

REMEDIAL INVESTIGATION REPORT

SeaTac 76 Retail Station #2611255

19924 International Boulevard, SeaTac, Washington 98188

Ecology Facility ID No. 71711362

VCP No. NW2690

Antea[®] Group Project No. I42611255

April 25, 2013

Prepared for:

Platinum Energy

30343 Canwood Street, Suite 200

Agoura Hills, CA 91301

Prepared by:

Antea Group

4006 148th Avenue NE

Redmond, WA 98052

800 477 4711

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Property Information	1
1.2	Purpose	1
2.0	SITE IDENTIFICATION AND DESCRIPTION	2
2.1	Site Discovery and Regulatory Status.....	2
2.2	Site and Property Description	3
2.3	Neighborhood Setting	3
2.4	Physiographic Setting/Topography	3
3.0	PROPERTY DEVELOPMENT AND HISTORY	3
3.1	Past Property Uses and Facilities	3
3.2	Current Property Use and Facilities	4
3.3	Proposed or Potential Future Property Uses	4
3.4	Zoning.....	4
3.5	Transportation/Roads	4
3.6	Utilities and Water Supply	4
3.7	Potential Sources of Contamination	5
3.8	Potential Sources of Contamination from Neighboring Properties	5
4.0	ENVIRONMENTAL INVESTIGATION/INTERIM ACTION SUMMARY	6
4.1	Constituents of Concern.....	6
4.2	Soil.....	6
4.3	Surface Water	7
4.4	Groundwater.....	7
4.5	Sediment	8
4.6	Air/Soil Vapor	8
4.7	Natural Resources/Wildlife	8
4.8	Cultural History/Archeology.....	8
4.9	Interim Actions.....	8
5.0	NATURAL CONDITIONS.....	10
5.1	Geology	10
5.2	Surface Water	10
5.3	Groundwater.....	10
5.4	Natural Resources and Ecological Receptors	11
6.0	CONTAMINANT OCCURRENCE AND MOVEMENT	11
6.1	Waste Material.....	11
6.2	Soil.....	11
6.3	Surface Water	13
6.4	Groundwater.....	14
6.5	Sediment	15
6.6	Air/Soil Vapor	15
7.0	CONCEPTUAL MODEL	15
7.1	Contaminant Release, Fate, and Transport.....	15
7.2	Potential and Actual Receptors.....	15
7.3	Data Gaps	16



8.0	CLEANUP STANDARDS	17
9.0	AREAS REQUIRING CLEANUP	17
9.1	Constituents of Concern.....	17
9.2	Soil – Vertical and Lateral.....	17
9.3	Groundwater – Vertical and Lateral.....	17
9.4	Surface Water	18
9.5	Sediment	18
9.6	Soil Vapor/Air	18
10.0	CONCLUSIONS	18
11.0	REFERENCES	19
12.0	REMARKS	20

TABLE OF CONTENTS (Cont.)

Table

Table 1	2012 Groundwater Gauging and Analytical Data
Table 2	Historic Groundwater Gauging and Analytical Data
Table 3	Groundwater Geochemical Data
Table 4	Soil and Groundwater Cleanup Levels

Figures

Figure 1	Property Location Map
Figure 2	Property Map
Figure 3	Property Layout with Subsurface Utility Locations
Figure 4	Soil Analytical Data Map – 2010 and 2011
Figure 5	Property Layout with Geologic Cross Section Lines A-A' and B-B'
Figure 6	Geologic Cross Section A-A'
Figure 7	Geologic Cross Section B-B'
Figure 8	Groundwater Flow Direction Rose Diagram
Figure 9	Groundwater Elevation Contour Map – 08/01/2012
Figure 10	Groundwater Analytical Data Map – 02/09/2012, 02/10/2012 and 08/01/2012

Appendices

Appendix A	Legal Description of Property
Appendix B	Summary of Previous Investigations and Remedial Activities
Appendix C	Historical Soil and Groundwater Analytical Data Tables
Appendix D	Soil Boring/Well Logs
Appendix E	Terrestrial Ecological Evaluation

Remedial Investigation Report

SeaTac 76 Retail Station #2611255

19924 International Boulevard, SeaTac, Washington 98188

VCP No. NW2690

1.0 INTRODUCTION

1.1 Property Information

Property Name	SeaTac 76 Retail Station #2611255
Property Address	19924 International Boulevard, SeaTac, Washington
Ecology Facility Site ID	71711362
LUST ID Number	1731
VCP Project No.	NW2690
Project Consultant	Antea Group
Project Consultant Contact Information	Bryan Taylor – Senior Project Manager 4006 148 th Avenue NE Redmond, Washington, 98052 Office – 425.882.3528 Direct – 425.498.7727
Current Owner/Operator	Platinum Energy

1.2 Purpose

Antea Group (Antea Group) has prepared this Remedial Investigation (RI) report on behalf of Platinum Energy for the active 76 branded retail station located on the northeast corner of International Boulevard and South 200th Street at 19924 International Boulevard, SeaTac, King County, Washington (the Property, Figure 1).

This RI report was prepared to include the required items in Washington Administrative Code (WAC) 173-340-350 and summarizes environmental investigations associated with the petroleum hydrocarbon release at the retail station. The background and previous work history presented in this report is a summary of investigations and documents prepared by Antea Group and previous consultants.

2.0 SITE IDENTIFICATION AND DESCRIPTION

2.1 Site Discovery and Regulatory Status

In April 1991, RZA AGRA Inc. (RZA) performed a subsurface investigation to evaluate the soil and groundwater in the vicinity of the underground storage tanks (USTs) and associated dispenser islands at the Property. RZA directed the advancement of five soil borings (B-1 through B-5) to depths of between 33 feet and 40 feet below ground surface (bgs). Soil samples were analyzed for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and total lead. Soil analytical results indicated concentrations of TPH and BTEX were not detected above the laboratory method reporting limits (MRLs) and/or the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels.

Four of the soil borings were completed as monitoring wells MW-1, MW-3, MW-4, and MW-5. Groundwater samples collected from the wells were analyzed for TPH, BTEX, and total lead. Analytical results indicated that the groundwater sample collected from well MW-4 contained concentrations of TPH as gasoline (TPH-G) and BTEX at 32,000 parts per billion (ppb), 7,890 ppb, 10,700 ppb, 62 ppb, and 5,370 ppb, respectively. A lead concentration of 24 ppb was also detected in the sample collected from well MW-4. RZA returned to the Property in June 1991 and observed that approximately 0.1 foot of light non-aqueous phase liquids (LNAPL) was present within well MW-4. A product recovery system was subsequently installed within well MW-4.

In January 1992, RZA conducted an additional investigation which included the advancement of soil borings B-6 through B-8 to depths between 37 and 49.5 feet bgs. Soil samples collected between 23.5 feet and 47.5 feet bgs contained concentrations of TPH-G and BTEX up to 1,300 parts per million (ppm), 2.50 ppm, 25.00 ppm, 10.00 ppm, and 43.00 ppm, respectively. Soil borings B-6 through B-8 were completed as monitoring wells MW-6 through MW-8 and well MW-4 was over-drilled from the original depth of 33.5 feet to a depth of 45 feet bgs. Upon over-drilling of well MW-4, the product recovery system was not reinstalled due to lack of groundwater. In addition, the depth of water present after well installation varied significantly indicating a perched water table was present at the Property. Groundwater samples were collected from wells MW-1, MW-3, MW-5, MW-6, and MW-7; however, wells MW-4 and MW-8 did not contain sufficient groundwater for sampling. Concentrations of TPH-G and BTEX were detected up to 9,100 ppb, 610 ppb, 6,900 ppb, 1,000 ppb, and 14,000 ppb, respectively.

A notice of confirmed release was filed with Ecology's Leaking Underground Storage Tank (LUST) program on March 31, 1992 and the station was listed with the LUST program, ID number 1731. Site characterization and remedial activities are currently being conducted by SeaTac 76 in accordance with MTCA within the Voluntary Cleanup Program (VCP). The Property is currently listed in the Ecology LUST database with a status of "cleanup started". Antea Group is the current consultant for this Property. The next anticipated phase of work is to perform remedial testing to determine the appropriate remedial approach for soil and groundwater impacts remaining at the Property.

2.2 Site and Property Description

The Property is an active retail fueling station located on the northeast corner of International Boulevard (Pacific Highway South/SR-99) and South 200th Street in SeaTac, Washington (Figure 1). The retail station facility consists of a station building and one large canopy covering a concrete drive slab with six dispenser islands. The underground storage tank (UST) complex is located in the northeast portion of the Property. According to Ecology's UST Database, the current USTs are constructed of single wall fiberglass reinforced plastic and consist of one 12,000-gallon unleaded gasoline tank, one 10,000-gallon unleaded gasoline tank and one 6000-gallon unleaded gasoline tank. The current USTs were installed in 1983.

Historical soil analytical results indicate that impacts have not been adequately defined in the vicinity of the dispenser islands. Analytical data from subsurface investigations conducted in 2010 and 2011 indicates that soil impacts are defined in the southern and southeastern portions of the Property and that dissolved-phase impacts extend off-Property into South 200th Street. Due to the presence of underground utilities and traffic signal boxes, the extent of impact to soil and groundwater within the southwest portion of the Property could not be determined. Therefore, for the purposes of this RI report, the actual MTCA Site (Site) location includes the Property and extends into South 200th Street to include the dissolved-phase impacts detected within well MW-14 (Figure 2). The implications of the analytical data collected to date are further described in Sections 6.0 and 7.0. A discussion of Site data gaps is included within Section 7.3.

2.3 Neighborhood Setting

Land use in the vicinity of the Property consists primarily of commercial and residential developments. The Property is bound to the south by South 200th Street; beyond 200th Street is a 7-Eleven retail station (formerly a CITGO retail station). The Property is bound to the west by Pacific Highway South followed by a Chevron retail station. A restaurant is located to the north of the Property and a residential mobile home community is located to the east of the Property.

