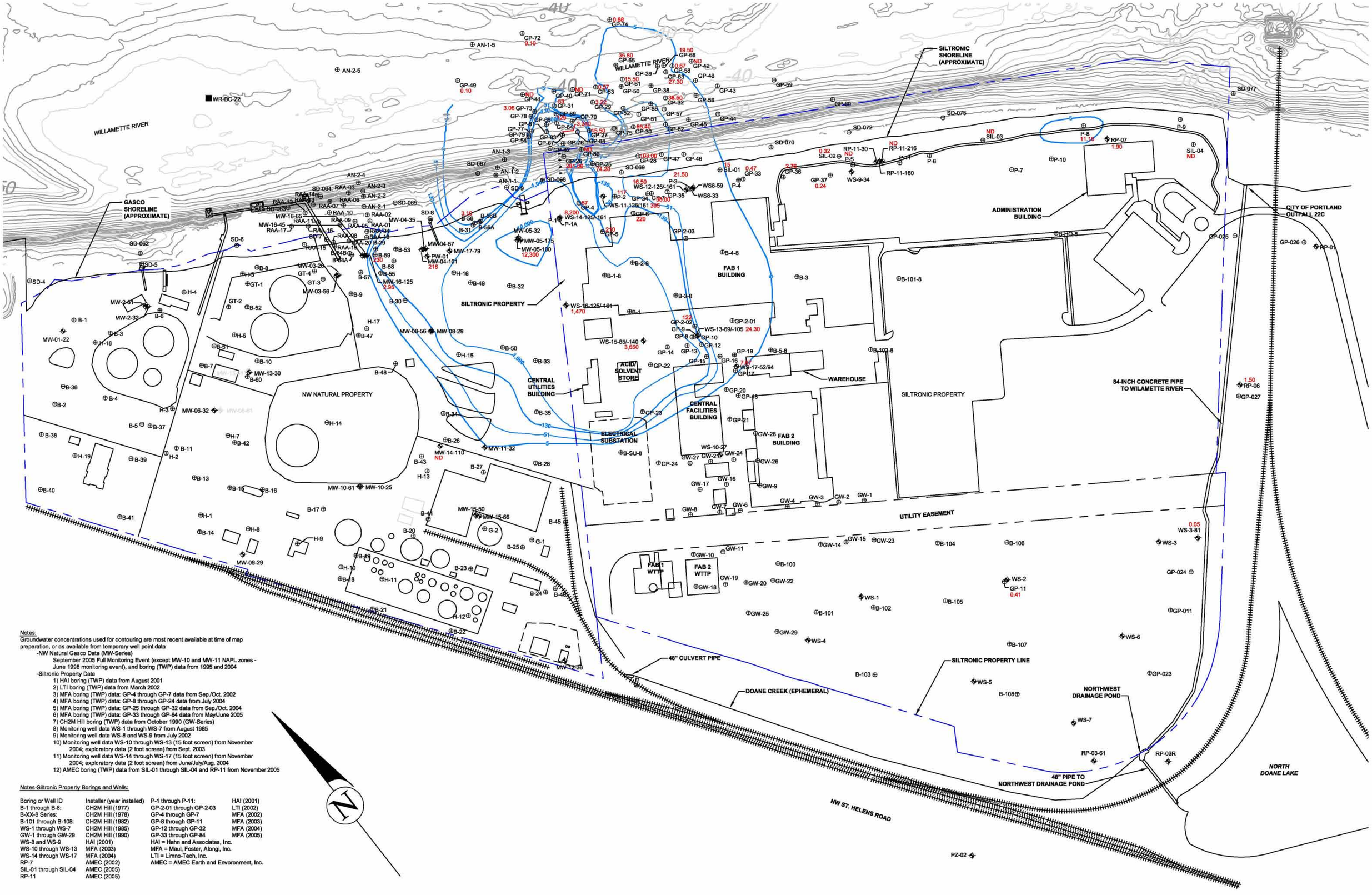
FIGURE 17
Total Cyanide Concentrations in Groundwater:
Alluvial Water-Bearing Zone
Shallower than -40 feet elevation msl

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.



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RP-11	AMEC (2005)		

LEGEND
- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- Estimated Isoconcentration of chemical in groundwater
- 0.02 Chemical concentration in groundwater in parts per billion (µg/L)

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1"=200' 0 100' 200' 400' Scale in Feet

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FIGURE 18
Benzene Concentrations in Groundwater:
Alluvial Water-Bearing Zone
Deeper than -40 feet elevation msl

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.

Notes:
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SIL-01 through SIL-04	AMEC (2005)		
RP-11	AMEC (2005)		

LEGEND

- Monitoring Well
- Soil Boring
- Property Line (Approximate)
- Estimated Isoconcentration of chemical in groundwater (0.2)
- 0.02 Chemical concentration in groundwater in parts per billion (µg/L)

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1"=200' 0 100' 200' 400' Scale in Feet

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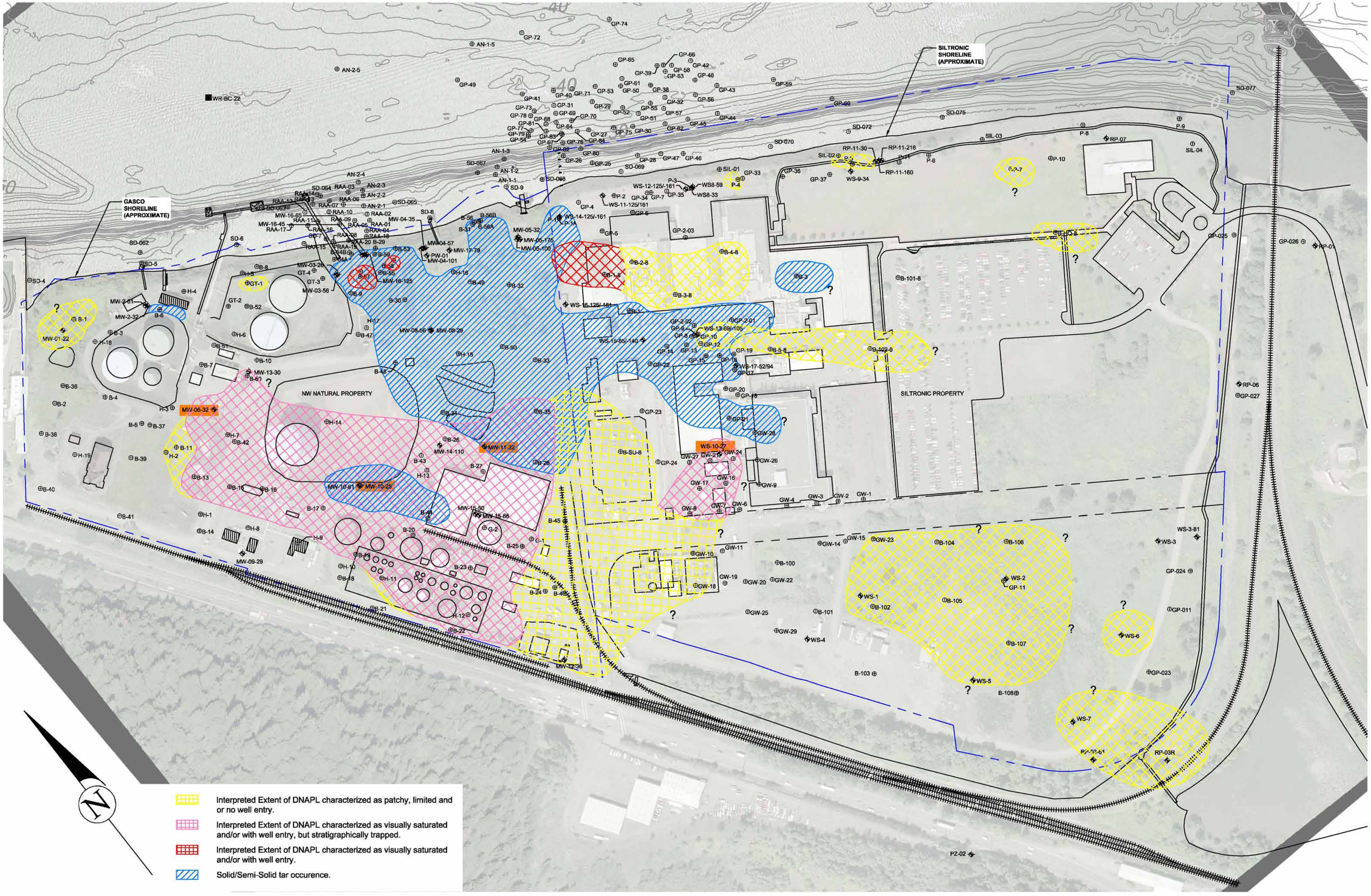
FIGURE 19
Naphthalene Concentrations in Groundwater:
Alluvial Water-Bearing Zone
Deeper than -40 feet elevation msl

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.



LEGEND

- Monitoring Well
- Soil Boring
- DNAPL In Well
- Approximate Property Line

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1"=200' 0 100' 200' 400' Scale in Feet

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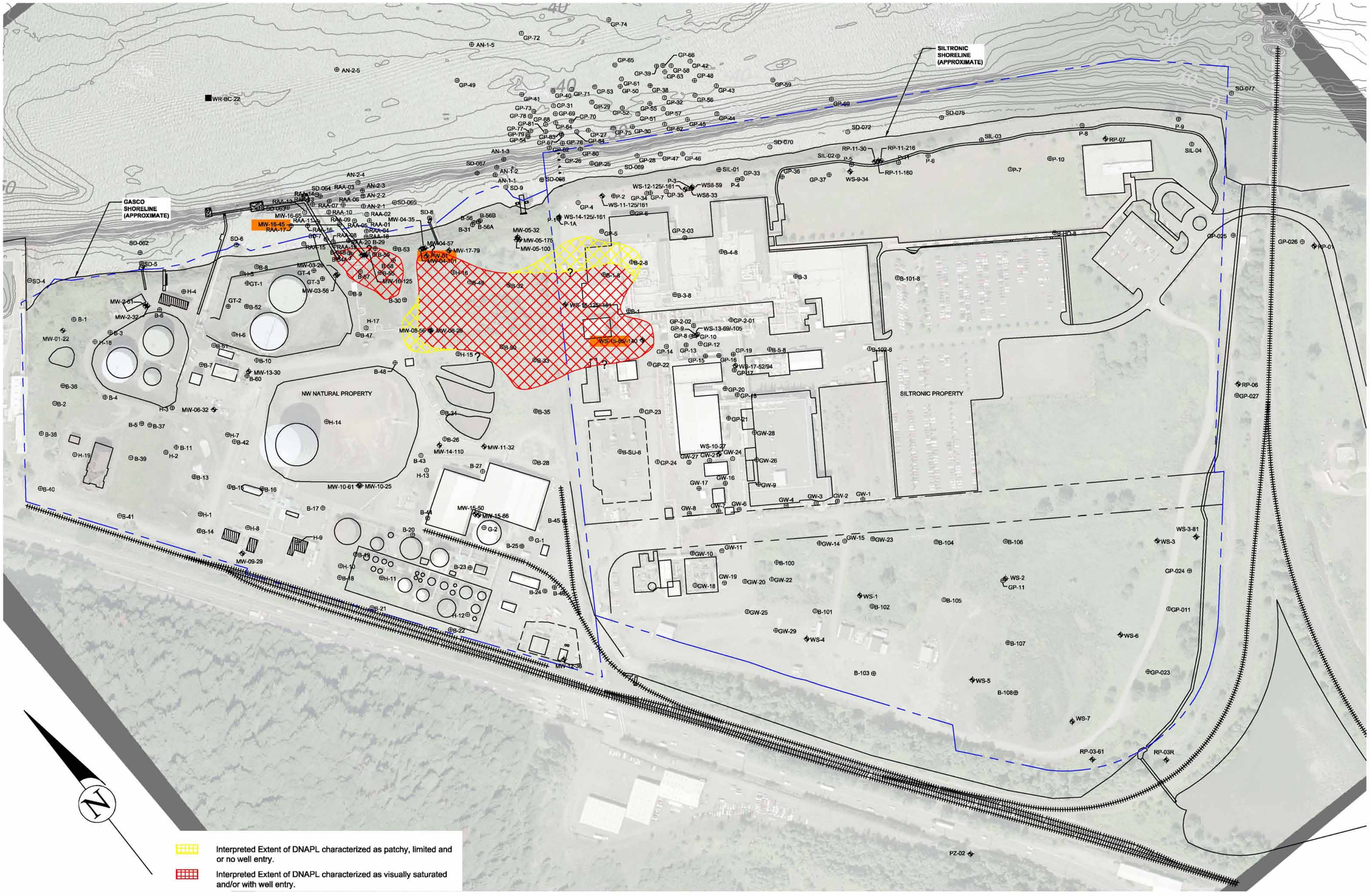
FIGURE 20
ESTIMATED DNAPL DISTRIBUTION
SURFICIAL FILL UNIT

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Borings within outlined areas identified the presence of DNAPL and/or tar at some depth or depth interval within the fill unit. Tables 2 and 3 of *Summary Report - Former MGP Operations and DNAPL Occurrence* (HAI, November 2005) provide a description of the DNAPL or tar presence at each boring.



LEGEND

- Monitoring Well
- Soil Boring
- DNAPL In Well
- Approximate Property Line

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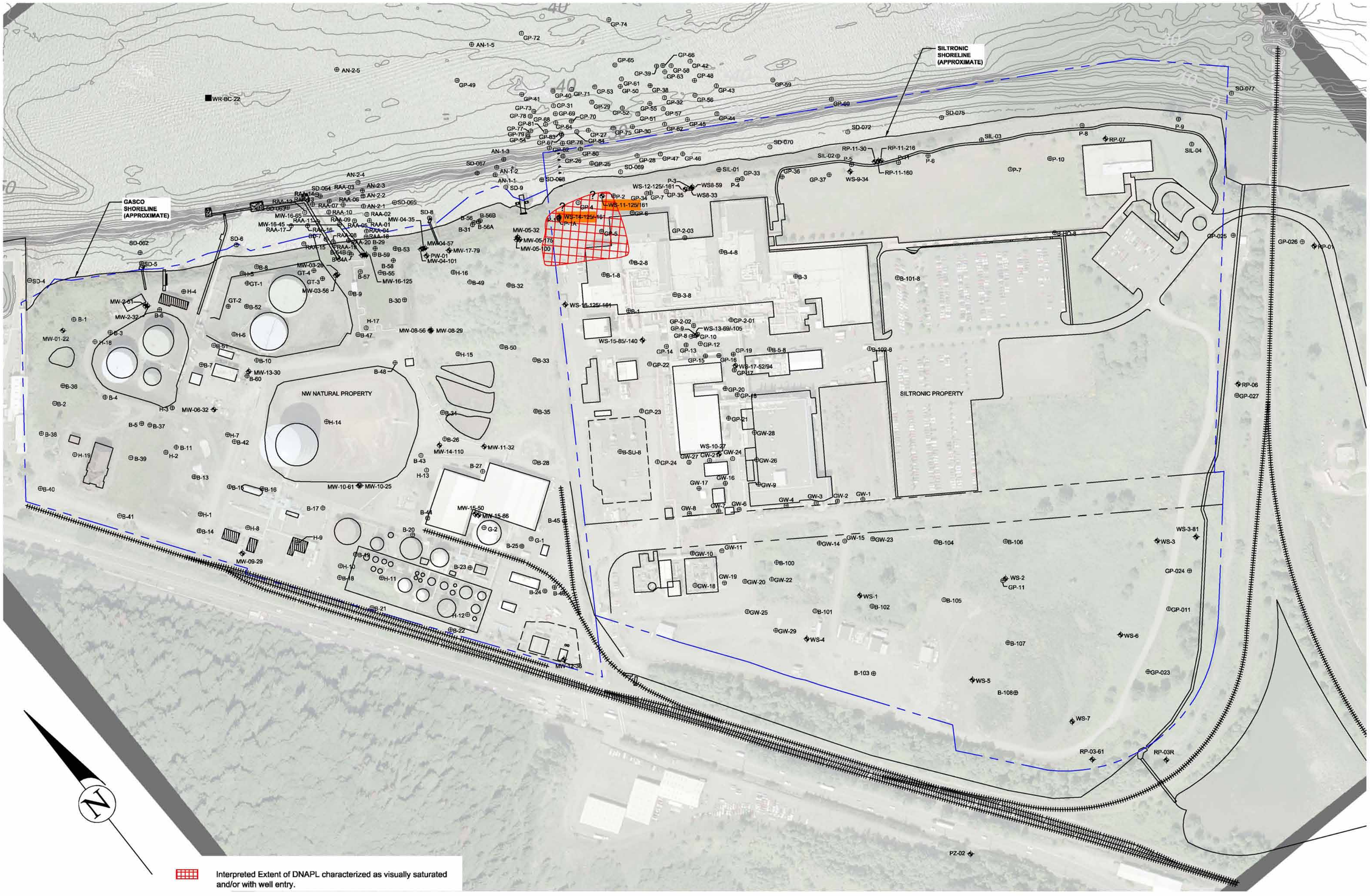
0 100' 200' 400'
1"=200' Scale in Feet

Project No. 2708-5237 REV. OCT. 2006

FIGURE 21
ESTIMATED DNAPL DISTRIBUTION
BELOW THE SILT UNIT AND SHALLOWER
THAN 100' BGS

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Borings within outlined areas identified the presence of DNAPL at some depth or depth interval within the Alluvial water-bearing zone at depths shallower than 100' bgs. Tables 2 and 3 of *Summary Report - Former MGP Operations and DNAPL Occurrence* (HAI, November 2005) provide a description of the DNAPL presence at each boring.



LEGEND

- Monitoring Well
- Soil Boring
- DNAPL In Well
- Approximate Property Line

HAHN AND ASSOCIATES, INC.

ENVIRONMENTAL CONSULTANTS
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PORTLAND, OREGON 97209
503-796-0717

0 100' 200' 400'
1"=200' Scale in Feet

Project No. 2708-5237 REV. OCT. 2006

FIGURE 22
ESTIMATED DNAPL DISTRIBUTION BELOW THE SILT UNIT AND DEEPER THAN 100' BGS

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Borings within outlined areas identified the presence of DNAPL at some depth or depth interval within the Alluvial water-bearing zone at depths deeper than 100' bgs. Tables 2 and 3 of *Summary Report - Former MGP Operations and DNAPL Occurrence* (HAI, November 2005) provide a description of the DNAPL presence at each boring.

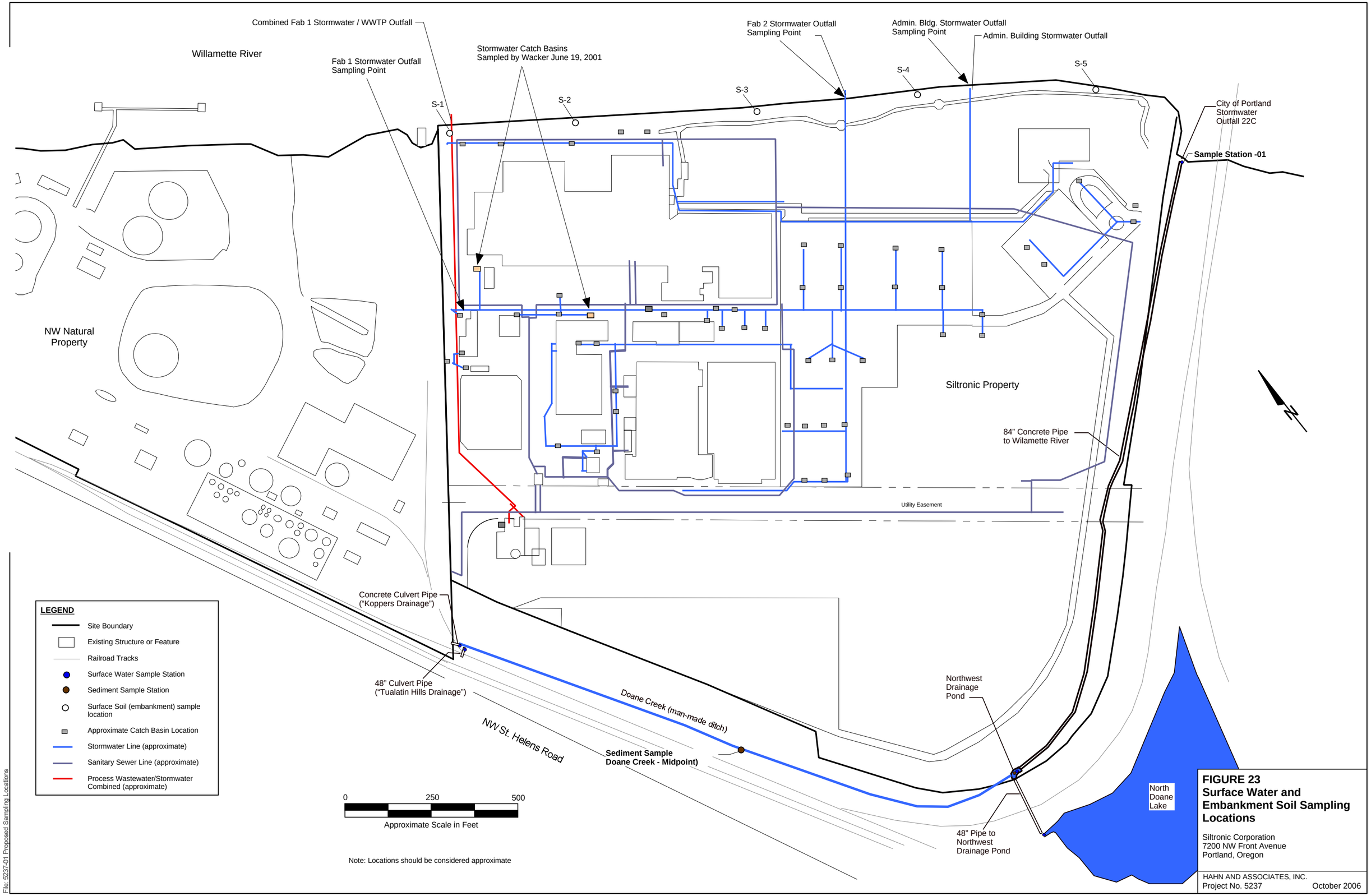
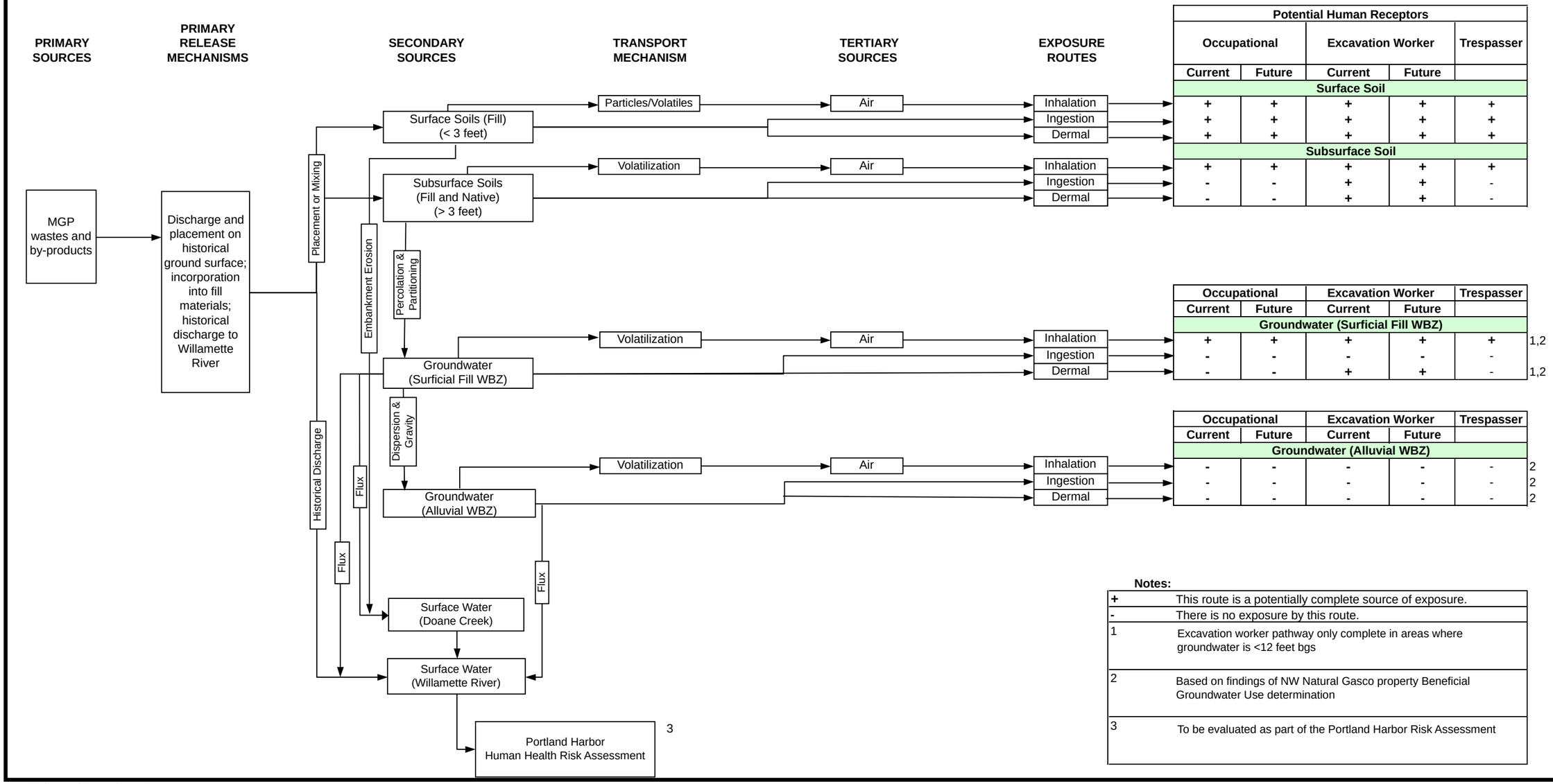


FIGURE 23
Surface Water and Embankment Soil Sampling Locations

Siltronic Corporation
7200 NW Front Avenue
Portland, Oregon

HAHN AND ASSOCIATES, INC.
Project No. 5237 October 2006

FIGURE 24
Preliminary Human Health Conceptual Site Model
NW Natural RI Activities, Siltronic Property