2.4 Physiographic Setting/Topography

The Property is situated approximately 400 feet above mean sea level in the Puget Sound watershed basin. The area to the west of the Property slopes towards the Tyee Valley and the areas to the east and northeast of the Property slope towards Angle Lake (Figure 1). Angle Lake, the nearest surface water body, is located approximately 900 feet northeast of the Property. With the exception of landscaped areas on the north, south, and west perimeter of the Property, the remainder of the Property is paved with asphalt or concrete.

3.0 PROPERTY DEVELOPMENT AND HISTORY

3.1 Past Property Uses and Facilities

The current station was built in 1973 and was operated by Mobil Gas until being purchased in 1989 by BP Exploration and Oil, Inc. Tosco Corporation subsequently purchased the retail station in 1993, followed by

Northwest Dealer Company Holdings LLC in 2009. In 2010, the Property was purchased by Sunny Monny Rajan Inc. The Property currently operates under the business ownership of SeaTac 76. A legal description of the Property, including past and present owners, is included in Appendix A.

3.2 Current Property Use and Facilities

The UST system was removed and replaced in 1983. The Property continues to operate as a retail fueling station facility.

3.3 Proposed or Potential Future Property Uses

The potential planned use for the Property is continued operation as a retail fueling station facility.

3.4 Zoning

According to the City of SeaTac Zoning Map (updated June 15, 2011), the Property and surrounding areas to the north, south, and west are zoned as Community Business in Urban Center. The area to the east of the Property is zoned as Urban High Density Residential.

3.5 Transportation/Roads

The Property is an active retail fueling station located on the northeast corner of International Boulevard and South 200th Street. International Boulevard, also called Pacific Highway South, is a State Route (SR-99) that runs north-south and provides access to the west and northwest portions of the Property. South 200th Street runs east-west and provides access to Interstate 5, located approximately one-half mile to the east of the Property. South 200th Street provides access to the southern portion of the Property. Public bus stops are located on International Boulevard in both directions.

3.6 Utilities and Water Supply

The Property's water meter and fire hydrant connect to an 8-inch diameter water main that runs north-south along International Boulevard. An 8-inch diameter water main located within South 200th Street connects to the water main located within International Boulevard (Figure 3). The water mains are serviced by Highline Water District #75. The depths of the water mains and the location of the service connection to the station building are unknown.

Surface water runoff from the Property flows into two storm drains located in the southern portion of the Property. The stormwater passes through an oil/water separator prior to connection with a 12-inch diameter PVC storm drain line located within South 200th Street. This storm drain line connects to a 12-inch diameter PVC storm drain line located in International Boulevard (Figure 3). The storm drain lines are located at an approximate depth of 4 feet bgs and are serviced by the City of SeaTac.

The Property's sanitary sewer service is provided by Midway Sewer District and enters the station building from the south. A second sanitary sewer line is connected to the storage building located in the northeast corner of the Property. The sanitary sewer lines run south and connect to a sewer main located within South 200th Street. In addition, the sanitary service for the northern adjacent property runs along the western edge of the Property (Figure 3). The depths of the sanitary sewer lines are unknown.

A utility trench including electrical power and cable lines runs north-south along the western Property edge at a depth of approximately seven feet bgs. The electric lines branch to several traffic signal boxes and a transformer located in the Property's southwest planter area (Figure 3). The Property's electricity is serviced by Puget Sound Energy (PSE) from the single-phase transformer located in the southwest planter. The location of the electric line providing service from the transformer to the station building is unknown.

One 2-inch gas line runs east-west along the southern edge of South 200th Street. This gas line connects to a 4-inch gas line located within the east side of International Boulevard (Figure 3). The gas lines are serviced by PSE and are located at an unknown depth. According to PSE, the Property does not have a natural gas service.

The utility corridors may be considered a preferential pathway for the former petroleum hydrocarbon release. However, as indicated by the groundwater analytical data collected for the Site (Table 1), the petroleum hydrocarbons have vertically migrated to the water table. Groundwater has been encountered in the monitoring wells at depths between 16 feet and 50 feet bgs. Although many of the depths of the Property's and nearby subsurface utilities are unknown, utilities are typically located within the upper 10 feet of the subsurface. Since the off-Property impacts are in an area that is hydrologically down-gradient from the likely source of petroleum hydrocarbons, the likelihood that the subsurface utilities are a preferential pathway for dissolved-phase plume migration is unlikely.

3.7 Potential Sources of Contamination

The likely source of hydrocarbon release at the Property includes the dispensers, located in the central western portion of the Property, and the associated product piping (Figure 2).

3.8 Potential Sources of Contamination from Neighboring Properties

A search was completed within the Ecology LUST database to identify active LUST sites within a one-mile radius of the Property. Four LUST sites consisting of two retail fueling stations, one hotel, and a service location were identified between approximately 4,200 feet and 4,800 feet to the north of the Property. A LUST site associated with airline operations was also identified approximately 3,000 feet to the north-northeast of the Property. Due to the distance of these LUST sites, and the fact that they are located at a lower elevation than the Property, they are not considered to be potential sources of impact to the Property.

One LUST site associated with Highline Water District's shop yard was identified approximately 400 feet to the west of the Property. Due to the cross-gradient location, this site is not considered to be a potential source of impact to the Property.

Five LUST sites were identified to the south of the Property. One LUST site, a vehicle and truck rental facility, is located approximately 200 feet south of the Property. Although this site is in close proximity to the Property, the site's down-gradient location makes it an unlikely source of impact to the Property. A retail fueling station and a rental car facility were identified approximately 2,300 feet south of the Property. Lastly, two retail fueling stations were identified approximately 5,000 feet to the south of the Property. Due to the down-gradient location and distances of these LUST sites, they are not considered to be potential sources of impact to the Property.

4.0 ENVIRONMENTAL INVESTIGATION/INTERIM ACTION SUMMARY

The following investigations have been completed at the retail fueling station Property:

- *Subsurface Petroleum Hydrocarbon Evaluation – March 1992, RZA*
- *Additional Subsurface Petroleum Hydrocarbon Assessment – June 1993, RZA*
- *Baseline Assessment Report – May 1994, EMCON*
- *Vapor Extraction System Testing and Evaluation Report – March 5, 1998, Alisto Engineering Group*
- *Subsurface Investigation Report – July 17, 2012, Antea Group*

A chronological summary of investigations listed above is included as Appendix B. This summary represents all available investigation reports obtained by or provided to Antea Group. Historical soil analytical data tables are attached as Appendix C. Soil analytical data obtained from the 2010 and 2011 subsurface investigations are included on Figure 4 and the associated data table is included within Appendix C. All available historical boring logs for the previous investigations are included in Appendix D.

4.1 Constituents of Concern

In accordance with MTCA 173-340-900 Table 830-1, soil samples collected from the Site have been analyzed for TPH-G, TPH as diesel (TPH-D), TPH as oil (TPH-O), BTEX, total lead, and methyl tert-butyl ether (MTBE). Groundwater samples collected from the Site have been analyzed for TPH-G, TPH-D, TPH-O, BTEX, MTBE, 1,2 dichloroethane (EDC), 1,2 dibromomethane (EDB), and total and dissolved lead. The available data indicate that the soil and groundwater have been adequately defined in accordance with current requirements in MTCA 173-340-900 Table 830-1.

Based on the investigations conducted at the Site, analytical data indicates that the constituents of concern (COCs) are related to gasoline releases. However, historical soil data and recent groundwater analytical data indicate that concentrations of TPH-D and TPH-O have been detected above the MTCA Method A cleanup levels. These detections could be a result of highly weathered gasoline eluding in the diesel carbon range during laboratory analysis. According to Ecology's UST database, the current USTs were installed in 1983 and store gasoline. While there is no evidence that diesel or motor oil were stored on the Property, Antea Group will continue to monitor the groundwater for these constituents. For the purposes of this RI, the COCs are considered to be TPH-G, TPH-D, TPH-O BTEX, MTBE, and lead.

4.2 Soil

The initial investigation conducted by RZA in April 1991 was performed to document environmental conditions of the Property as part of a real estate transaction. The investigation included the advancement of five soil borings (B-1 through B-5) to a maximum depth of 40 feet bgs. One soil sample was collected from each boring between 17 feet and 24 feet bgs. Soil borings B-1 and B-3 through B-5 were converted to monitoring wells MW-1 and MW-3 through MW-5. The subsequent investigation conducted by RZA in January 1992 included the advancement of soil borings B-6 through B-8 to depths between 37 feet and 49.5 feet bgs and the over-drilling of well MW-4. Two soil

samples were collected from each boring between 23.5 feet and 47.5 feet bgs to document soil conditions in the vicinity of the southern dispenser island. The borings were completed as monitoring wells MW-6 through MW-8. One soil sample was also collected from a depth of 45 feet during the over-drilling of well MW-4. In April 1994, EMCON collected soil samples during the installation of a Stage II vapor recovery system. Five soil samples were collected at depths between 1 and 2 feet bgs from the dispenser island areas and the UST complex.

The subsurface investigation conducted by Delta Consultants, Inc. (Delta) in June 2010 included the advancement of five soil borings to document soil conditions in the southern and eastern portions of the Property. The borings were advanced to depths between 34 feet and 36.5 feet bgs and a total of 22 soil samples were collected at depths ranging from 10 feet to 36 feet bgs. The five soil borings were completed as monitoring wells MW-9 through MW-13.