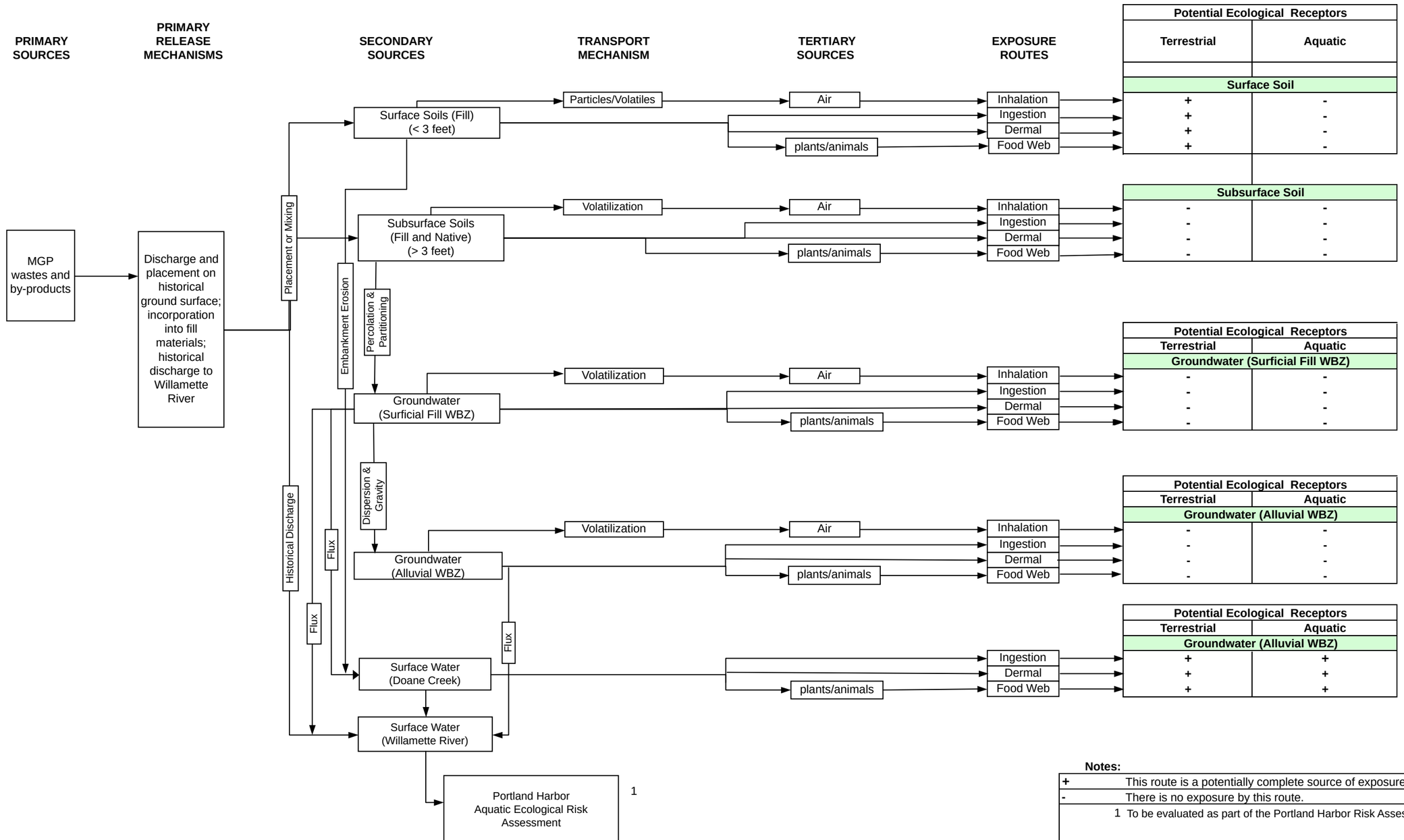


Notes:

+	This route is a potentially complete source of exposure.
-	There is no exposure by this route.
1	Excavation worker pathway only complete in areas where groundwater is <12 feet bgs
2	Based on findings of NW Natural Gasco property Beneficial Groundwater Use determination
3	To be evaluated as part of the Portland Harbor Risk Assessment

Hahn and Associates, Inc.

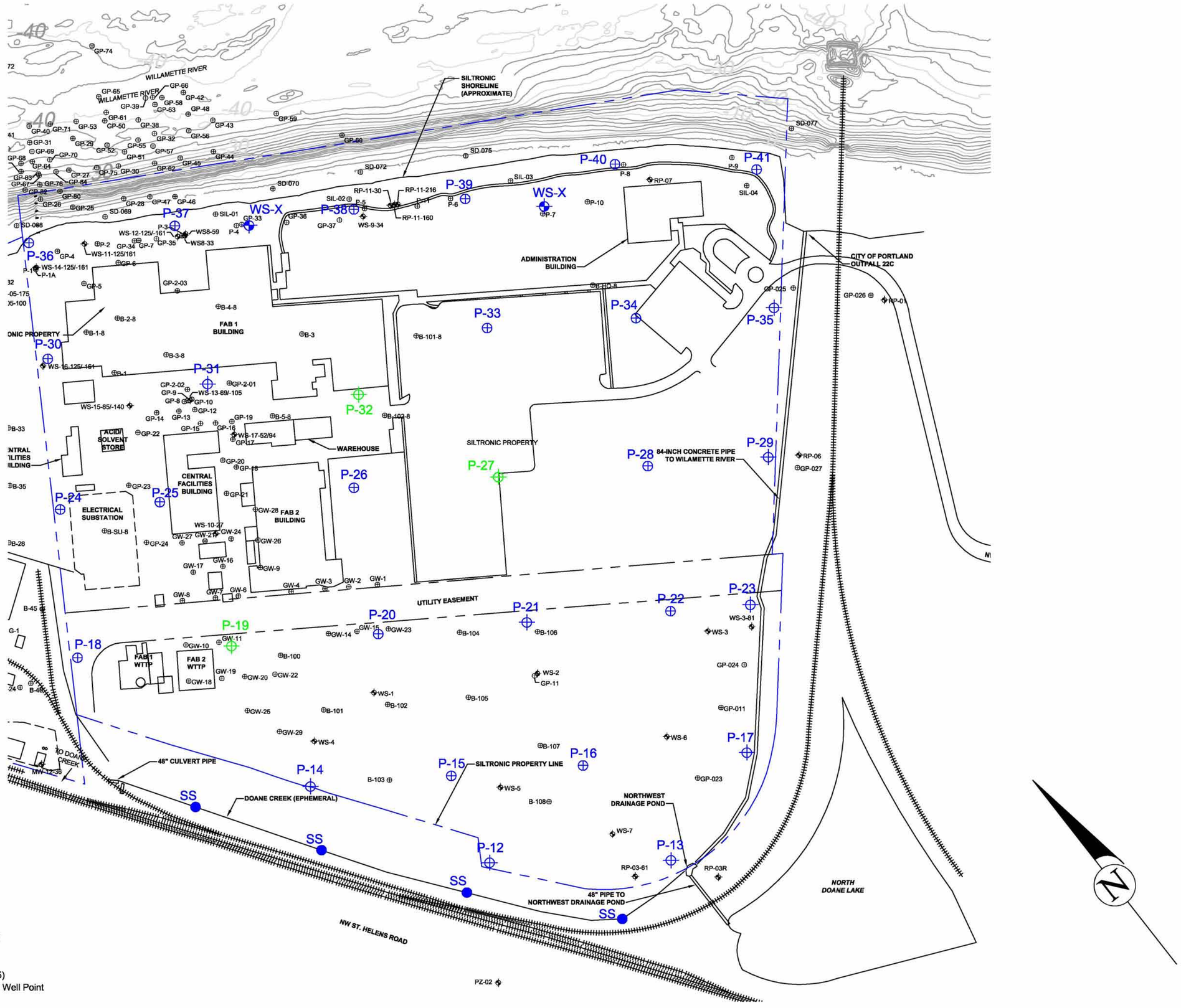
FIGURE 25
Preliminary Ecological Conceptual Site Model
NW Natural RI Activities, Siltronic Property



Notes:

+	This route is a potentially complete source of exposure.
-	There is no exposure by this route.
1	To be evaluated as part of the Portland Harbor Risk Assessment

Hahn and Associates, Inc.



LEGEND

- Monitoring Well (existing)
- Soil Boring (existing)
- Property Line (Approximate)
- Proposed Surface Sample Location Doane Creek Embankment
- Proposed Surficial Fill WBZ Well (WS-X)
- Proposed Push Probe Boring Through Surficial Fill With Soil Sample (0 to 3' and 3 to 12') (P-12 Through P-41)
- Proposed Push Probe Boring With Temporary Well Point In Surficial Fill WBZ (P-12,P-13,P-14,P-17,P-19,P-21,P-23,P-27,P-29,P-32,P-35)
- Proposed Push Probe to Bedrock (refusal) With Temporary Well Point In Fill and Alluvial WBZ (P-19,P-27,P-32)

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1"=200' 0 100' 200' 400' Scale in Feet

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FIGURE 26
RI SCOPING LEVEL PRELIMINARY PROPOSED SAMPLE LOCATIONS

NW NATURAL & SILTRONIC PROPERTIES
PORTLAND OREGON

NOTES:
Willamette River bathymetry based on May 2003 survey provided by the Lower Willamette Group.

APPENDICES

APPENDIX A

Boring Logs – 2005 AMEC SIL and RP-11 Series

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
0		SP	Loose, brown, fine SAND (FILL) with trace gravel; moist.						
						0.0			
						0.0			
5									
			Gravel becomes rounded and coarser.						
		SP	Medium dense, gray, fine SAND (FILL); moist. Strong						
10		SM	petroleum-like odor.						
			Medium dense, brown, silty SAND (FILL) with debris (rubber); moist.						
		SM	Medium dense, gray, silty SAND (FILL), debris, trace copper			0.0			
		SM	wire; moist. Slight petroleum-like odor.						
			Stiff, gray, sandy SILT (FILL); moist. Slight petroleum-like			0.0			
		SP	odor.						
			Medium dense, brown, fine SAND (FILL) with trace gravel; moist.						
15									
		SM	Stiff, gray, sandy SILT (FILL) with trace copper wire and glass						
		SP	debris; moist. Moderate petroleum-like odor.						
			Medium dense, dark gray, fine SAND (FILL); moist. Strong						
		ML	petroleum-like odor.						
		SP	Stiff, gray SILT (FILL) with fine sand; moist. Strong petroleum-like odor.						
			Medium dense, gray, fine SAND (FILL); moist. Strong petroleum-like odor and heavy sheen.			169 194			
20			With trace silt.						
						205			
						262			
		SP	Medium dense, gray, fine SAND (FILL); moist. Moderate petroleum-like odor.			3.0			
25			With trace organics (roots) and fine gravel.						
						3.8			
			With trace silt and brick debris. (FILL)						
		SP	Medium dense, brownish gray, fine SAND (FILL); moist. Slight petroleum-like odor.			5.1			
30									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 10.0, 8.0, & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C Johnson & L. Glonek

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 10/31/2005 - 10/31/2005

REMARKS:
Borehole diameter: 10-inch - 0 to 27 ft bgs. 8-inch - 27 to 158 ft bgs. 6-inch - 158 to 218 ft bgs.

Bentonite seal at bottom of casing before stepping down.

RP - Portland
Stage 1 SCE

0-61M-107030 P69

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LOG OF BORING
SIL-01

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
30		SP	Loose, brown, fine SAND (FILL) with trace rounded gravel; moist. Strong petroleum-like odor.			18			101-01
		SM	Medium stiff, brown, sandy SILT (FILL) with trace organics; et.						
35						0.0			
		SM	Medium stiff, dark gray, sandy SILT (FILL), metal debris to 40 ft bgs; wet. Moderate petroleum-like odor.						
						7.9			
40									
						3.6			
45									
		SM	Medium dense, dark gray, silty SAND; wet. Slight petroleum-like odor, no sheen.						
		SM				3.3			
		SM	Medium stiff, dark gray, sandy SILT; wet. Slight petroleum-like odor.						
			Medium dense, dark gray, silty SAND; wet.						
50		SP	Medium dense, dark gray, fine SAND; wet.						
						2.1			
			With trace organics.						
55		ML	Stiff, brownish dark gray SILT with trace organics (roots); wet.						
		SP	Medium dense, dark gray, fine SAND with trace organics; wet.			2.3			
						3.3			
60		SM	Medium dense, dark gray, silty SAND, trace organics; wet.						

BORING METHOD: Sonic

BOREHOLE DIAMETER: 10.0, 8.0, & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C Johnson & L. Glonek

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 10/31/2005 - 10/31/2005

REMARKS:
Borehole diameter: 10-inch - 0 to 27 ft bgs. 8-inch - 27 to 158 ft bgs. 6-inch - 158 to 218 ft bgs.

Bentonite seal at bottom of casing before stepping down.

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LOG OF BORING
SIL-01

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
60		SP	Medium dense, dark gray, fine SAND with trace organics; wet.						
		ML	Medium stiff, brownish dark gray SILT with trace organics.						
		SP	Medium dense, dark gray, fine SAND with trace organics; wet.			5.3			
65		ML	Medium stiff, brownish dark gray SILT with occasional organics and fine sand laminae.						
		SP	Medium dense, dark gray, fine SAND; wet.			7.2			
		ML	Medium stiff, dark gray SILT with fine sand laminae and some organics; wet.						
70									
		SP	Medium dense, dark gray, fine SAND with occasional organics; wet. Slight petroleum-like odor.			15			
			No organics below 74 ft bgs.						
75									
		ML	Medium stiff, dark gray SILT with fine sand; wet.						
		SM	Medium dense, dark gray, fine SAND with trace silt; wet.			14			
			With silt nodules (to 1-inch diameter) from 79-79.5 ft bgs.						
80									
			With silt nodules (to 1.5-inch diameter) from 81-81.5 ft bgs.			0.0			
		ML	Medium stiff, dark gray, fine, sandy SILT with fine sand lense (1 inch thick at 82 ft bgs); wet.						
		SP	Medium dense, dark gray, fine SAND with abundant silt nodules from 83-84 ft bgs; wet.			0.0			
85		ML	Medium stiff, dark gray SILT with fine sand; wet.			3.9			
		SP	Medium dense, dark gray, fine SAND; wet.			0.0			
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 10.0, 8.0, & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C Johnson & L. Glonek

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 10/31/2005 - 10/31/2005

REMARKS:
Borehole diameter: 10-inch - 0 to 27 ft bgs. 8-inch - 27 to 158 ft bgs. 6-inch - 158 to 218 ft bgs.

Bentonite seal at bottom of casing before stepping down.

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
90		SP				0.0			
95		ML	Medium stiff, dark gray, fine, sandy SILT; wet.						
		SP	Medium dense, dark gray, fine SAND; wet.			0.0			
100						0.0			115-01
105		SM	Medium dense, dark gray, fine SAND with abundant gray silt nodules; wet.			0.0 0.0			
110		ML	Medium stiff, gray SILT with trace organics; wet.			0.0			
115		SM	Medium dense, dark gray, fine SAND with abundant gray silt nodules (to 1/2-inch diameter); wet. With abundant silt nodules (to 1/2-inch to 3-inch diameter).			0.0			
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 10.0, 8.0, & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C Johnson & L. Glonek

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 10/31/2005 - 10/31/2005

REMARKS:
Borehole diameter: 10-inch - 0 to 27 ft bgs. 8-inch - 27 to 158 ft bgs. 6-inch - 158 to 218 ft bgs.

Bentonite seal at bottom of casing before stepping down.

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LOG OF BORING
SIL-01

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
120		SM				0.0			
			With trace silt nodules (to 3/4-inch diameter) and trace organics in nodules.						
125			Occasional silt nodules.			0.0			
		SP	Medium dense, gray, fine SAND; wet. (Heaving sand conditions encountered, resulting in 10 feet of disturbed material inside drill stem/casing.)						
130						0.0			116-01
						0.0			
135						0.0			
						0.0			
140		ML	Medium stiff, gray SILT with trace fine sand lenses; wet.						
		SP	Medium dense, gray, fine SAND; wet.			0.0			
145						0.0			
150									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 10.0, 8.0, & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C Johnson & L. Glonek

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 10/31/2005 - 10/31/2005

REMARKS:
Borehole diameter: 10-inch - 0 to 27 ft bgs. 8-inch - 27 to 158 ft bgs. 6-inch - 158 to 218 ft bgs.

Bentonite seal at bottom of casing before stepping down.

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
150		SP				0.0			
						0.0			
155			With trace gray silt nodules (to 1/2-inch diameter).						
						0.0			
		ML	Medium stiff, gray SILT with trace fine sand; wet.			0.0			
160		SP	Medium dense, gray, fine SAND; wet.						△ 117-01
						0.0			
						0.0			
165									
170						0.0			
						0.0			
175						0.0			
		SM	Medium dense, gray, fine SAND with trace silt nodules (to 1.5-inch diameter); wet.			0.0			
						0.0			
180									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 10.0, 8.0, & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C Johnson & L. Glonek

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 10/31/2005 - 10/31/2005

REMARKS:
Borehole diameter: 10-inch - 0 to 27 ft bgs. 8-inch - 27 to 158 ft bgs. 6-inch - 158 to 218 ft bgs.

Bentonite seal at bottom of casing before stepping down.

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
180		SM							
		SP	Medium dense, gray, fine SAND; wet.			0.0			
185						0.0			118-01
			With trace silt nodules from 189-191 ft bgs.			0.0			
190						0.0			
		SP	Medium dense, brown, fine SAND; wet.			0.0			
195						0.0			
						0.0			
200						0.0			
			With trace medium sand.			0.0			
						0.0			
205		GP	Dense, brown, subangular to rounded, sandy GRAVEL with trace silt, alluvium; wet.			0.0			
		GC	Dense, gray, red and greenish-brown, clayey, slightly weathered, basalt GRAVEL, trace vesicles; moist.			0.0			109-01
210									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 10.0, 8.0, & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C Johnson & L. Glonek

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 10/31/2005 - 10/31/2005

REMARKS:
Borehole diameter: 10-inch - 0 to 27 ft bgs. 8-inch - 27 to 158 ft bgs. 6-inch - 158 to 218 ft bgs.

Bentonite seal at bottom of casing before stepping down.

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LOG OF BORING
SIL-01

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
210		GC	Very dense, dark gray to red-brown, rounded, clayey GRAVEL with trace sand (10%), gravel lithology varies from basalt, chert, and quartzite; moist.						
		SP	Dense, gray, coarse SAND; wet.						
		GC	Very dense, light to dark gray, coarse, clayey, moderately weathered to decomposed basalt GRAVEL with some silt and sand; wet.						
215									△ 114-01
			Total depth drilled = 218 ft bgs.						
220									
225									
230									
235									
240									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 10.0, 8.0, & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C Johnson & L. Glonek

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 10/31/2005 - 10/31/2005

REMARKS:
Borehole diameter: 10-inch - 0 to 27 ft bgs. 8-inch - 27 to 158 ft bgs. 6-inch - 158 to 218 ft bgs.

Bentonite seal at bottom of casing before stepping down.

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LOG OF BORING
SIL-01

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
0		SP	Medium dense, brown, fine SAND (FILL) with trace medium sand; moist.						
		SM	Medium dense, brown, silty, fine SAND (FILL); moist.						
		SP	Medium dense, brown, fine SAND (FILL) with occasional fine gravel and wood debris; moist.			1.9			
5						0.0			
		SP	Medium dense, brown with gray, fine SAND (FILL) with occasional gravel; moist.			0.0			
10		SP	Medium dense, dark gray to black, fine SAND (FILL) with occasional fine gravel and silt; moist. Strong petroleum-like odor, slight sheen.						
			Sheen becomes heavy.			67			
						0.0			
						47			
15			No sheen.						
			Petroleum-like odor becomes moderate.						
						9.4			
						0.0			
20			No silt and strong petroleum-like odor.						
						0.0			
						0.0			
25						1.4			
						0.0			
			With heavy sheen.						
30									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 11/10/2005 - 11/15/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 35 ft bgs. 6-inch - 35 to 235 ft bgs.

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LOG OF BORING SIL-02

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
30		SP							127-01
		ML	Medium stiff, gray SILT with trace fine sand; moist.						
35						0.0			
						0.0			
40			Becomes wet.			0.0			
		PT	PEAT.						
		ML	Medium stiff, gray SILT with trace fine sand; wet.						
45			With trace organics.			0.0			
						0.0			
		SM	Medium dense, gray, silty, fine SAND with trace organics; wet.						
50		SP	Medium dense, gray, fine SAND with silt; wet.			0.0			
						0.0			
		ML	Medium stiff, gray SILT with fine sand and trace organics; wet.			0.0			
55		SM	Medium dense, gray, silty fine SAND; wet.			0.0			
		ML	Medium stiff, gray, fine, sandy SILT with trace organics; wet.			0.0			
		SM	Medium dense, gray silty, fine SAND; wet.						
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 11/10/2005 - 11/15/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 35 ft bgs. 6-inch - 35 to 235 ft bgs.

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LOG OF BORING
SIL-02

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
60		ML	Medium stiff, gray SILT with fine sand and trace organics; wet.						
		SP	Medium dense, gray, fine SAND with occasional silt; wet.						
		SP	Medium dense, gray, fine SAND; wet.			0.0			
						0.0			
						0.0			
		ML	Medium stiff, gray SILT with trace fine sand; wet.						
65		SP	Medium dense, gray, fine SAND; wet.						
						0.0			
70						0.0			
						0.0			
						0.0			
						0.0			
75									
						0.0			
80									
		ML	Medium stiff, gray SILT with fine sand; wet.			0.0			
		SP	Medium dense, gray, fine SAND; wet.						
						0.0			
						0.0			
85			With trace organics from 84-85 ft bgs.						
			With trace silt.						
		ML	Medium stiff, gray SILT with trace sand and organics; wet.			0.0			
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 11/10/2005 - 11/15/2005

REMARKS:
Borehole diameter: 8-Inch - 0 to 35 ft bgs. 6-Inch - 35 to 235 ft bgs.

RP - Portland
Stage 1 SCE

0-61M-107030 P69

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LOG OF BORING
SIL-02

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
90		SP	Medium dense, gray, fine SAND; wet.			0.0			
						0.0			
						0.0			
		ML	Medium stiff, gray, fine, sandy SILT; wet.						
		SP	Medium dense, gray, fine SAND; wet.			0.0			
95									
						0.0			
100						0.0			131-01
		ML	Medium stiff, gray SILT with fine sand; wet.			0.0			
		SP	Medium dense, gray, fine SAND; wet.			0.0			
						0.0			
105			With trace organics from 104-105 ft bgs.						
						0.0			
		ML	Medium stiff, gray SILT; wet.						
110		SP	Medium dense, gray, fine SAND; wet.			0.0			
		ML	Medium stiff, gray SILT with trace fine sand; wet.			0.0			
						0.0			
						0.0			
115			With trace organics and occasional fine sand.						
		SP	Medium dense, gray, fine SAND with trace silt nodules (to 1-inch diameter); wet.			0.0			
		SM	Medium dense, gray, silty, fine SAND; wet.						
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 11/10/2005 - 11/15/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 35 ft bgs. 6-inch - 35 to 235 ft bgs.

RP - Portland
Stage 1 SCE

0-61M-107030 P69

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LOG OF BORING
SIL-02

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
120		SM				0.0			
						0.0			
						0.0			
		ML	Medium stiff, gray SILT with fine sand; wet.						
		SM	Medium dense, gray, silty, fine SAND; wet.			0.0			
125									
						0.0			
130		ML	Medium stiff, gray SILT with trace fine sand and occasional organics; wet.			0.0			132-01
		SP	Medium dense, gray, fine SAND with occasional silt; wet.			0.0			
		ML	Medium stiff, gray SILT with trace fine sand; wet.			0.0			
		SP	Medium dense, gray, fine SAND; wet.						
			With trace silt nodules from 134-135 ft bgs.			0.0			
135									
		SM	Medium dense, gray, silty, fine SAND; wet.						
140						0.0			
		SP	Medium dense, gray, fine SAND; wet.						
						0.0			
						0.0			
145		SM	Medium dense, gray, fine SAND with silt nodules (to 2-inch diameter); wet.						
						0.0			
						0.0			
		ML	Medium stiff, gray, fine, sandy SILT; wet.						
150									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 11/10/2005 - 11/15/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 35 ft bgs. 6-inch - 35 to 235 ft bgs.

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LOG OF BORING
SIL-02

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
150		ML				0.0			
						0.0			
						0.0			
155									
		SM	Medium dense, gray, silty, fine SAND with occasional organics; wet.						
						0.0			
160									133-01
						0.0			
						0.0			
165									
		ML	Medium stiff, gray SILT with fine sand; wet.			0.0			
		SM	Medium dense, gray, silty, fine SAND; wet.						
						0.0			
170						0.0			
						0.0			
			With trace organics from 174-175 ft bgs.			0.0			
175									
		ML	Medium stiff, gray SILT with organics (leaves, needles, bark) and trace fine sand; wet.						
180									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 11/10/2005 - 11/15/2005

REMARKS:
Borehole diameter: 8-Inch - 0 to 35 ft bgs. 6-Inch - 35 to 235 ft bgs.

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
180		ML				0.0			
						0.0			
185		SP	Medium dense, gray, fine SAND with organics; wet.						
		SM-ML	Medium dense, gray, silty, fine SAND to medium stiff, fine, sandy SILT; wet.			0.0			
						0.0			
190			With trace organics from 190-192 ft bgs.			0.0			134-01
						0.0			
						0.0			
195		SM	Medium dense, gray, silty, fine SAND; wet.						
						0.0			
200						0.0			
						0.0			
						0.0			
		ML	Very stiff, dark gray to black with green, blue, and brown, fine, sandy SILT with angular to occasional subrounded, weathered, basalt gravel; wet.			0.0			
205		ML	Very stiff, brownish red with occasional yellow, fine, sandy SILT with angular to subangular, weathered, basalt gravel; wet.						
						0.0			
210									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 11/10/2005 - 11/15/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 35 ft bgs. 6-inch - 35 to 235 ft bgs.

RP - Portland
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LOG OF BORING
SIL-02

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
210		ML				0.0			
		GM	Dense, reddish-gray, angular to subangular, silty GRAVEL with some sand and clay; wet.						
			Grades to brownish-gray.						
215		GM	Dense, gray, subangular to subrounded, silty, clayey, basalt GRAVEL with trace fine sand, fractured, orange oxidized surfaces, occasional gravel with oxidized rings (2-mm to 3-mm diameter); wet.						119-01
220			With boulders.						
			Basalt boulders increase in size (6-inch to 8-inch long cores), fresh, aphanitic.						
225									
230									
235			Total depth drilled = 235 ft bgs.						
240									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 11/10/2005 - 11/15/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 35 ft bgs. 6-inch - 35 to 235 ft bgs.