In June and July of 2011, Antea Group directed the installation of four groundwater monitoring wells (MW-14 to MW-17) and two air sparge wells (AS-1 and AS-2). Boring locations were placed adjacent to and down-gradient from existing monitoring wells that were improperly screened in 1992. Soil borings were advanced to approximate depths of 35 feet to 40 feet bgs. Soil samples were collected at five foot intervals from borings MW-14 and MW-15 from 5 feet to 25 feet bgs. Soil samples were not collected for analysis from borings MW-16, MW-17, AS-1, and AS-2 due to the sonic drilling method and the high temperature of soils recovered.

Since the initial investigations completed by RZA and subsequent notification to Ecology's LUST Program on March 31, 1992, the majority of soil sampling has been conducted in the vicinity of the dispenser islands and in the southern portion of the Property. The depths of soil samples collected range from 1 foot to 36 feet bgs. The locations of all soil samples collected to date are shown on Figure 2. Soil analytical data collected in 2010 and 2011 are summarized on Figure 4 and soil analytical data tables are included in Appendix C.

4.3 Surface Water

Surface water runoff from the Property flows into two storm drains located in the southern portion of the Property. The stormwater passes through an oil/water separator prior to connection with a storm drain line located within South 200th Street. Angle Lake is the nearest surface water body and is located approximately 900 feet northeast of the site. No indication of surface water impact has been identified in association with the Property. Therefore, no surface water sampling has been conducted.

4.4 Groundwater

In April 1991, RZA directed the installation of four monitoring wells (MW-1 and MW-3 through MW-5) to document groundwater conditions as part of a real estate transaction. The wells were installed in the northern, central, and eastern portions of the Property to depths between 28 feet and 35 feet bgs. The initial groundwater monitoring event performed on April 16, 1991, indicated that groundwater within well MW-4 was impacted with petroleum hydrocarbons. RZA returned to the Property in June 1991 and observed that approximately 0.1 foot of LNAPL was present within well MW-4 and initiated product recovery efforts.

RZA performed an additional assessment in January 1992 which included the installation of wells MW-6 through MW-8. The wells were installed down-gradient from well MW-4 to depths between 37 feet and 48 feet bgs. In

addition, RZA directed the over-drilling of well MW-4 to a depth of 45 feet bgs. Intermittent groundwater sampling was performed following the installation of the monitoring wells. In 1995, the groundwater sampling frequency increased to quarterly; however, in 2001, the frequency was reduced to semi-annual monitoring.

In 2010, Delta directed the installation of wells MW-9 through MW-13 to depths between 32 feet and 35 feet bgs. The wells were installed in the southern and eastern portion of the Property to delineate the dissolved-phase plume. In June and July of 2011, Antea Group directed the installation of monitoring wells MW-14 through MW-17 to depths between 32 feet and 35 feet bgs. Wells MW-14 and MW-15 were installed to the south of the Property within South 200th Street to monitor the down-gradient dissolved-phase plume. Wells MW-16 and MW-17 were installed adjacent to and down-gradient from existing monitoring wells that were improperly screened in 1992.

Groundwater monitoring is currently being performed on a semi-annual frequency. The most recent analytical results from the 2012 sampling events are summarized in Table 1. Historical groundwater analytical data obtained in April 1991 is included within Appendix C. A summary of groundwater analytical data and groundwater elevations from January 1992 through September 2011 is provided in Table 2. The groundwater analytical data is further discussed within Section 6.4. A summary of groundwater natural attenuation parameters is presented in Table 3.

4.5 Sediment

Sediment sampling has not been conducted at the Property since there has been no indication of surface water impacts associated with the retail station.

4.6 Air/Soil Vapor

Subsurface soil vapor sampling has not been conducted at the Property. It is not known if the current concentrations of COCs within soil present a vapor intrusion pathway to the station building and represents a data gap (Section 7.3).

4.7 Natural Resources/Wildlife

A Terrestrial Ecological Evaluation (TEE) was completed for the Property and is included in this report (refer to Section 5.4).

4.8 Cultural History/Archeology

Information collected in regards to the historical use of the Property does not indicate that additional investigation of Property history or archeology is necessary.

4.9 Interim Actions

In June 1991, RZA observed approximately 0.1 foot of LNAPL within well MW-4. RZA subsequently installed a product recovery system to recover LNAPL. Details of the recovery system, including the volume of LNAPL recovered, were not reported. According to RZA's *Additional Subsurface Petroleum Hydrocarbon Assessment* report dated June 1993, well MW-4 was over-drilled in an attempt to re-establish groundwater and LNAPL recovery. However, upon drilling to 45 feet bgs, additional groundwater was not encountered and therefore, the product recovery system was removed from well MW-4.

Alisto Engineering Group (Alisto) reportedly connected well MW-4 to a soil vapor extraction (SVE) system at the Property; however, the date of installation and system startup is unknown. According to a report prepared by Alisto on March 5, 1998, Alisto completed repairs to the SVE system on August 26, 1997, and performed an extraction test at well MW-4 on August 27, 1997. The test indicated that the SVE radius of influence from well MW-4 was 50 feet with a minimum vacuum of 30 inches of water column (in. w.c.) at 35 to 40 cubic feet per minute (cfm) of air flow. According to Alisto's report, the SVE system operated continuously from August 27, 1997, through approximately March 1998. The SVE system removal rate was approximately eight pounds of hydrocarbons per day, which would be a total of approximately 1,600 pounds of hydrocarbons removed. At this time, it is unknown if the system operated after March 1998. The SVE system was subsequently dismantled and removed from the Property. Details of the system decommissioning were not found during Antea Group's review of the Property.

In January 2011, Antea Group conducted pilot testing at the Property to determine if SVE and air sparge (AS) were feasible remedial alternatives to address the hydrocarbon impacts remaining at the Site. The SVE blower extracted up to approximately 29 cfm and 32 cfm from wells MW-7 and MW-8, respectively. The maximum vacuum tested was 40 in. w.c. from well MW-8. The maximum extracted TPH concentrations were measured in the vapor recovered from well MW-8 at 8,100 parts per million by volume (ppmv). During this test, the SVE radius of influence was measured at 32 feet during extraction from well MW-8.

Antea Group performed a second phase of AS/SVE testing in June 2012. During this test, the SVE blower extracted up to approximately 38 cfm and 32 cfm from wells MW-6 and MW-17, respectively. The maximum vacuum tested was 22 in. w.c. during extraction at well MW-17. Concentrations of TPH were detected up to 2,900 ppmv in the vapor recovered from well MW-17. Due to the variations in data observed during this test, the radius of influence could not be determined. Air sparge was conducted at wells AS-1 and AS-2. During this test, the blower injected air up to 14 pounds per square inch (psi) in well AS-1 and 20 psi in well AS-2. Maximum flow rates of 3.5 cfm and 4.5 cfm were achieved within wells AS-1 and AS-2, respectively. The radius of influence for air sparge was determined to be 20 feet (AS-1) and 4 feet (AS-2).

Antea Group performed a water injection pilot test at the Property on February 1, 2013. The test was performed at existing wells AS-1 and AS-2. Although water was being injected at pressures up to 22 psi, the flow rate into the injection wells ranged from 0.06 gallons per minute (gpm) up to 0.5 gpm. The results of the test indicated that the subsurface does not have the capacity to accept the amount of in-situ chemical oxidation (ISCO) products estimated to be necessary to reduce the mass of hydrocarbon contaminants remaining within the subsurface.

In order to collect more conclusive data, Antea Group performed a 3-day AS/SVE test in February 2013. The tests involved conducting a SVE step test on well MW-16, performing air sparge at well AS-1, and conducting a bail down test at well MW-9. The AS/SVE data indicated that while satisfactory air flow, vacuum, and injection pressures were maintained within the subsurface, the hydrocarbon vapor recovery significantly decreased over the course of the 3-day test. Based on the decreasing trend, installation of a full-scale AS/SVE system was determined to not be the best remedial approach for the Site. During the bail down test performed at well MW-9, the well went dry after purging 1.5 gallons and returned to the original water level after 30 hours of monitoring. The data collected

during the bail down test indicated a hydraulic conductivity of 1.08×10^{-5} centimeter per second (cm/sec), which is characteristic of a semi-pervious, low-producing aquifer.

5.0 NATURAL CONDITIONS

5.1 Geology

The Property is located within the south Puget Sound Basin, which is classified as unconsolidated Pleistocene continental glacial drift. The glacially derived materials found in the vicinity of the Property primarily consist of Vashon Glacial Till deposited during the Vashon Stage of glaciation. The Vashon Till extends to a depth of approximately 50 feet bgs and overlies glacial till from the Salmon Springs Drift Formation which is comprised of oxidized sand and gravel with an approximate thickness of 50 feet.

Subsurface soils observed at the Property generally consist of dense to very dense silty, fine to medium sand with some gravel and discontinuous lenses of sand, silt, and gravel to an approximate depth of 35 feet. Between 35 feet and 49 feet, the maximum depth explored, subsurface soils generally consist of very dense, gravelly, fine to coarse sand. Based on the subsurface conditions observed during drilling, the recessional sedimentation associated with these glacial deposits has likely created multiple non-cohesive sand and gravel lenses bounded by semi-permeable confining silt layers. These sand and gravel lenses may be acting as temporary groundwater storage areas and are likely creating perched groundwater conditions at the Site. Figure 5 shows the location of the lines of cross-sections depicting soil conditions at the Property (Figures 6 and 7).

5.2 Surface Water

Surface water runoff from the Property enters existing municipal storm water drains located in the southern and southeastern portions of the Property. The surface water flows through an oil/water separator prior to draining into the City of SeaTac storm water line that is located within South 200th Street (Figure 3). Angle Lake is the nearest surface water body and is located approximately 900 feet northeast and hydraulically upgradient of the Property (Figure 1).