RP - Portland
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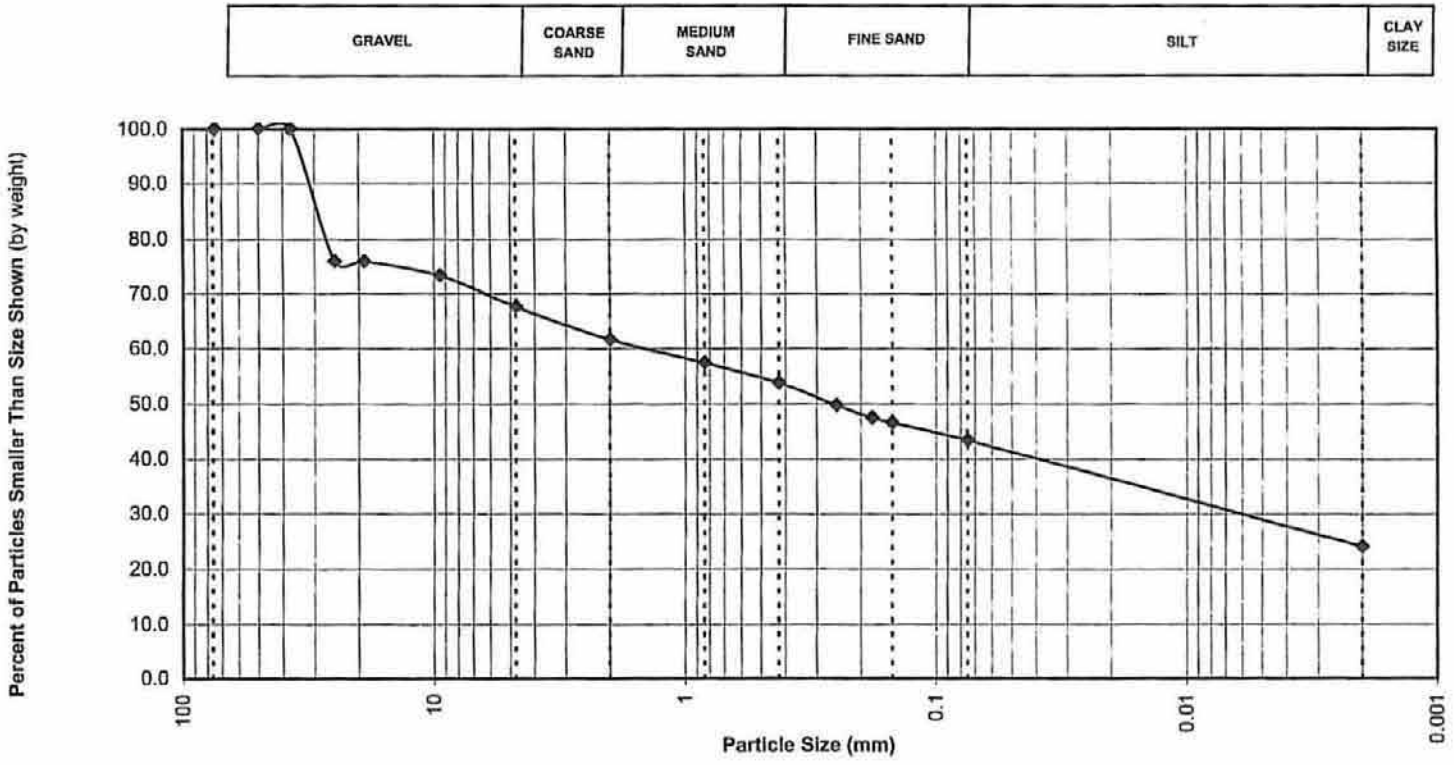
LOG OF BORING
SIL-02

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

Grain Size Accumulation Curve



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE	UNIFIED SOIL CLASSIFICATION SYSTEM DESCRIPTION
SIL-02	216-218	37.5 mm	GM

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RP- Portland Site

0-61M-10703-69

GRAIN SIZE ANALYSIS

FIGURE

B3-4

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 1 SCE Tech Memo\Draft\Appendix B\grain-size distr plots\Revision 2\121-01_SIL02_216-218.xls

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
0		SP	Loose, brown, medium to fine SAND (FILL); dry.			0.0			
5									
10		SP	Loose, gray, medium to fine SAND (FILL); dry.						
			With wood debris and trace rounded gravel.			1.0			
15									
		ML	Stiff, gray, clayey SILT; moist.			0.0			
20		ML	Very stiff, gray-green clayey SILT with organics; moist.			0.0			
25									
30						0.0			

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: B. Lary & C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 12/05/2005 - 12/06/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 130 ft bgs.

RP - Portland
Stage 1 SCE

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LOG OF BORING SIL-03

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
30		SM	Medium dense, brown, silty SAND; moist to wet.						
35									125-01
		SM-ML	Stiff, gray, sandy SILT/silty SAND with organics; wet.						
40									
45									
			With wood debris.						
50									
55									
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: B. Lary & C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 12/05/2005 - 12/06/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 130 ft bgs.

RP - Portland
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LOG OF BORING
SIL-03

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
60		SM-ML							
65									
		ML	Stiff, gray-green sandy SILT; wet.						
		SM	Medium dense, brown, silty SAND; wet.						
		GP	Dense, brown and gray, subrounded, fine GRAVEL in silt matrix; wet.						
70									
		GM	Dense, gray, medium to coarse, subrounded to rounded, silty GRAVEL in silt and sand matrix; wet.						
75									
80		GP	Gray, fine GRAVEL with some silt; wet.						
		GP	Red, coarse GRAVEL, weathering rinds around some gravel; wet.						
		GM	Subrounded to subangular GRAVEL with yellowish weathering rinds on gravel (clast lithology: basalt, chert, quartz and granite).						
85		GP	Fine GRAVEL in silt matrix; wet.						
		GM	Very dense, dark gray, rounded, well-graded, fine GRAVEL in silty matrix, trace cobbles; wet.						
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: B. Lary & C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 12/05/2005 - 12/06/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 130 ft bgs.

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ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
90		GM	Matrix grades from silt to sand.						
			Grades to gray-brown.						
95			Grades to coarse GRAVEL.						
		GW	Gray-brown, fine, sandy GRAVEL; wet.						
		GW	Gray-brown, rounded, silty, sandy GRAVEL; wet.						
			Large cobble (4-inch plus diameter).						
			Grades to gray.						△ 126-01
100		GP	BASALT (6-inch piece). Dense, dark brown to gray, coarse, highly weathered, porphyritic, basalt GRAVEL, with occasional cobble clasts (to 6-inch diameter), with trace silt.						
			BASALT cobble.						
			Silt content increases; moist to wet.						
105			BASALT fragments (3-inch to 5-inch diameter).						
		CL	Soft, red, gravelly CLAY with highly weathered basalt gravels.						
			Grades to reddish-brown to brown.						
110			Gravel becomes coarser, basalt gravels have moderate vesicles (to 4-mm).						
		GM	Medium dense, reddish-brown, angular to subangular, silty, slightly to moderately weathered, basalt GRAVEL and cobbles with clay and trace fine sand, trace vesicles (to 2-mm diameter); wet.						
115									
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: B. Lary & C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 12/05/2005 - 12/06/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 130 ft bgs.

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LOG OF BORING
SIL-03

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
120		CL	Soft, red, gravelly CLAY with highly weathered basalt gravels.						
			Grades to mottled brown and gray.						
125									
			Increase in gravel and cobble content; wet.						
130			Total depth drilled = 130 ft bgs.						△ 142-01
135									
140									
145									
150									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: B. Lary & C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 12/05/2005 - 12/06/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 130 ft bgs.

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LOG OF BORING
SIL-03

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
0		ML	Soft, brown, sandy SILT (FILL) with organics; dry.						
		ML	Soft, brown, sandy SILT (FILL) with trace gravel; dry.						
		SM	Loose, brown, silty SAND (FILL); dry.						
5		SP	Loose, dark gray, medium to fine SAND (FILL) with silt; dry to moist. Slight petroleum-like odor.						
		ML	Soft, dark gray, clayey SILT (FILL); moist.						
10						0.4			
						0.8			
		ML-SM	Medium dense/medium stiff, dark gray, silty SAND/sandy SILT (FILL) with some gravel, piece of plastic; moist. Slight organic odor.						
15			Hit piece of wood; no sample from 16-19 ft bgs.						
						0.3			
						0.0			
20			With trace gravel, organics (wood).						
						0.7			
			Silt content increases, large gravel.			1.2			
			Sand content increases.						
25			Piece of metal debris. (FILL)						
			Large piece of wood, metal debris. (FILL)			1.6			
30									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: B. Lary

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 12/07/2005 - 12/09/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 120 ft bgs.

RP - Portland
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LOG OF BORING SIL-04

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
30		ML-SM							136-01
35		ML	Soft, brown, fine, sandy SILT; wet.						
40			Encountered pieces of wood from approximately 41-42 ft bgs.			0.1			
45						0.2			
			Sand content increases.						
50		SP	Loose, dark brown, fine to medium SAND with some silt; wet.			0.3			
55						0.4			
			Grades to fine SAND, micaceous, some silt.						
60									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 8.0 & 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Cascade Drilling
LOGGED BY: B. Lary

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
DRILLING DATES: 12/07/2005 - 12/09/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 120 ft bgs.

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LOG OF BORING
SIL-04

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
60		SP	Silt content increases.			0.4			
65		ML	Soft, brown, fine, sandy SILT; wet.						
		GM	Loose, brownish gray, rounded to subrounded, basalt GRAVEL with some silt and sand, chert and quartz; wet.						
70						0.6			
		ML	Medium stiff, light green with yellowish mottling, gravelly SILT with angular gravel.			0.6			△ 137-01
75		ML	Stiff, light gray, gravelly SILT with some clay and angular, slightly weathered, porphyritic, basalt gravel; moist.			0.0			
		GM	Medium dense, brown, angular, silty, highly weathered, porphyritic, basalt GRAVEL with some clay infilling; moist to wet.						
80		ML	Stiff, gray with yellow and orange SILT with trace fine weathered gravel, vesicles (to 4-mm diameter) filled with soft, yellow/white crystals; wet.						
85		ML	Stiff, brown, gravelly SILT with trace clay, angular, slightly weathered, porphyritic, gravel, abundant vesicles (to 4-mm diameter); wet.						
		CL	Hard, gray, slightly weathered, basalt cobble, with abundant vesicles (to 5-mm diameter), yellowish-green recrystallization in few vesicles and lining fracture surfaces. Stiff, light gray, gravelly CLAY with silt, angular, porphyritic, highly weathered, basalt gravel; moist.						△ 144-01
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: B. Lary

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 12/07/2005 - 12/09/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 120 ft bgs.

RP - Portland
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LOG OF BORING
SIL-04

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD TESTING	TESTING AND LABORATORY DATA
90		CL	Stiff, light gray, gravelly CLAY with silt, angular, porphyritic, highly weathered, basalt gravel; moist.						
95			Basalt cobble.						
		ML	Medium stiff, brown, gravelly SILT with some clay and fine sand, angular to subangular, highly weathered gravel, abundant vesicles (to 2-mm diameter), some with soft, yellow-white, recrystallization; wet.						
100		CL	Medium stiff, light gray with green, gravelly CLAY, angular, moderately weathered, porphyritic gravel, trace vesicles (to 2-mm); wet.						
		GM	Medium dense, dark grayish-brown with orange and yellow, angular to subangular, silty, highly weathered, porphyritic basalt GRAVEL with clay; wet.						
105		CL	Medium stiff, light greenish-gray CLAY with silt, decomposed basalt gravel or highly vesicular basalt with weathering rinds; wet.						
110									
115									
120			Grades to reddish-brown. Total depth drilled = 120 ft bgs.						

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: B. Lary

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

DRILLING DATES: 12/07/2005 - 12/09/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 120 ft bgs.

RP - Portland
Stage 1 SCE

0-61M-107030 P69

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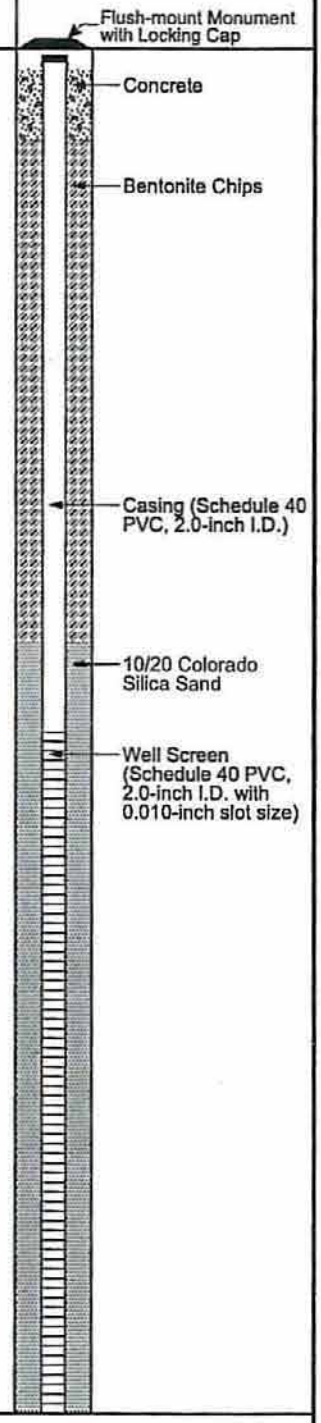
LOG OF BORING
SIL-04

ENVIRONMENTAL BORING (MULTIPLE SCREENS) 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0			Refer to boring RP-11-216 for lithology between 0 to 12 ft bgs.					
5								
10								
		SM	Medium dense, gray, silty, fine SAND; wet. Strong petroleum-like odor.			1.3		
15						0.0		
			With wood debris from 17-18 ft bgs.			0.0		
20						0.0		
						0.0		
						0.0		
25						0.0		
			With slight sheen.			0.0		041-01
30								

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Cascade Drilling
LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: 183227/L76297
DRILLING DATES: 12/02/2005 - 12/02/2005

REMARKS:

RP - Portland
Stage 1 SCE

0-61M-107030 P69

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LOG OF BORING RP-11-30

ENVR+WELL BORING 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/05

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML	Medium stiff, brown mottled with orange and gray, fine, sandy SILT; wet.			0.0			Threaded End Cap
						0.0			Bentonite Chips
						0.0			
35						0.0			
						0.0			
40			Total depth drilled = 40 ft bgs.			0.0			
45									
50									
55									
60									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Cascade Drilling
LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: 183227/L76297
DRILLING DATES: 12/02/2005 - 12/02/2005

REMARKS:

RP - Portland
Stage 1 SCE

0-61M-107030 P69

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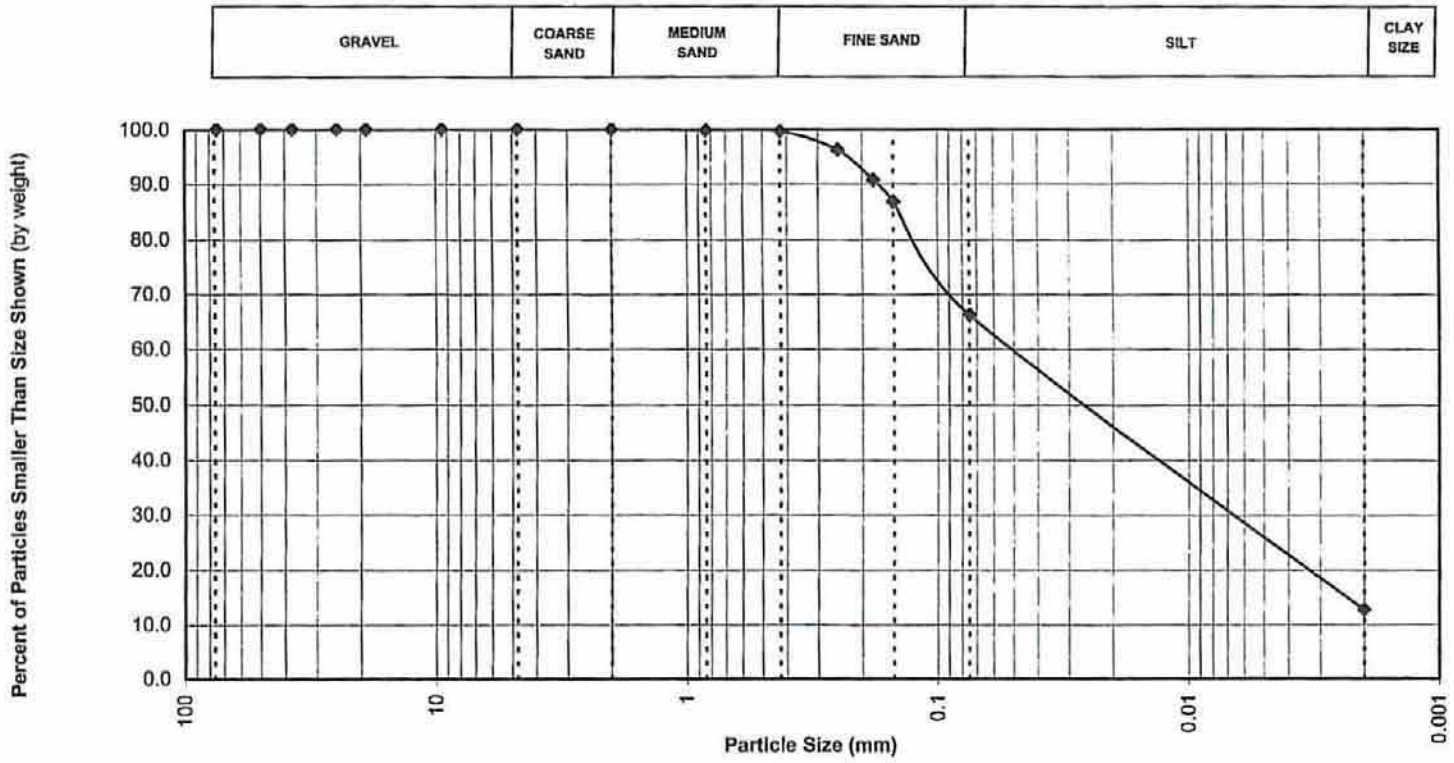
LOG OF BORING
RP-11-30

ENVR+WELL BORING 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

Grain Size Accumulation Curve



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE	UNIFIED SOIL CLASSIFICATION SYSTEM DESCRIPTION
RP-11	28-29	2.0 mm	SM

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RP- Portland Site

0-61M-10703-69

GRAIN SIZE ANALYSIS

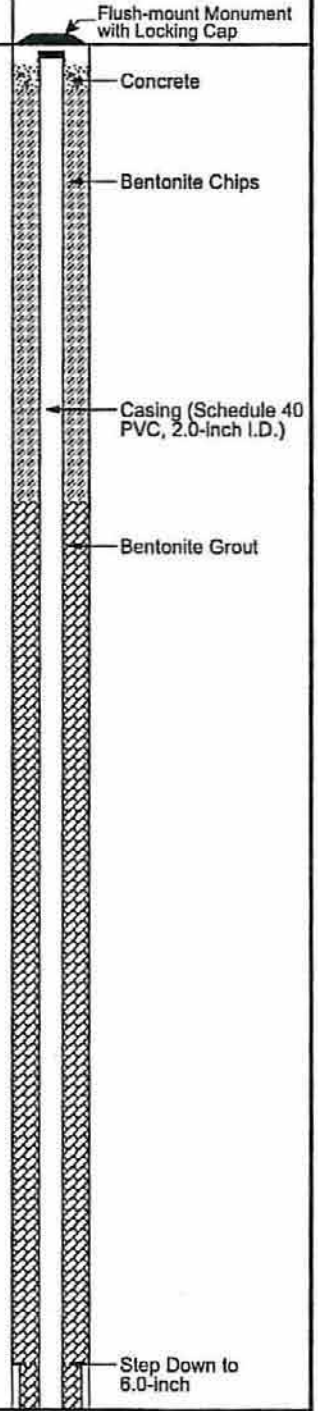
FIGURE

B3-5

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 1 SCE Tech Memo\Draft\Appendix B\grain-size distr plots\Revision 2\141-01_RP11_28-29.xls

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0			Refer to boring RP-11-216 for lithology between 0 to 25 ft bgs.					
25		SM	Medium dense, dark gray, silty, fine SAND with wood debris; wet.			0.0		
		ML	Medium stiff, brown mottled with orange, fine, sandy SILT; wet.					
30								

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183228/L76296

DRILLING DATES: 11/30/2005 - 12/01/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 29 ft bgs. 6-inch - 29 to 160 ft bgs.

RP - Portland
Stage 1 SCE

0-61M-107030 P69

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LOG OF BORING RP-11-160

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30			Refer to boring RP-11-216 for lithology between 30 to 150 ft bgs.			0.0			Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
35									
40									
45									
50									
55									
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183228/L76296

DRILLING DATES: 11/30/2005 - 12/01/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 29 ft bgs. 6-inch - 29 to 160 ft bgs.

RP - Portland
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LOG OF BORING
RP-11-160

ENVR+WELL BORING 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60			Refer to boring RP-11-216 for lithology between 30 to 150 ft bgs.						Bentonite Grout Casing (Schedule 40 PVC, 2.0-inch I.D.)
65									
70									
75									
80									
85									
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183228/L76296

DRILLING DATES: 11/30/2005 - 12/01/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 29 ft bgs. 6-inch - 29 to 160 ft bgs.

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LOG OF BORING
RP-11-160

ENVR+WELL BORING 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90			Refer to boring RP-11-216 for lithology between 30 to 150 ft bgs.						Bentonite Grout Casing (Schedule 40 PVC, 2.0-inch I.D.)
95									
100									
105									
110									
115									
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183228/L76296

DRILLING DATES: 11/30/2005 - 12/01/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 29 ft bgs. 6-inch - 29 to 160 ft bgs.

RP - Portland
Stage 1 SCE

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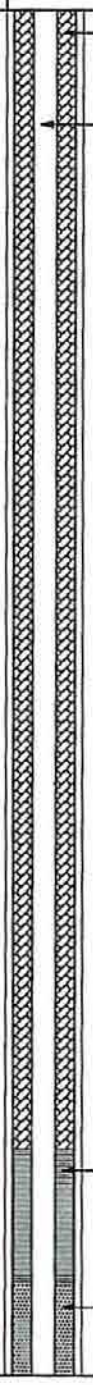
LOG OF BORING
RP-11-160

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
120			Refer to boring RP-11-216 for lithology between 30 to 150 ft bgs.						Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
125									
130									
135									
140									
145									20/40 Colorado Silica Sand; 10/20 Colorado Silica Sand
150									



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183228/L76296

DRILLING DATES: 11/30/2005 - 12/01/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 29 ft bgs. 6-inch - 29 to 160 ft bgs.

RP - Portland
Stage 1 SCE

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LOG OF BORING
RP-11-160

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
150		SP	Medium dense, dark gray, fine SAND with silt; wet.			0.0			Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size)
			With trace organics (leaves, wood).			0.0		140-01	10/20 Colorado Silica Sand
155						0.0			
						0.0			
160			Total depth drilled = 160 ft bgs.			0.0			Threaded End Cap
165									
170									
175									
180									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183228/L76296

DRILLING DATES: 11/30/2005 - 12/01/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 29 ft bgs. 6-inch - 29 to 160 ft bgs.

RP - Portland
Stage 1 SCE

0-61M-107030 P69

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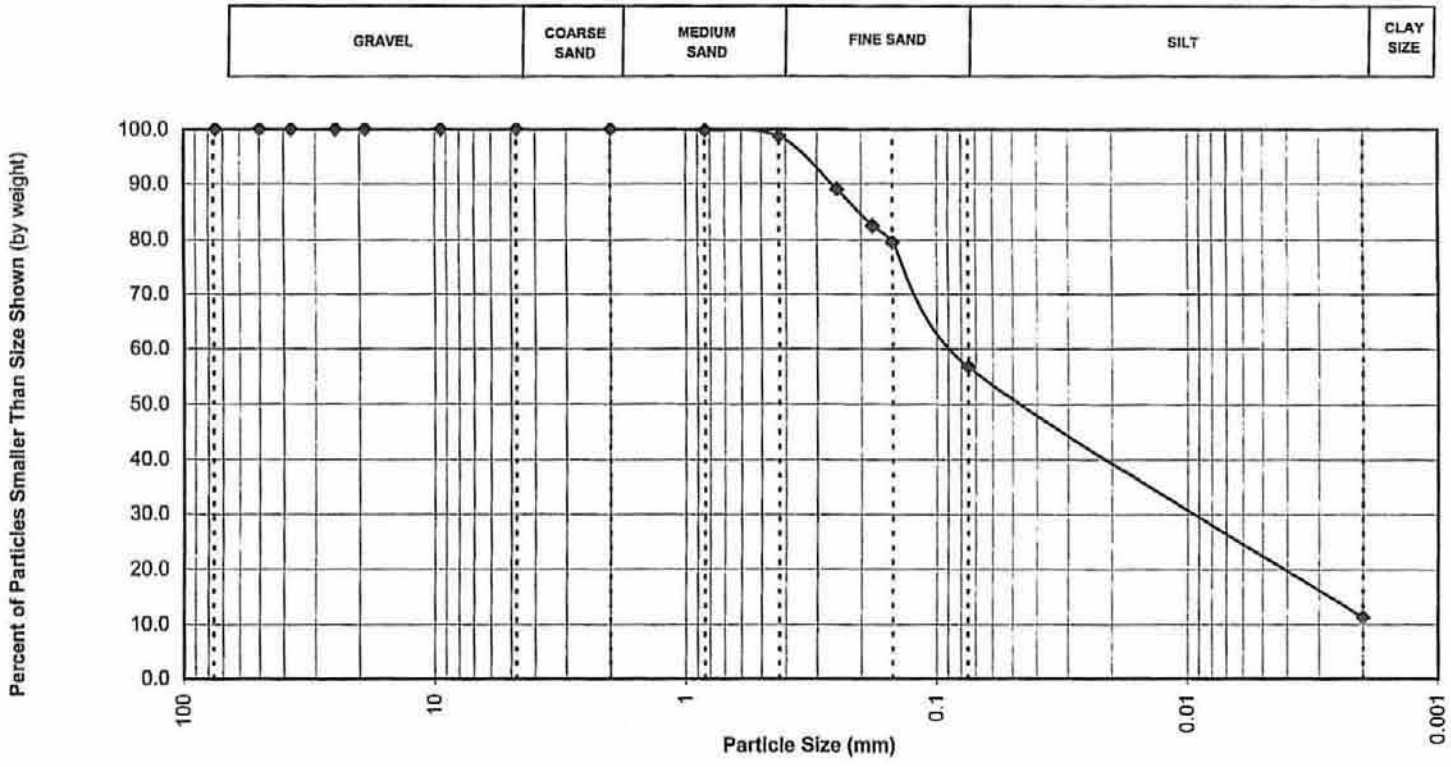
LOG OF BORING
RP-11-160

Grain Size Accumulation Curve



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE	UNIFIED SOIL CLASSIFICATION SYSTEM DESCRIPTION
RP-11	154-155	2.0 mm	SP

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RP- Portland Site

0-61M-10703-69

GRAIN SIZE ANALYSIS

FIGURE

B3-6

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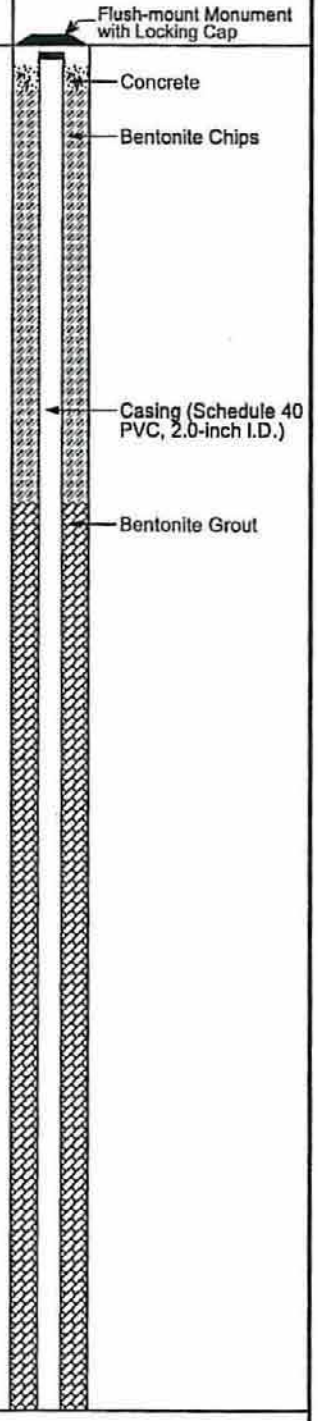
DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
0	GP	Medium dense, brown, fine to medium, sandy GRAVEL (FILL); moist.	0.0	
	SP	Medium dense, brown, gravelly, fine SAND (FILL); moist.		
5			0.0	
			0.0	
	SP	Medium dense, dark gray to black, medium SAND with fine sand; moist. Strong petroleum-like odor and heavy sheen.	0.0	128-01
10				
15		Grades to medium dense, fine SAND; moist. Moderate petroleum-like odor, no sheen.	14	
20		With trace silt.	0.0	
		Becomes wet. Slight petroleum-like odor.	0.0	
25	SM	Medium dense, gray, silty, fine SAND with wood debris; wet.		
	ML	Medium stiff, brown mottled with orange and gray, fine, sandy SILT; wet.	0.4 0.0	
30				

SAMPLE

BLOW COUNT SPT N VALUE

GROUNDWATER

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183229/L76278

DRILLING DATES: 11/17/2005 - 11/29/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 216 ft bgs.