5.3 Groundwater

Groundwater has been encountered at the Site between 15 and 49 feet bgs (Table 2). The high variability of the groundwater elevations indicate that the subsurface geology is creating perched groundwater tables across the Site. Groundwater flow is typically to the south-southwest and southwest; however, flow direction has been historically observed to the east and southeast (Figure 8). The groundwater monitoring data indicate that the gradient ranges between 0.022 to 0.073 feet per linear foot. Figure 9 illustrates the direction of groundwater flow and gradient as measured during the third quarter of 2012. Bail down tests completed by Antea Group and previous consultants indicate a hydraulic conductivity ranging between 1.08×10^{-5} cm/s and 1.5×10^{-4} cm/s.

A search completed within the Ecology Well Log database identified 19 water supply wells within a one-mile radius of the Property. Seven water supply wells associated with Highline Water District, King County Water District #75,

Highline Public Schools, and the Port of Seattle were identified between approximately 2,400 feet and 4,000 feet to the northwest of the Property. The water supply wells range in depth from 136 feet to 550 feet bgs. A private water supply well was identified approximately 5,100 feet to the north of the Property and was installed to a depth of 61 feet. A water supply well associated with King County Water District #75 was identified approximately 4,000 feet to the north-northeast of the Property and was installed to a depth of 210 feet. One private water supply well was identified approximately 3,000 feet northeast of the Property and was installed to a depth of 60 feet bgs. Three private water supply wells were identified to the east of the Property and range in depth between 51 feet and 73 feet bgs. Two Highline Water District supply wells and one King County Water District #75 supply well were identified approximately 3,700 feet to the south of the Property. The wells were installed to depths between 253 feet and 268 feet bgs. Lastly, three water supply wells associated with King County Water District #75 and Washington Natural Gas were identified between approximately 2,000 feet and 4,000 feet to the southwest of the Property and were installed to depths between 200 feet and 270 feet.

The search completed within Ecology's Well Log database indicates that the down-gradient water supply wells were installed to depths greater than 200 feet bgs, with the deepest well extending to a depth of 270 feet bgs. These wells are located between 2,000 feet and 4,000 feet from the Property. Based on the depths and distances of these down-gradient water supply wells, impact from contaminants associated with the Property is unlikely. The remaining wells identified during the database search are located up-gradient or cross-gradient from the Property. Therefore, the location of these wells makes impact from contaminants associated with the Property unlikely.

5.4 Natural Resources and Ecological Receptors

A Simplified TEE was completed for the Property. The simplified TEE exposure analysis indicated that since land use at the Property and surrounding area make substantial wildlife exposure unlikely (according to Table 749-1), the Property does not have a substantial potential for posing a threat of significant adverse effects to terrestrial ecological receptors. The simplified TEE indicated that the Property conditions are protective of terrestrial ecological receptors and no further analysis was required. The TEE is included as Appendix E.

6.0 CONTAMINANT OCCURRENCE AND MOVEMENT

6.1 Waste Material

Waste associated with previous investigations was transported off-site for proper disposal. Therefore, discussion of the occurrence or movement of contaminants in this media is not applicable.

6.2 Soil

The initial investigation conducted by RZA in April 1991 included the advancement of soil borings B-1 through B-5 to a maximum depth of 40 feet bgs. As stated in Section 4.2, the borings were completed as monitoring wells MW-1 and MW-3 through MW-5 (Figure 2). Soil samples were collected from each boring between 17 feet and 24

feet bgs. Concentrations of TPH, BTEX, and lead were either not detected above the laboratory MRLs or were detected below the MTCA Method A cleanup levels. The subsequent investigation conducted by RZA in January 1992 included the advancement of soil borings B-6 through B-8 (wells MW-6 through MW-8) to depths between 37 feet and 49.5 feet bgs. Two soil samples were collected from each boring between 23.5 feet and 47.5 feet bgs. Concentrations of TPH were detected above the MTCA Method A cleanup level in soil samples collected from borings B-6 through B-8 and ranged up to 1,300 ppm (B-8 at 27.5 feet bgs). Concentrations of benzene were detected above the MTCA Method A cleanup level in all samples collected from borings B-6 through B-8 and ranged from 0.08 ppm to 2.5 ppm (B-8 at 27.5 feet bgs). Concentrations of toluene, ethylbenzene, and total xylenes were detected above the MTCA Method A cleanup level in the soil sample collected at 27.5 feet bgs from boring B-8 at 25.0 ppm, 10.0 ppm, and 43.0 ppm, respectively. It should be noted that RZA collected a duplicate soil sample from boring B-6 at a depth of 27.5 feet bgs. The duplicate soil sample contained a concentration of total xylenes above the MTCA Method A cleanup level at 12.0 ppm. In addition, RZA collected a soil sample at 45 feet bgs during the over-drilling of well MW-4. Concentrations of COCs were not detected above the laboratory MRLs in this soil sample. The results of RZA's January 1992 investigation indicate that the impacts to soil were likely associated with release(s) from the southern dispenser island. The soil analytical results from the April 1991 and January 1992 investigations are included within Appendix C.

In April 1994, EMCON collected soil samples during the installation of a Stage II vapor recovery system. Four soil samples were collected at depths between 1 and 2 feet bgs from the northeast, central-west, southeast, and southwest dispenser island areas. Soil analytical results indicated that concentrations of TPH-G were detected above the MTCA Method A cleanup level in all four samples ranging from 31 ppm (southeast dispenser) up to 14,000 ppm (central-west dispenser). A concentration of TPH-D was detected above the MTCA Method A cleanup level in the soil sample collected from the northeast dispenser at 2,820 ppm. Concentrations of benzene were detected above the MTCA Method A cleanup level in the soil samples collected from the northeast and southwest dispensers at 0.14 ppm and 0.25 ppm, respectively. Concentrations of toluene, ethylbenzene, and total xylenes were detected above the MTCA Method A cleanup levels in the soil sample collected from the central-west dispenser at 87 ppm, 40 ppm, and 980 ppm, respectively. The soil sample collected from the southwest dispenser contained a concentration of total xylenes above the MTCA Method A cleanup level at 16.8 ppm. During the vapor recovery system upgrade, EMCON also collected a soil sample from the UST excavation. Concentrations of TPH-G and BTEX were detected above the MTCA Method A cleanup levels at 18,000 ppm, 240 ppm, 1,200 ppm, 280 ppm, and 1,600 ppm, respectively. The depth of the soil sample was not reported, but it appears the sample was collected from the overburden covering the USTs. The soil analytical results obtained during the vapor recovery upgrade indicate that the soil impacts are related to release(s) from the dispenser islands and associated product piping. The locations of the soil samples collected during EMCON's assessment are shown on EMCON's Figure D-1 of Appendix E. The soil analytical data table is included in Appendix C.

The subsurface investigation conducted by Delta in June 2010 included the advancement of five soil borings in the southern and eastern portions of the Property. The borings were advanced to depths between 34 feet and 36.5 feet bgs and were completed as monitoring wells MW-9 through MW-13. A total of 22 soil samples were collected at depths ranging from 10 feet to 36 feet bgs. Concentrations of TPH-G were detected above the MTCA Method A

cleanup level in the soil samples collected at 10 feet and 30 feet bgs from MW-10 at 1,180 milligrams per kilogram (mg/kg) and 2,800 mg/kg, respectively. The soil sample collected from MW-10 at 30 feet bgs also contained concentrations of ethylbenzene and total xylenes above the MTCA Method A cleanup level at 15.1 mg/kg and 71.5 mg/kg, respectively. Concentrations of benzene were detected above the MTCA Method A cleanup level in the soil samples collected at 30 feet and 33 feet bgs from MW-9 at 0.0367 mg/kg and 0.0908 mg/kg, respectively. Soil samples collected from borings MW-11 through MW-13 did not contain concentrations of TPH-G and BTEX above the laboratory MRLs. The analytical results indicate that the source of impact to soil in the vicinity of well MW-9 and MW-10 is likely from the dispenser islands. The soil analytical results from the June 2010 borings are shown on Figure 4 and the soil analytical data table is included within Appendix C.

In June and July of 2011, Antea Group directed the installation of four groundwater monitoring wells (MW-14 to MW-17) and two air sparge wells (AS-1 and AS-2). Soil borings were advanced to approximate depths of 35 feet to 40 feet bgs. The soil analytical results indicate concentrations of TPH-G, TPH-D, TPH-O, BTEX, and MTBE were not detected above the laboratory MRLs in the soil samples collected between 5 feet and 25 feet bgs from borings MW-14 and MW-15. As stated in Section 4.2, soil samples were not collected from borings MW-16, MW-17, AS-1 and AS-2 due to the drilling methods utilized. The soil analytical results from the 2011 borings are shown on Figure 4 and the soil analytical data table is included within Appendix C.

Based on the investigations conducted between 1991 and 2011, the impacts to soil were likely related to historical releases from the dispenser islands and/or the associated product piping. The soil analytical results obtained during these investigations indicate that soil impacts were detected in the shallow soils adjacent to the dispenser islands and extend to the southeast, south, and southwest from the southern dispenser island at depths between 10 feet and 33 feet bgs. The depth and extent of the impacts in the region of the dispenser islands is unknown and represents a data gap. In addition, the extent of impact to soil within the southwest portion of the Property is unknown. The presence of underground utilities and traffic signal boxes makes the advancement of borings in this location difficult. Soil impact was also detected within the UST excavation conducted during the vapor system upgrades performed in 1994. Although the depth of this impact is unknown, groundwater monitoring performed at adjacent well MW-3 indicates that a release from the USTs has likely not occurred. The soil impact was likely related to the product piping in this area.

6.3 Surface Water

Surface water runoff from the Property enters existing municipal storm water drains located in the southern and southeastern portions of the Property. The surface water flows through an oil/water separator prior to draining into the City of SeaTac storm water system. Angle Lake is the nearest surface water body and is located approximately 900 feet northeast of the Property. No indication of surface water impact has been identified in association with the Property; therefore, discussion of contaminant occurrence and movement within this media is not necessary.