RP - Portland
Stage 1 SCE

0-61M-107030 P69

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LOG OF BORING RP-11-216

ENVR+WELL BORING 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML				0.9			Stainless Steel Centralizer
								△ 120-01@ 27-31'	Step Down to 6.0-inch
									Bentonite Grout
						1.0			
35									Casing (Schedule 40 PVC, 2.0-inch I.D.)
40									
		SP	Medium dense, gray, fine SAND with trace silt; wet.			0.0			
						0.0			
45						0.0			
			Grades to fine SAND with occasional silt.			0.0			
50						0.0			
						0.0			
		SP	Medium dense, brown with gray, fine SAND with occasional silt; wet.			0.0			
55		SP	Medium dense, gray, fine SAND with occasional silt; wet.						
						0.0			
60									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 8.0 & 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Cascade Drilling
LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: 183229/L76278
DRILLING DATES: 11/17/2005 - 11/29/2005

REMARKS:
Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 216 ft bgs.

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		SM	Medium dense, gray, silty, fine SAND; wet.			0.0			Bentonite Grout
		ML	Medium stiff, gray, fine, sandy SILT with occasional organics; wet.			0.0			Casing (Schedule 40 PVC, 2.0-inch I.D.)
		SP	Medium dense, gray, fine SAND with silt and occasional organics; wet.			0.0			
65						0.0			
		SM	Medium dense, gray, silty, fine SAND; wet.			0.0			
70						0.0			Stainless Steel Centralizer
			With occasional organics.			0.0			
		SP	Medium dense, gray, fine SAND with occasional silt; wet.			0.0			
75		SM	Medium dense, gray, silty, fine SAND; wet.						
		SP	Medium dense, gray, fine SAND with trace silt; wet.						
80									
85						0.0			
		ML	Medium stiff, gray SILT with fine sand and organics; wet.			0.0			
		SP	Medium dense, gray, fine SAND with occasional silt; wet.						
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183229/L76278

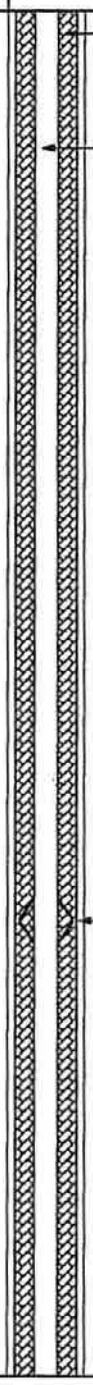
DRILLING DATES: 11/17/2005 - 11/29/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 216 ft bgs.

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
90	SP		0.0	
			0.0	
	ML	Medium stiff, gray SILT with fine sand; wet.		
	SP	Medium dense, gray, fine SAND with trace silt; wet.	0.0	
95				
	ML	Medium stiff, gray, fine, sandy SILT with trace organics; wet.		
			0.0	
100			0.0	122-01@ 96-100'
			0.0	
	SM	Medium dense, gray, silty, fine SAND; wet.	0.0	
	ML	Medium stiff, gray, fine, sandy SILT; wet.	0.0	
105				
			0.0	
	SM	Medium dense, gray, silty, fine SAND; wet.		
			0.0	
110	ML	Medium stiff, gray SILT with fine sand; wet.		
	SP	Medium dense, gray, fine SAND with occasional silt; wet.		
			0.0	
	ML	Medium stiff, gray, fine, sandy SILT; wet.	0.0	
115			0.8	
			0.0	
	SP	Medium dense, gray, fine SAND; wet.	0.0	
120				

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183229/L76278

DRILLING DATES: 11/17/2005 - 11/29/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 216 ft bgs.

RP - Portland
Stage 1 SCE

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LOG OF BORING
RP-11-216

ENVR+WELL BORING 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
120		SP							Bentonite Grout
		ML	Medium stiff, gray, fine, sandy SILT with occasional organics; wet.			0.0			Casing (Schedule 40 PVC, 2.0-inch I.D.)
						0.0			
125						0.0			
						0.0			
130						0.0		123-01@ 126-130'	
		SP	Medium dense, gray, fine SAND with trace silt; wet.			0.0			
						0.0			
135									
		SP	Medium dense, gray, fine SAND; wet.			0.0			
140						0.0			
		SM	Medium dense, gray, silty, fine SAND; wet.			0.0			
		ML	Medium stiff, gray, fine, sandy SILT; wet.			0.0			
145						0.0			
						0.0			Stainless Steel Centralizer
150									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183229/L76278

DRILLING DATES: 11/17/2005 - 11/29/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 216 ft bgs.

RP - Portland
Stage 1 SCE

0-61M-107030 P69

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LOG OF BORING
RP-11-216

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
150		ML				0.0			Bentonite Grout
						0.0		124-01@ 148-152'	Casing (Schedule 40 PVC, 2.0-inch I.D.)
		SP	Medium dense, gray, fine SAND with trace silt; wet.			0.0			
155		SM	Medium dense, gray, silty, fine SAND; wet.						
						0.0			
160		SP	Medium dense, gray, fine SAND with silt and organic debris (leaves, roots); wet.			0.0			
		ML	Medium stiff, gray SILT with fine sand; wet.			0.0			
		SP	Medium dense, gray, fine SAND with silt; wet.						
		SM	Dense, gray, silty, fine SAND with organics (roots, leaves, wood); wet.						
165						0.0			
						0.0			
170						0.0			
						0.0			
						0.0			
175		SP	Medium dense, gray, fine SAND with trace silt; wet.						
180									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183229/L76278

DRILLING DATES: 11/17/2005 - 11/29/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 216 ft bgs.

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
180	SM	Medium dense, gray, silty, fine SAND; wet.	0.0	
			0.0	
			0.0	
185				
	SP	Medium dense, gray, fine SAND with silt; wet.	0.0	
			0.0	
190				135-01@ 176-190'
	SP	Medium dense, gray, fine SAND; wet.		
			0.0	
195			0.0	
			0.0	
	SP	Medium dense, brown, fine SAND; wet.		
200	SM	Medium dense, gray, silty, fine SAND; wet.	0.0	
			0.0	
	GP	Medium dense, dark gray, fine to coarse, rounded to angular, sandy GRAVEL; wet.	0.0	
205	GM	Dense, dark gray with brown and green, angular to subangular, silty, basalt GRAVEL; wet.		
	GM	Dense, brown, subangular, silty, highly weathered, basalt GRAVEL with clay and sand, minor vesicles with soft, white, mineral replacement; moist.		
	GM	Brownish-red, subangular to subrounded, silty, highly weathered, basalt GRAVEL with trace clay and sand, trace gravels with abundant vesicles replaced with soft, white minerals.	0.0	138-01
210				

WELL SCHEMATIC

- Bentonite Grout
- Casing (Schedule 40 PVC, 2.0-inch I.D.)
- Stainless Steel Centralizer
- Bentonite Chips
- 10/20 Colorado Silica Sand
- Stainless Steel Centralizer

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183229/L76278

DRILLING DATES: 11/17/2005 - 11/29/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 216 ft bgs.

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	BLOW COUNT SPT N VALUE	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
210		ML	Very stiff, grayish red, gravelly SILT with trace clay and sand, subrounded, highly weathered, basalt gravel; wet.			0.0 0.0			Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size)
		GM	Dense, gray, angular to subangular, silty, slightly weathered, basalt GRAVEL with fine sand and trace clay; wet.			0.0			
215						0.0		139-01@ 210-216'	Threaded End Cap
			Total depth drilled = 216 ft bgs.						
220									
225									
230									
235									
240									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Cascade Drilling

LOGGED BY: C. Johnson

ELEVATION REFERENCE: NA

GROUND SURFACE ELEVATION: NA

CASING ELEVATION: NA

START CARD/TAG ID: 183229/L76278

DRILLING DATES: 11/17/2005 - 11/29/2005

REMARKS:

Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 216 ft bgs.

RP - Portland
Stage 1 SCE

0-61M-107030 P69

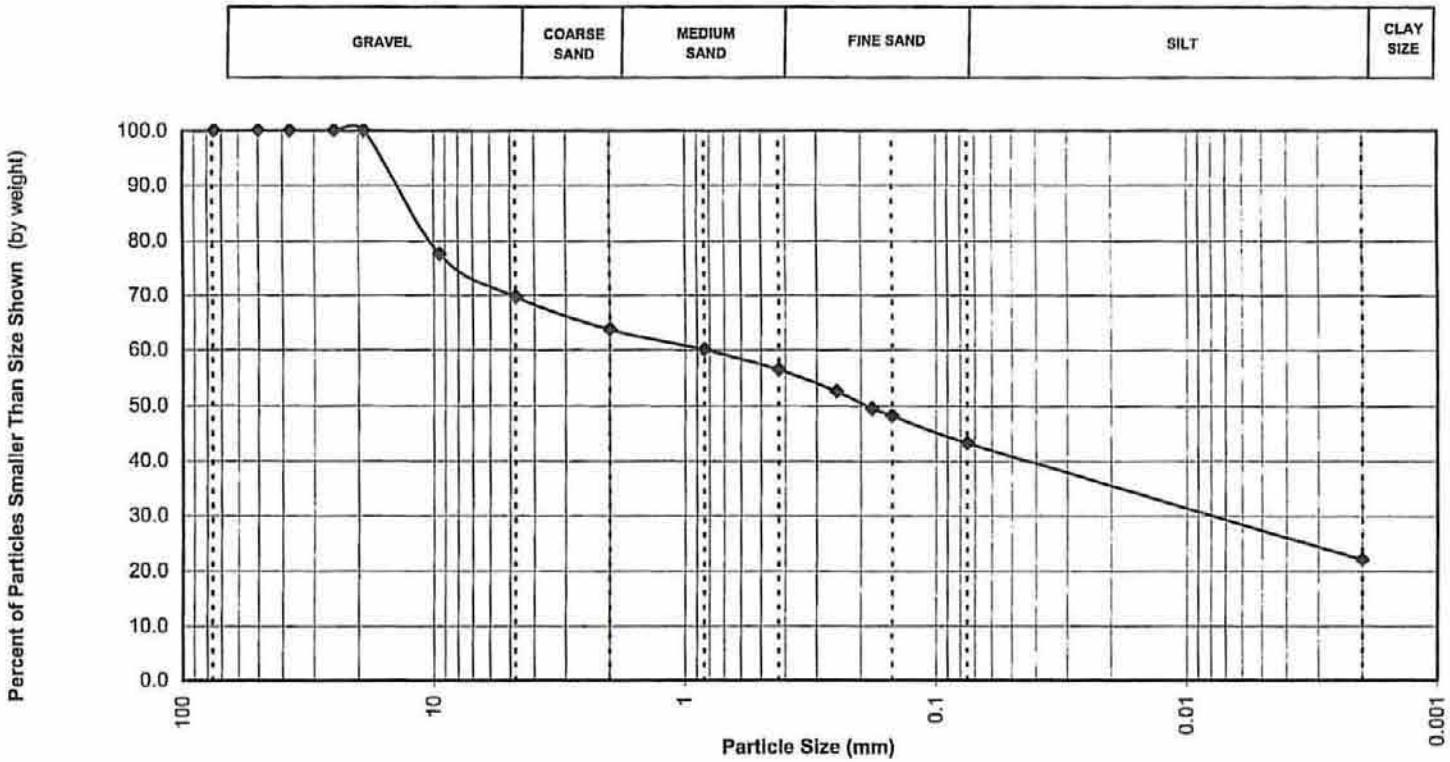
AMEC
7376 SW Durham Road
Portland, Oregon
USA 97224
Tel (503) 639-3400
Fax (503) 620-7892

amec

LOG OF BORING
RP-11-216

ENVR+WELL BORING 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/7/06

Grain Size Accumulation Curve



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE	UNIFIED SOIL CLASSIFICATION SYSTEM DESCRIPTION
RP-11	208-210	19 mm	GM

AMEC Earth & Environmental, Inc.
7376 SW Durham Road
Tel +1 (503) 639-3400
Fax +1 (503) 620 7892

amec

RP- Portland Site

0-61M-10703-69

GRAIN SIZE ANALYSIS

FIGURE

B3-7

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 1 SCE Tech Memo\Draft\Appendix B\grain-size distr plots\Revision 2\138-01_RP11_208-210.xls