6.4 Groundwater

Between April 1991 and January 1992, eight groundwater monitoring wells were installed at the Property. As previously mentioned, LNAPL was observed within well MW-4 up to 0.1 foot. LNAPL was last detected within well MW-4 in 1996; however, LNAPL was also detected within wells MW-6 and MW-7 at thicknesses up to 2.93 feet and 5.17 feet, respectively (Table 2). LNAPL has not been detected in any wells associated with the Site since 2005.

Historical groundwater monitoring data indicates that the dissolved-phase plume was predominantly located in the southern portion of the Property, in the vicinity of wells MW-6 through MW-8. Concentrations of TPH-G have been detected up to 88,600 micrograms per liter ($\mu\text{g/L}$; well MW-7) and concentrations of BTEX have been detected up to 11,000 $\mu\text{g/L}$, 2,800 $\mu\text{g/L}$, 11,000 $\mu\text{g/L}$, and 16,000 $\mu\text{g/L}$ (well MW-6), respectively. In addition, groundwater monitoring conducted in 1992, 1996, and 2001 indicated concentrations of TPH-G and/or benzene exceeded the MTCA Method A cleanup level in well MW-3. Well MW-4 also previously contained concentrations of TPH-G and BTEX above the MTCA Method A cleanup levels; however, this well has been in compliance with the cleanup levels since May 2009.

Eight additional monitoring wells (MW-9 through MW-17) were installed at the Site in 2010 and 2011. Groundwater monitoring performed at these wells and at wells MW-1 and MW-3 through MW-8 in 2011 indicated that the dissolved-phase plume is defined in the southeast portion of the Property by wells MW-11 through MW-13. However, the dissolved-phase plume is not defined to the south of well MW-14 and to the southwest of wells MW-9 and MW-17 (Tables 1 and 2).

The most recent groundwater monitoring event was performed on August 1, 2012. The groundwater analytical data obtained during this event indicate that TPH-G was detected above the MTCA Method A cleanup level in wells MW-6 through MW-10, MW-16, and MW-17 at concentrations ranging from 4,930 $\mu\text{g/L}$ (MW-7) to 59,900 $\mu\text{g/L}$ (MW-16). TPH-D was detected above the MTCA Method A cleanup level in wells MW-6, MW-8 through MW-10, MW-16, and MW-17 at concentrations ranging from 649 $\mu\text{g/L}$ (MW-17) to 2,070 $\mu\text{g/L}$ (MW-6). Benzene was detected above the MTCA Method A cleanup level in the groundwater samples collected from wells MW-6, MW-8, MW-9, MW-16, and MW-17 at concentrations ranging from 100 $\mu\text{g/L}$ (MW-17) to 811 $\mu\text{g/L}$ (MW-16). A concentration of toluene exceeded the MTCA Method A cleanup level in the groundwater sample collected from well MW-16 at 1,950 $\mu\text{g/L}$. Groundwater samples collected from wells MW-6, MW-9, and MW-16 contained ethylbenzene above the MTCA Method A cleanup level at concentrations of 712 $\mu\text{g/L}$, 818 $\mu\text{g/L}$, and 1,420 $\mu\text{g/L}$, respectively. Total xylenes were also detected above the MTCA Method A cleanup level in the groundwater samples collected from wells MW-6, MW-9, and MW-16 at concentrations of 2,200 $\mu\text{g/L}$, 1,430 $\mu\text{g/L}$, and 6,900 $\mu\text{g/L}$, respectively (Table 1).

Historical groundwater monitoring data from previous consultants is contained within Appendix C. A summary of groundwater analytical data and groundwater elevations from 1992 through 2011 is provided in Table 2. Recent groundwater analytical results from 2012 are summarized in Table 1 and are shown on Figure 10.

6.5 Sediment

Angle Lake is located approximately 900 feet northeast of the Property. No indication of sediment impact has been identified in association with the Property; therefore, discussion of contaminant occurrence and movement within this media is not necessary.

6.6 Air/Soil Vapor

The station building is adjacent to the source areas and migration of volatile constituents from the subsurface to indoor air may be a potential exposure pathway. Undisturbed soil vapor samples have not been collected at the Property and therefore represent a data gap.

7.0 CONCEPTUAL MODEL

7.1 Contaminant Release, Fate, and Transport

The original investigations completed by RZA in 1991 and 1992 indicated that the impacts to soil were likely from the dispenser islands. The soil samples collected adjacent to the dispenser islands during the vapor recovery upgrades performed in 1994 confirmed that the dispenser islands and/or the product piping were the likely source of impact to soil. Although details of a release are not known, 2.93 feet and 5.17 feet of LNAPL were detected within wells MW-6 and MW-7, respectively (Table 2), during the groundwater monitoring event conducted on December 30, 1994. This is indicative of a release from the southern dispenser island and/or associated product piping. Soil impact was also detected within the UST excavation conducted during the 1994 vapor system upgrades; however, this sample appears to have been collected from overburden covering the USTs. Although the depth of this impact is unknown, groundwater monitoring data collected from adjacent well MW-3 indicates that a release from the USTs is not the likely source of impact. The soil impact was likely related to the product piping in this area. The soil analytical results obtained during the investigations conducted to date indicate that soil impacts are located in the shallow soils adjacent to the dispenser islands and extend southeast, south, and southwest from the southern dispenser island at depths between 10 feet and 33 feet bgs.

Groundwater monitoring performed since 1991 indicates that the release(s) from the dispenser islands and/or product piping migrated vertically and spread laterally within the perched groundwater zone(s) located within the southern portion of the Property. The dissolved-phase plume is currently defined in the southeast portion of the Property by wells MW-11 through MW-13. However, groundwater monitoring performed since 2011 indicates that the dissolved-phase plume extends off-Property into South 200th Street.

7.2 Potential and Actual Receptors

A complete exposure pathway consists of: (1) an identified contaminant source, (2) a transport pathway to locations (exposure points) where potential receptors may come in contact with COCs and, (3) an exposure route (e.g., ingestion) through which potential receptors may become exposed to COCs.

The subsurface investigations performed to date indicate that petroleum hydrocarbons are present within the shallow soils adjacent to the dispenser islands and extend southeast, south, and southwest from the southern dispenser island at depths between 10 feet and 33 feet bgs. Since future construction at the Property could potentially encounter soil impacts, the direct contact pathway is a complete potential receptor.

The Property and down-gradient impacted area within South 200th Street are paved which does not allow a complete soil to outdoor air vapor exposure pathway. Due to the proximity of the station building to the location of the detected soil and groundwater impacts, the vapor intrusion pathway to indoor air may be a complete exposure pathway. Additional assessment is planned in the area of the dispenser islands to confirm current soil conditions.

The search completed within Ecology's Well Log database indicates that the majority of the water supply wells identified within a one-mile radius are located up-gradient or cross-gradient from the Property. However, six down-gradient water supply wells were identified between 2,000 feet and 4,000 feet from the Property. These wells were installed to depths greater than 200 feet bgs, with the deepest well extending to a depth of 270 feet bgs. Based on the depths and distances of these down-gradient water supply wells, impact from contaminants associated with the Property is unlikely. The exposure pathway from the shallow impacted soil and groundwater to the deeper groundwater is not likely to be complete.

Surface water from the Property is captured within two storm drains located in the southern and southeastern portions of the Property. The storm water passes through an oil/water separator prior to leaving the Property and entering the City of SeaTac stormwater system. The closest major surface water body, Angle Lake, is located approximately 900 feet northeast of the Property. Since the surface water drains to the City of SeaTac stormwater system, impact to Angle Lake from COCs associated with the Property is unlikely. Therefore, the surface water pathway is not complete and surface water is not considered to be a potential receptor.

The soil impacts exceeding the MTCA Method A cleanup level are covered by pavement which prevents plant and wildlife exposure. Land use at the Property and surrounding area make substantial wildlife exposure unlikely. It is anticipated that the Property will continue to operate as a retail fueling facility and that the surrounding area will remain zoned as Community Business and Urban High Density Residential. As stated above, the simplified TEE (see Section 5.4) indicated that the Property conditions are protective of terrestrial ecological receptors and no further analysis was required.

7.3 Data Gaps

The depth and extent of the soil impacts in the region of the dispenser islands is unknown. Additional assessment is planned in this area to confirm current soil conditions. Although the extent of impact to soil and groundwater within the southwest portion of the Property is also unknown, the presence of underground utilities and traffic signal boxes makes the advancement of borings in this location difficult. Groundwater analytical data indicates that the dissolved-phase plume extends off-Property into South 200th Street; however, the down-gradient extent has not been defined. Lastly, subsurface soil vapor sampling has not been conducted at the Property and it is

unknown if the current concentrations of COCs within soil present a vapor intrusion risk to the station fueling building.

8.0 CLEANUP STANDARDS

Groundwater beneath the Property could potentially be used for drinking water. MTCA Method A cleanup levels for soil and groundwater are applicable for the Property. Cleanup levels for the COCs in soil and groundwater are included in Table 4.

9.0 AREAS REQUIRING CLEANUP

9.1 Constituents of Concern

The COCs associated with the Property release(s) are considered to be TPH-G, TPH-D, TPH-O, BTEX, MTBE, and lead.

9.2 Soil – Vertical and Lateral

The soil analytical results obtained during the investigations conducted to date indicate that soil impacts are located in the shallow soils adjacent to the dispenser islands and extend southeast, south, and southwest from the southern dispenser island at depths between 10 feet and 33 feet bgs. The limited soil data obtained adjacent to the dispenser islands in 1994 indicates that the lateral and vertical extent of the suspected source area warrants further investigation. While the investigations completed in 2010 and 2011 indicate additional lateral delineation is necessary in the southwest portion of the Property, the presence of underground utilities and traffic signal boxes makes the advancement of borings in this location difficult. Antea Group is currently evaluating remedial alternatives to address the soil impacts remaining at the Property.

9.3 Groundwater – Vertical and Lateral

Groundwater monitoring performed since 1991 indicates that the release(s) from the dispenser islands and/or product piping migrated vertically and spread laterally within the perched groundwater zone(s) located within the southern portion of the Property. During the most recent groundwater monitoring event performed on August 1, 2012, concentrations of one or more COCs exceeded the MTCA Method A cleanup levels in wells MW-6 through MW-10, MW-14, MW-16, and MW-17. Although the dissolved-phase plume is defined in the southeast portion of the Property by wells MW-11 through MW-13, groundwater monitoring indicates that the dissolved-phase plume extends off-Property into South 200th Street. Antea Group is currently evaluating remedial alternatives to address the groundwater impacts remaining at the Site.

9.4 Surface Water

Surface water from the Property drains to the City of SeaTac stormwater system. The closest major surface water body, Angle Lake, is located approximately 900 feet northeast of the Property. No indication of surface water impact has been identified in association with the Property; therefore, impact to Angle Lake is not likely and no action is required.

9.5 Sediment

Angle Lake is located approximately 900 feet northeast of the Property. No indication of surface water impact has been identified in association with the Property; therefore, impact to sediment is not likely and no action is required.

9.6 Soil Vapor/Air

Due to the proximity of the station building to the location of the detected soil and groundwater impacts, the vapor intrusion pathway to indoor air may be a complete exposure pathway. Additional assessment is planned in the area of the dispenser islands to confirm current soil conditions.

10.0 CONCLUSIONS

The subsurface assessments conducted between 1991 and 2011 confirmed that TPH-G, TPH-D, and BTEX constituents were detected within soil at concentrations exceeding the respective MTCA Method A cleanup levels. The majority of the soil impacts were identified in the shallow soils adjacent to the dispenser islands and the areas to the southeast, south, and southwest from the southern dispenser island at depths between 10 feet and 33 feet bgs. The subsurface investigations indicate that the soil impacts are likely from the dispenser islands and/or product piping. The limited soil data obtained adjacent to the dispenser islands in 1994 indicates that the lateral and vertical extent of the suspected source area warrants further investigation. While the investigations completed in 2010 and 2011 indicate additional lateral delineation is necessary in the southwest portion of the Property, the presence of underground utilities and traffic signal boxes makes the advancement of borings in this location difficult.

Groundwater monitoring performed since 1991 indicates that TPH-G, TPH-D, TPH-O, BTEX, MTBE, and lead have been detected at concentrations exceeding the respective MTCA Method A cleanup levels in one or more monitoring wells associated with the Property. Although details of a release are not known, a maximum of 2.93 feet and 5.17 feet of LNAPL were detected within wells MW-6 and MW-7, respectively. These levels were observed during the groundwater monitoring event conducted on December 30, 1994. This is indicative of a release from the southern dispenser island and/or the associated product piping. Groundwater monitoring conducted since 1991 indicates that the suspected release(s) from the dispenser islands and/or product piping migrated to the perched groundwater zone(s) located within the southern portion of the Property and spread laterally. The dissolved-phase plume is currently located in the region of wells MW-6 through MW-10, MW-14, MW-16, and

MW-17. Although the dissolved-phase plume is defined in the southeast portion of the Property by wells MW-11 through MW-13, additional delineation is warranted to define the down-gradient edge of the plume.

Antea Group will continue to monitor the dissolved-phase plume at Site. A subsurface assessment is planned in the areas of the central and southern dispenser islands to confirm current soil conditions. In addition, Antea Group will continue to evaluate remedial alternatives to address the soil and groundwater impacts remaining at the Site.

11.0 REFERENCES

Subsurface Petroleum Hydrocarbon Evaluation – March 1992, RZA

Additional Subsurface Petroleum Hydrocarbon Assessment – June 1993, RZA

Baseline Assessment Report – May 1994, EMCON


Vapor Extraction System Testing and Evaluation Report – March 5, 1998, Alisto Engineering Group

Subsurface Investigation Report – July 17, 2012, Antea Group

12.0 REMARKS

The recommendations contained in this report represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the client. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this report. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this report.

Prepared by:



for,

Date: April 25, 2013

Julie Mouton
Project Manager

Reviewed by:



Date: April 25, 2013

Bryan Taylor
Senior Project Manager



Date: April 25, 2013

Kevin McCarthy, RG
Consultant



Expires
9/29/13

Table

Table 1	2012 Groundwater Gauging and Analytical Data
Table 2	Historic Groundwater Gauging and Analytical Data
Table 3	Groundwater Geochemical Data
Table 4	Soil and Groundwater Cleanup Levels

TABLE 1
2012 GROUNDWATER GAUGING AND ANALYTICAL DATA
Facility No. 2611255
19924 International Boulevard
SeaTac, Washington

Sample I.D.	Sample Date	TOC (feet)	DTW (feet)	SPH (feet)	WTE (feet)	TPH-Diesel (µg/L)	TPH-Oil (µg/L)	TPH-Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	EDC (µg/L)	EDB (µg/L)	MTBE (µg/L)	Total Lead (µg/L)
MW-1	02/10/12	99.73	28.61	--	71.12	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0	--	--	--	--
	08/01/12	99.73	27.00	--	72.73	<154	<481	<50.0	2.7	<1.0	1.3	4.8	--	--	--	--
MW-3	02/09/12	98.89	27.44	--	71.45	<81	<400	<50.0	<1.0	<1.0	<1.0	<3.0	--	--	--	--
	08/01/12	98.89	26.57	--	72.32	<167	<521	<50.0	<1.0	<1.0	<1.0	<3.0	--	--	--	--
MW-4	02/10/12	98.28	37.04	--	61.24	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0	--	--	--	--
	08/01/12	98.28	28.30	--	69.98	<154	<481	<50.0	<1.0	1.8	2.3	8.0	--	--	--	--
MW-5	02/10/12	97.75	18.14	--	79.61	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0	--	--	--	--
	08/01/12	97.75	19.00	--	78.75	<154	<481	<50.0	<1.0	1.3	1.6	6.0	--	--	--	<10.0
MW-6	02/09/12	98.77	29.97	--	68.80	1,500	<410	36,600	165	6.9	716	2,460	--	--	--	--
	08/01/12	98.77	28.84	--	69.93	2,070	<481	28,300	294	7.8	712	2,200	--	--	--	--
MW-7	02/09/12	98.42	28.72	--	69.70	120	<380	2,490	1.1	2.0	86.0	165	--	--	--	--
	08/01/12	98.42	27.69	--	70.73	343	<521	4,930	<1.0	2.7	110	364	--	--	--	<10.0
MW-8	02/09/12	98.80	47.30	--	51.50	1,200	1,400	13,300	1,203	15.4	768	1,120	--	--	--	--
	08/01/12	98.80	46.50	--	52.30	685	<481	6,110	108	6.6	120	264	--	--	--	--
MW-9	02/09/12	98.99	29.97	--	69.02	590	<380	4,940	169	2.2	237	70.9	--	--	--	--
	08/01/12	98.99	28.91	--	70.08	1,640	<481	18,100	169	5.0	818	1,430	--	--	--	--
MW-10	02/09/12	98.51	29.28	--	69.23	910	<380	46,100	14.8	21.9	997	6,120	--	--	--	--
	08/01/12	98.51	28.28	--	70.23	672	<521	6,830	2.5	1.4	151	664	--	--	--	<10.0
MW-11	02/10/12	98.11	28.28	--	69.83	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0	--	--	--	--
	08/01/12	98.11	27.26	--	70.85	<154	<481	<50.0	1.3	<1.0	1.7	6.8	--	--	--	--
MW-12	02/10/12	97.76	27.83	--	69.93	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0	--	--	--	--
	08/01/12	97.76	26.83	--	70.93	<174	<543	<50.0	<1.0	<1.0	<1.0	3.7	--	--	--	--
MW-13	02/09/12	97.33	27.76	--	69.57	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0	--	--	--	--
	08/01/12	97.33	26.74	--	70.59	<174	<543	<50.0	<1.0	<1.0	<1.0	<3.0	--	--	--	--
MW-14	02/10/12	99.20	NM	--	NM	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	08/01/12	99.20	NM	--	NM	NS	NS	NS	NS	NS	NS	NS	--	--	--	--

TABLE 1
2012 GROUNDWATER GAUGING AND ANALYTICAL DATA
 Facility No. 2611255
 19924 International Boulevard
 SeaTac, Washington

Sample I.D.	Sample Date	TOC (feet)	DTW (feet)	SPH (feet)	WTE (feet)	TPH-Diesel (µg/L)	TPH-Oil (µg/L)	TPH-Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	EDC (µg/L)	EDB (µg/L)	MTBE (µg/L)	Total Lead (µg/L)
MW-15	02/10/12	98.49	NM	--	NM	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	08/01/12	98.49	NM	--	NM	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
MW-16	02/09/12	98.35	29.37	--	68.98	550	<390	71,300	917	5,760	1,250	6,010	--	--	--	--
	08/01/12	98.35	28.30	--	70.05	1,880	<481	59,900	811	1,950	1,420	6,900	--	--	--	--
MW-17	02/09/12	99.39	30.03	--	69.36	440	<380	2,460	12.2	<1.0	110	4.7	--	--	--	--
	08/01/12	99.39	29.00	--	70.39	649	<521	4,990	100	12.5	395	92.5	--	--	--	<10.0
MTCA Method A Cleanup Levels:						500	500	800*	5	1,000	700	1,000	5	0.01	20	15
Laboratory Reporting Limits						<i>Varies - see laboratory analytical report for values.</i>										

Notes:

µg/L = micrograms per liter

TOC = Top of casing elevation

DTW = Depth to water

SPH = Separate-phase hydrocarbon thickness

WTE = Water table elevation

<N = Not detected at the laboratory reporting limits

-- = Not sampled, not measured, or not analyzed

Water table elevation corrected for separate-phase hydrocarbons

TPH as Gasoline = Total petroleum hydrocarbons as gasoline by Method NWTPH-Gx

TPH as Diesel = Total petroleum hydrocarbons as gasoline by Method NWTPH-Dx

TPH as Oil = Total petroleum hydrocarbons as gasoline by Method NWTPH-Dx

BTEX Compounds analyzed by EPA Method 8260

MTBE = Methyl-tert-butyl Ether analyzed by EPA Method 8260

EDC = 1,2-Dichloroethane analyzed by EPA Method 8260

EDB = 1,2-Dibromoethane analyzed by EPA Method 8260

Total lead by EPA Method 6010

* MTCA Method A Cleanup Level for TPH-Gasoline is 1,000 (µg/l) if benzene is not detectable in groundwater.