APPENDIX B

DNAPL Characterization Data Summary

Table 1
Volatile Organic Compounds Detected in MGP DNAPL Samples
USEPA Method 8260
Siltronic Corporation
Portland, Oregon

PERIOD: From 08/02/2001 thru 08/16/2005 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	GP27 10/08/2004	WS-10 07/01/2004	WS-10-27 11/15/2004	WS-11-125 01/28/2004	WS-11-125 04/27/2004	WS-11-125 11/15/2004
1,3,5-TMB	(ug/kg)	2350	147000	<100000	54200	121000	261000
4-Isopropyltoluene	(ug/kg)	<1000	49600	<100000	<50000	<50000	<100000
Benzene	(ug/kg)	1700	874000	653000	118000	271000	364000
1,2,4-TMB	(ug/kg)	8960	394000	114000	188000	434000	755000
Isopropylbenzene	(ug/kg)	1080	69400	<100000	<50000	<50000	<100000
Ethylbenzene	(ug/kg)	12300	807000	260000	379000	925000	990000
m,p-Xylene	(ug/kg)	4950	367000	262000	290000	356000	878000
Methylene chloride	(ug/kg)	5320	<100000	<500000	<250000	<250000	<500000
Naphthalene	(ug/kg)	986000	39500000	11300000	5520000	114000000	47900000
n-Butylbenzene	(ug/kg)	<1000	<20000	<100000	<50000	<50000	<100000
n-Propylbenzene	(ug/kg)	<1000	32800	<100000	<50000	<50000	<100000
o-Xylene	(ug/kg)	4280	297000	124000	158000	364000	542000
sec-Butylbenzene	(ug/kg)	<1000	<20000	<100000	<50000	<50000	<100000
Styrene	(ug/kg)	<1000	<20000	<100000	<50000	<50000	<100000
Toluene	(ug/kg)	<1000	43100	<100000	82000	194000	209000
TCE	(ug/kg)	<1000	<20000	<10000	<50000	59600	43100
cis-1,2-DCE	(ug/kg)	<1000	<20000	<100000	75200	188000	373000
trans-1,2-DCE	(ug/kg)	<1000	<20000	<100000	<50000	<50000	<100000
1,1-DCE	(ug/kg)	<1000	<20000	<100000	<50000	<50000	<100000
Vinyl chloride	(ug/kg)	<1000	<20000	<100000	<50000	<50000	<100000

Only compounds detected are shown.

Table 1
Volatile Organic Compounds Detected in MGP DNAPL Samples
USEPA Method 8260
Siltronic Corporation
Portland, Oregon

PERIOD: From 08/02/2001 thru 08/16/2005 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	WS-11-125 03/15/2005	WS-14-125 11/15/2004	WS-14-125 03/15/2005	WS-15-85 02/17/2005
1,3,5-TMB	(ug/kg)	160000	<1000000	120000	11200
4-Isopropyltoluene	(ug/kg)	6410	<1000000	5040	2460
Benzene	(ug/kg)	255000	<5000000	925000	215000
1,2,4-TMB	(ug/kg)	531000	<1000000	508000	49600
Isopropylbenzene	(ug/kg)	58300	<1000000	73900	6240
Ethylbenzene	(ug/kg)	875000	<1000000	826000	140000
m,p-Xylene	(ug/kg)	753000	<2000000	955000	123000
Methylene chloride	(ug/kg)	<2500	<25000000	<2500	<2500
Naphthalene	(ug/kg)	72900000	38600000	79000000	3240000
n-Butylbenzene	(ug/kg)	2210	<1000000	1900	774
n-Propylbenzene	(ug/kg)	6810	<1000000	4240	2280
o-Xylene	(ug/kg)	470000	<1000000	490000	59100
sec-Butylbenzene	(ug/kg)	614	<1000000	<500	<500
Styrene	(ug/kg)	1530	<1000000	<500	<500
Toluene	(ug/kg)	166000	<1000000	171000	16400
TCE	(ug/kg)	15700	<100000	<500	<500
cis-1,2-DCE	(ug/kg)	246000	<5000000	808	4720
trans-1,2-DCE	(ug/kg)	1250	<5000000	<500	<500
1,1-DCE	(ug/kg)	624	<5000000	<500	<500
Vinyl chloride	(ug/kg)	32200	<5000000	<500	<500

Only compounds detected are shown.

Table 2
Semi-Volatile Organic Compounds Detected - MGP DNAPL Samples
USEPA Method 8270/8270-SIM
Siltronic Corporation
Portland, Oregon

PERIOD: From 08/02/2001 thru 08/16/2005 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	GP27 10/08/2004	WS-10-27 11/15/2004	WS-11-125 01/28/2004	WS-11-125 04/27/2004	WS-11-125 11/15/2004	WS-11-125 03/15/2005
2,4,6-Trichlorophenol	(mg/kg)	<1.00	<50	<3330	39.0	<50	<999
2-Methylnaphthalene	(mg/kg)	37	7090	<66700	14900	16600	32500
Acenaphthene	(mg/kg)	45	7250	7160	7650	7000	15800
Acenaphthylene	(mg/kg)	1.9	488	1860	2220	1740	3500
Anthracene	(mg/kg)	19	4160	3760	3580	4010	7740
Benzo(a)anthracene	(mg/kg)	12	2490	1780	1970	1970	3690
Benzo(a)pyrene	(mg/kg)	14	2520	1800	1970	1900	3790
Benzo(b)fluoranthene	(mg/kg)	11	2420	1680	1870	1910	3420
Benzo(ghi)perylene	(mg/kg)	13	1560	1090	1320	1150	2630
Benzo(k)fluoranthene	(mg/kg)	5.3	777	694	601	560	1020
Bis(2-chloroethyl)ether	(mg/kg)	<0.40	<20	<1330	12.0	<20	<399
Bis(2-ethylhexyl)phthalate (BEHP)	(mg/kg)	0.94	<10	<667	<5	<10	<200
Carbazole	(mg/kg)	5.1	1460	<6670	1340	1290	2320
Chrysene	(mg/kg)	14	2550	1890	2280	2020	4060
Dibenzo(a,h)anthracene	(mg/kg)	1.8	95.0	<667	243	69.0	465
Dibenzofuran	(mg/kg)	2.9	612	<667	858	762	1560
Dimethyl phthalate	(mg/kg)	<0.20	16.0	<667	32.5	25.0	<200
Fluoranthene	(mg/kg)	44	7160	7100	8180	6540	14600
Fluorene	(mg/kg)	18	3610	4790	4620	4150	8620
Indeno(1,2,3-cd)pyrene	(mg/kg)	7.3	1180	810	998	892	1930
Naphthalene	(mg/kg)	88	42900	68000	75400	62500	133000

Only compounds detected are shown.

Table 2
Semi-Volatile Organic Compounds Detected - MGP DNAPL Samples
USEPA Method 8270/8270-SIM
Siltronic Corporation
Portland, Oregon

PERIOD: From 08/02/2001 thru 08/16/2005 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	GP27 10/08/2004	WS-10-27 11/15/2004	WS-11-125 01/28/2004	WS-11-125 04/27/2004	WS-11-125 11/15/2004	WS-11-125 03/15/2005
Nitrobenzene	(mg/kg)	<0.20	<10	<667	18.0	<10	<200
N-Nitrosodimethylamine	(mg/kg)	<0.20	<10	<667	8.00	<10	<200
Phenanthrene	(mg/kg)	81	21800	18300	15800	19800	40200
p-Nitroaniline	(mg/kg)	<1.00	<50	<3330	28.0	<50	<999
Pyrene	(mg/kg)	50	8070	9530	7070	7130	17100

Only compounds detected are shown.

Table 2
Semi-Volatile Organic Compounds Detected - MGP DNAPL Samples
USEPA Method 8270/8270-SIM
Siltronic Corporation
Portland, Oregon

PERIOD: From 08/02/2001 thru 08/16/2005 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	WS-14-125 11/15/2004	WS-14-125 03/15/2005	WS-15-85 02/17/2005
2,4,6-Trichlorophenol	(mg/kg)	<50	<999	<192
2-Methylnaphthalene	(mg/kg)	15700	26700	12900
Acenaphthene	(mg/kg)	8480	16000	8970
Acenaphthylene	(mg/kg)	471	881	598
Anthracene	(mg/kg)	4520	7420	4180
Benzo(a)anthracene	(mg/kg)	2170	3560	2450
Benzo(a)pyrene	(mg/kg)	2190	3670	2590
Benzo(b)fluoranthene	(mg/kg)	2140	3270	1300
Benzo(ghi)perylene	(mg/kg)	1240	2480	2250
Benzo(k)fluoranthene	(mg/kg)	678	1030	1390
Bis(2-chloroethyl)ether	(mg/kg)	<20	<399	<76.7
Bis(2-ethylhexyl)phthalate (BEHP)	(mg/kg)	<10	<200	<38.5
Carbazole	(mg/kg)	1580	2490	1250
Chrysene	(mg/kg)	2280	3900	3020
Dibenzo(a,h)anthracene	(mg/kg)	80.0	456	320
Dibenzofuran	(mg/kg)	761	1320	571
Dimethyl phthalate	(mg/kg)	19.0	<200	<38.5
Fluoranthene	(mg/kg)	7100	13500	8030
Fluorene	(mg/kg)	4260	7540	4350
Indeno(1,2,3-cd)pyrene	(mg/kg)	962	1850	1210
Naphthalene	(mg/kg)	64900	119000	64000

Only compounds detected are shown.

Table 2
Semi-Volatile Organic Compounds Detected - MGP DNAPL Samples
USEPA Method 8270/8270-SIM
Siltronic Corporation
Portland, Oregon

PERIOD: From 08/02/2001 thru 08/16/2005 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	WS-14-125 11/15/2004	WS-14-125 03/15/2005	WS-15-85 02/17/2005
Nitrobenzene	(mg/kg)	<10	<200	<38.5
N-Nitrosodimethylamine	(mg/kg)	<10	<200	<38.5
Phenanthrene	(mg/kg)	20900	36000	20800
p-Nitroaniline	(mg/kg)	<50	<999	<192
Pyrene	(mg/kg)	7920	15800	10500

Only compounds detected are shown.

Table 3
Total Petroleum Hydrocarbons - MGP DNAPL Samples
USEPA Method 8015
Siltronic Corporation
Portland, Oregon

PERIOD: From 08/02/2001 thru 08/16/2005 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE DATE	WS-11-125 01/28/2004	WS-11-125 04/27/2004	WS-15-85 02/17/2005
Automatic Trans Fluid	(mg/kg)	<25000	<10000	<19200
Diesel	(mg/kg)	593000	347000	104000
Gasoline	(mg/kg)	<10000	14900	<7690
Heavy Oil Range Hydrocarbon	(mg/kg)	180000	73100	79000
Hydraulic Oil	(mg/kg)	<25000	<10000	<19200
Kerosene	(mg/kg)	<25000	<10000	<19200
Mineral spirits	(mg/kg)	<10000	<4000	<7690

Laboratory noted that chromatograms for these samples did not match profiles for refined petroleum products.

Table 4
Metals and Cyanide Detected in MGP DNAPL Samples
USEPA Methods 6010/7471/9010
Siltronic Corporation
Portland, Oregon

PERIOD: From 08/02/2001 thru 08/16/2005 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE LAB SAMPLE I DATE	WS-10-27 0411078-01A 11/15/2004	WS-11-125 0411078-02A 11/15/2004	WS-14-125 0411078-03A 11/15/2004	WS-15-85 0502080-09A 02/17/2005
Aluminum	(mg/kg)	18.9	49.7	<65.8	<3.68
Arsenic	(mg/kg)	5.44	<1.92	3.24	<1.47
Barium	(mg/kg)	<0.909	<0.962	43.0	<0.735
Calcium	(mg/kg)	69.7	98.1	<65.8	55.8
Chromium	(mg/kg)	<0.455	<0.481	3.34	<0.368
Copper	(mg/kg)	<0.909	1.42	<1.32	<0.735
Cyanide	(mg/kg)	0.498	0.368	0.516	<1
Iron	(mg/kg)	52.1	106	53.0	50.4
Magnesium	(mg/kg)	9.86	16.2	25.0	33.1
Manganese	(mg/kg)	1.25	2.07	0.763	7.01
Mercury	(mg/kg)	<0.0143	<0.0132	0.0126	<0.0114
Nickel	(mg/kg)	7.79	4.33	4.68	<0.368
Sodium	(mg/kg)	44.4	60.2	39400	48.9
Vanadium	(mg/kg)	7.20	3.92	4.34	<0.735
Zinc	(mg/kg)	3.92	3.59	7.78	1.24

Only analytes detected are shown.

Table 5
Heat Value, pH, Specific Gravity and Viscosity - MGP DNAPL
USEPA Method 9045; ASTM D1298/D240/D445
Siltronic Corporation
Portland, Oregon

PERIOD: From 08/02/2001 thru 08/16/2005 - Inclusive
SAMPLE TYPE: Water

SITE	DATE	LAB SAMPLE ID	Heat Value (btu)	pH (ph)	Spec. Gravity (g/cc)	Viscosity @40C (cst)
WS-10-27	11/15/2004	0411078-01A	16700		1.12	
WS-11-125	01/28/2004	0402023-01		7.93	1.09	
WS-11-125	04/27/2004	0404128-06		7.01	1.01	
WS-11-125	11/15/2004	0411078-02A	17300		1.09	
WS-11-125	03/15/2005	0503060-01A			1.10	15.0
WS-14-125	11/15/2004	0411078-03A	17300		1.09	
WS-14-125	03/15/2005	0503060-02A			1.11	18.6
WS-15-85	02/17/2005	0502080-09A			1.11	42.2