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000	
MW-1		4/16/1991	--	-	99.73	NP	26.58	NP	73.15	--	--	--	--	--	--	
		6/27/1991	--	-	99.73	NP	26.80	NP	72.93	--	--	--	--	--	--	
		1/16/1992	--	-	99.73	NP	28.60	NP	71.13	--	--	<100	<1	<1	<0.5	
		1/23/1992	--	-	99.73	NP	28.75	NP	70.98	--	--	--	--	--	--	
		1/31/1992	--	-	99.73	NP	28.56	NP	71.17	--	--	--	--	--	--	
		8/24/1993	--	-	99.73	NP	29.32	NP	70.41	--	--	<50	<0.5	<0.5	1	89
		11/30/1993	--	-	99.73	NP	29.98	NP	69.75	--	--	<100	<0.5	<0.5	<0.5	6
		3/7/1994	--	-	99.73	NP	30.63	NP	69.10	--	--	<100	<0.5	<0.5	<0.5	<0.5
		7/14/1994	--	-	99.73	NP	30.00	NP	69.73	--	--	<100	<0.5	<0.5	<0.5	<0.5
		10/21/1994	--	-	99.73	NP	30.44	NP	69.29	--	--	<100	<0.5	1	5	3
		12/30/1994	--	-	99.73	NP	30.86	NP	68.87	--	--	<100	<0.5	<0.5	1	<0.5
		3/16/1995	--	-	99.73	NP	29.64	NP	70.09	--	--	<100	<0.5	<0.5	<0.5	<0.5
		6/22/1995	--	-	99.73	NP	28.92	NP	70.81	--	--	<100	<0.5	<0.5	<0.5	<0.5
		9/19/1995	--	-	99.73	NP	29.14	NP	70.59	--	--	<100	<0.5	<0.5	<0.5	<0.5
		12/18/1995	--	-	99.73	NP	28.78	NP	70.95	--	--	<100	<0.5	<0.5	<0.5	<0.5
		3/14/1996	--	-	99.73	NP	27.38	NP	72.35	--	--	<100	<0.5	<0.5	<0.5	<0.5
		6/22/1996	--	-	99.73	NP	27.16	NP	72.57	--	--	<100	<0.5	<0.5	<0.5	<0.5
		9/12/1996	--	-	99.73	NP	27.33	NP	72.40	--	--	<100	<0.5	<0.5	<0.5	<0.5
		12/17/1996	--	-	99.73	NP	27.64	NP	72.09	--	--	<100	<0.5	<0.5	<0.5	<1.5
		3/18/1997	--	-	99.73	NP	26.11	NP	73.62	--	--	<100	<0.5	<0.5	<0.5	<1.5
		6/12/1997	--	-	99.73	NP	25.82	NP	73.91	--	--	<100	<0.5	<0.5	<0.5	<1.5
		9/10/1997	--	-	99.73	NP	26.17	NP	73.56	--	--	<100	<0.5	<0.5	<0.5	<1.5
		3/17/1998	--	-	99.73	NP	26.63	NP	73.10	--	--	<100	<0.5	<0.5	<0.5	<1.5
		6/16/1998	--	-	99.73	NP	27.20	NP	72.53	--	--	<100	<0.5	<0.5	<0.5	<1.5
		9/29/1998	--	-	99.73	NP	28.75	NP	70.98	--	--	--	--	--	--	--
		12/10/1998	--	-	99.73	NP	29.53	NP	70.20	--	--	--	--	--	--	--
		3/10/1999	--	-	99.73	NP	27.23	NP	72.50	--	--	--	--	--	--	--
		6/22/1999	--	-	99.73	NP	26.54	NP	73.19	--	--	<100	<1.0	<1.0	1	<1.0
		9/28/1999	--	-	99.73	NP	27.66	NP	72.07	--	--	--	--	--	--	--
		1/4/2000	--	-	99.73	NP	28.56	NP	71.17	--	--	--	--	--	--	--
		3/30/2000	--	-	99.73	NP	27.21	NP	72.52	--	--	--	--	--	--	--
		6/27/2000	--	-	99.73	NP	26.85	NP	72.88	--	--	730	2	14	1	34
		9/25/2000	--	-	99.73	NP	28.19	NP	71.54	--	--	--	--	--	--	--
		9/16/2001	--	-	99.73	NP	32.71	NP	67.02	--	--	<100	<1.0	<1.0	<1.0	<3.0
		12/4/2001	--	-	99.73	NP	33.11	NP	66.62	--	--	140	<1.0	1.2	<1.0	7.3
		3/14/2002	--	-	99.73	NP	30.25	NP	69.48	--	--	310	<1.0	3.5	<1.0	19

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000
MW-1		6/9/2002	--	-	99.73	NP	31.52	NP	68.21	--	--	120	<1.0	1.3	<1.0	6.9
		12/18/2002	--	-	99.73	NP	33.51	NP	66.22	NS	NS	NS	NS	NS	NS	NS
		6/3/2003	--	-	99.73	NP	31.15	NP	68.58	--	--	<50.0	<0.500	<0.500	<0.500	<1.00
		10/10/2003	--	-	99.73	NP	33.02	NP	66.71	NS	NS	NS	NS	NS	NS	NS
		4/26/2004	--	-	99.73	NP	29.98	NP	69.75	--	--	<50.0	<0.500	<0.500	<0.500	<1.00
		10/28/2004	--	-	99.73	NP	27.62	NP	72.11	NS	NS	NS	NS	NS	NS	NS
		4/27/2005	--	-	99.73	NP	31.71	NP	68.02	--	--	<80.0	<0.200	<0.500	<0.500	<1.00
		11/22/2005	--	-	99.73	NP	32.98	NP	66.75	--	--	<50.0	<0.500	<0.500	<0.500	<1.00
		4/25/2006	--	-	99.73	NP	30.08	NP	69.65	NS	NS	NS	NS	NS	NS	NS
		10/27/2006	--	-	99.73	NP	30.68	NP	69.05	NS	NS	NS	NS	NS	NS	NS
		4/4/2007	--	-	99.73	NP	28.62	NP	71.11	NS	NS	NS	NS	NS	NS	NS
		11/19/2007	--	-	99.73	NP	29.57	NP	70.16	NS	NS	NS	NS	NS	NS	NS
		6/12/2008	--	-	99.73	NP	28.94	NP	70.79	NS	NS	NS	NS	NS	NS	NS
		10/29/2008	--	-	99.73	NP	29.82	NP	69.91	NS	NS	NS	NS	NS	NS	NS
		5/15/2009	--	-	99.73	NP	28.81	NP	70.92	--	--	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-1_20100211	2/11/2010	--	-	99.73	NP	28.61	NP	71.12	--	--	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-1_20100831	9/2/2010	--	-	99.73	NP	26.70	NP	73.03	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-1_20110813	9/19/2011	--	-	99.73	NP	26.31	NP	73.42	<77	<380	<50.0	<1.0	<1.0	<1.0	<3.0

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000
MW-3		4/16/1991	--	-	98.89	NP	27.01	NP	71.88	--	--	--	--	--	--	--
		6/27/1991	--	-	98.89	NP	26.68	NP	72.21	--	--	--	--	--	--	--
		1/16/1992	--	-	98.89	NP	28.38	NP	70.51	--	--	<100	5	<1	5	5
		1/23/1992	--	-	98.89	NP	28.46	NP	70.43	--	--	--	--	--	--	--
		1/31/1992	--	-	98.89	NP	28.26	NP	70.63	--	--	--	--	--	--	--
		8/24/1993	--	-	98.89	NP	28.59	NP	70.30	--	--	--	--	--	--	--
		11/30/1993	--	-	98.89	NP	29.25	NP	69.64	--	--	<100	<0.5	<0.5	<0.5	<0.5
		3/7/1994	--	-	98.89	NP	29.60	NP	69.29	--	--	<100	1	<0.5	<0.5	<0.5
		7/14/1994	--	-	98.89	NP	29.08	NP	69.81	--	--	<100	1	<0.5	<0.5	<0.5
		10/21/1994	--	-	98.89	NP	29.32	NP	69.57	--	--	<100	1	<0.5	<0.5	1
		12/30/1994	--	-	98.89	NP	29.58	NP	69.31	--	--	<100	1	<0.5	1	1
		3/16/1995	--	-	98.89	NP	28.67	NP	70.22	--	--	<100	<0.5	<0.5	<0.5	<0.5
		6/22/1995	--	-	98.89	NP	28.14	NP	70.75	--	--	<100	<0.5	<0.5	<0.5	<0.5
		9/19/1995	--	-	98.89	NP	28.24	NP	70.65	--	--	<100	1	<0.5	<0.5	<0.5
		12/18/1995	--	-	98.89	NP	28.10	NP	70.79	--	--	<100	<0.5	<0.5	<0.5	<0.5
		3/14/1996	--	-	98.89	NP	26.95	NP	71.94	--	--	<100	<0.5	<0.5	<0.5	<0.5
		6/22/1996	--	-	98.89	NP	26.52	NP	72.37	--	--	<100	7	7	<0.5	4
		9/12/1996	--	-	98.89	NP	26.60	NP	72.29	--	--	<100	2	<0.5	<0.5	<0.5
		12/17/1996	--	-	98.89	NP	26.75	NP	72.14	--	--	130	6	3	<0.5	5
		3/18/1997	--	-	98.89	NP	25.33	NP	73.56	--	--	<100	<0.5	<0.5	<0.5	<1.5
		6/12/1997	--	-	98.89	NP	25.25	NP	73.64	--	--	<100	<0.5	<0.5	<0.5	<1.5
		9/10/1997	--	-	98.89	NP	25.91	NP	72.98	--	--	<100	<0.5	<0.5	<0.5	<1.5
		3/17/1998	--	-	98.89	NP	25.92	NP	72.97	--	--	<100	<0.5	<0.5	<0.5	<1.5
		6/16/1998	--	-	98.89	NP	26.33	NP	72.56	--	--	<100	<0.5	<0.5	<0.5	<1.5
		9/29/1998	--	-	98.89	NP	27.28	NP	71.61	--	--	--	--	--	--	--
		12/10/1998	--	-	98.89	NP	28.04	NP	70.85	--	--	--	--	--	--	--
		3/10/1999	--	-	98.89	NP	26.60	NP	72.29	--	--	--	--	--	--	--
		6/22/1999	--	-	98.89	NP	25.99	NP	72.90	--	--	<100	<1.0	<1.0	<1.0	<1.0
		9/28/1999	--	-	98.89	NP	26.88	NP	72.01	--	--	--	--	--	--	--
		3/30/2000	--	-	98.89	NP	26.74	NP	72.15	--	--	--	--	--	--	--
		6/27/2000	--	-	98.89	NP	26.40	NP	72.49	--	--	<50	<0.5	<0.5	<0.5	<0.5
		9/25/2000	--	-	98.89	NP	27.00	NP	71.89	--	--	--	--	--	--	--
		12/27/2000	--	-	98.89	NP	28.05	NP	70.84	--	--	--	--	--	--	--
		9/16/2001	--	-	98.89	NP	29.40	NP	69.49	--	--	--	--	--	--	--
		12/4/2001	--	-	98.89	NP	29.60	NP	69.29	--	--	940	25	5	<1.0	39
		3/14/2002	--	-	98.89	NP	28.54	NP	70.35	--	--	--	--	--	--	--
		6/9/2002	--	-	98.89	NP	28.00	NP	70.89	--	--	--	--	--	--	--

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000
MW-3		12/18/2002	--	-	98.89	NP	29.53	NP	69.36	NS	NS	NS	NS	NS	NS	NS
		6/3/2003	--	-	98.89	NP	28.64	NP	70.25	NS	NS	NS	NS	NS	NS	NS
		10/10/2003	--	-	98.89	NP	29.35	NP	69.54	NS	NS	NS	NS	NS	NS	NS
		4/26/2004	--	-	98.89	NP	28.21	NP	70.68	NS	NS	NS	NS	NS	NS	NS
		10/28/2004	--	-	98.89	NP	27.30	NP	71.59	NS	NS	NS	NS	NS	NS	NS
		4/27/2005	--	-	98.89	NP	28.98	NP	69.91	NS	NS	NS	NS	NS	NS	NS
		11/22/2005	--	-	98.89	NP	29.40	NP	69.49	NS	NS	NS	NS	NS	NS	NS
		4/25/2006	--	-	98.89	NP	28.40	NP	70.49	--	--	<50.0	<0.500	<0.500	<0.500	<1.00
		10/27/2006	--	-	98.89	NG	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS
		4/4/2007	--	-	98.89	NP	27.39	NP	71.50	NS	NS	NS	NS	NS	NS	NS
		11/19/2007	--	-	98.89	NP	28.27	NP	70.62	NS	NS	NS	NS	NS	NS	NS
		6/12/2008	--	-	98.89	NP	27.54	NP	71.35	NS	NS	NS	NS	NS	NS	NS
		10/29/2008	--	-	98.89	NP	28.39	NP	70.50	NS	NS	NS	NS	NS	NS	NS
		5/15/2009	--	-	98.89	NP	27.30	NP	71.59	--	--	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-3_20100211	2/11/2010	--	-	98.89	NP	27.28	NP	71.61	--	--	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-3_20100831	9/2/2010	--	-	98.89	NP	26.22	NP	72.67	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-3_20110813	9/19/2011	--	-	98.89	NP	25.97	NP	72.92	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000
MW-4		4/16/1991	--	-	98.28	NP	27.78	NP	70.50	--	--	--	--	--	--	--
		6/27/1991	--	-	98.28	27.59	27.60	0.01	70.69	--	--	--	--	--	--	--
		12/30/1994	--	-	98.28	NP	44.66	NP	53.62	--	--	71000	8600	1200	10000	8400
		3/16/1995	--	-	98.28	NP	43.21	NP	55.07	--	--	40000	5600	560	7000	4100
		6/22/1995	--	-	98.28	NP	42.74	NP	55.54	--	--	--	--	--	--	--
		9/19/1995	--	-	98.28	NP	42.27	NP	56.01	--	--	2100	360	5	200	420
		12/18/1995	--	-	98.28	NP	42.48	NP	55.80	--	--	38000	3300	980	4900	6500
		3/14/1996	--	-	98.28	NP	40.75	NP	57.53	--	--	--	--	--	--	--
		6/22/1996	--	-	98.28	39.91	39.92	0.01	58.37	--	--	--	--	--	--	--
		9/12/1996	--	-	98.28	NP	39.16	NP	59.12	--	--	--	--	--	--	--
		9/29/1998	--	-	98.28	NG	NG	NG	NG	--	--	14000	18	17	45	180
		12/10/1998	--	-	98.28	NG	NG	NG	NG	--	--	420	<1.0	<1.0	<1.0	22
		3/10/1999	--	-	98.28	NG	NG	NG	NG	--	--	2400	39	53	100	370
		6/22/1999	--	-	98.28	NG	NG	NG	NG	--	--	1500	31	21	57	200
		9/28/1999	--	-	98.28	NG	NG	NG	NG	--	--	610	12	9	19	82
		1/4/2000	--	-	98.28	NG	NG	NG	NG	--	--	270	23	7	18	62
		3/30/2000	--	-	98.28	NG	NG	NG	NG	--	--	280	8	6	11	52
		6/27/2000	--	-	98.28	NG	NG	NG	NG	--	--	1700	29	30	84	270
		9/25/2000	--	-	98.28	NG	NG	NG	NG	--	--	140	4	5.5	2.1	30
		12/27/2000	--	-	98.28	NP	23.29	NP	74.99	--	--	130	<1	<1	<1	<3
		9/16/2001	--	-	98.28	NP	43.52	NP	54.76	--	--	980	16	6.6	7.7	50
		12/4/2001	--	-	98.28	NP	43.60	NP	54.68	--	--	--	--	--	--	--
		3/14/2002	--	-	98.28	NP	42.23	NP	56.05	--	--	120	<1.0	<1.0	<1.0	6.3
		6/9/2002	--	-	98.28	NP	42.30	NP	55.98	--	--	<100	<1.0	<1.0	<1.0	<3.0
		12/18/2002	--	-	98.28	NP	42.60	NP	55.68	NS	NS	NS	NS	NS	NS	NS
		6/3/2003	--	-	98.28	NP	42.32	NP	55.96	--	--	<50.0	1.14	<0.500	<0.500	<1.00
		10/10/2003	--	-	98.28	NP	43.42	NP	54.86	NS	NS	NS	NS	NS	NS	NS
		4/26/2004	--	-	98.28	NP	41.91	NP	56.37	--	--	99	2.64	<0.500	4.16	18.3
		10/28/2004	--	-	98.28	NP	30.02	NP	68.26	NS	NS	NS	NS	NS	NS	NS
		4/27/2005	--	-	98.28	NP	42.43	NP	55.85	--	--	<80.0	5.99	<0.500	<0.500	1.49
		11/22/2005	--	-	98.28	NP	42.57	NP	55.71	--	--	176	10.4	2.71	2.82	17.3
		4/25/2006	--	-	98.28	NP	41.88	NP	56.40	--	--	539	13.2	5.08	19.6	119
		10/27/2006	--	-	98.28	NG	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS
		4/4/2007	--	-	98.28	NG	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS
		11/19/2007	--	-	98.28	NG	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS
		6/12/2008	--	-	98.28	NG	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000	
MW-4		5/15/2009	--	-	98.28	NP	33.00	NP	65.28	--	--	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-4_20100211	2/11/2010	--	-	98.28	NP	40.52	NP	57.76	--	--	60.0	<1.0	<1.0	<1.0	<3.0
	MW-4_20100831	9/2/2010	--	-	98.28	NP	29.90	NP	68.38	110	<380	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-4_20110813	9/19/2011	--	-	98.28	NP	30.00	NP	68.28	<110	<570	<50.0	<1.0	<1.0	<1.0	<3.0

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000
MW-5		4/16/1991	--	-	97.75	NP	17.14	NP	80.61	--	--	--	--	--	--	--
		6/27/1991	--	-	97.75	NP	19.01	NP	78.74	--	--	--	--	--	--	--
		1/16/1992	--	-	97.75	NP	19.39	NP	78.36	--	--	<100	<1	<1	<1	<1
		1/23/1992	--	-	97.75	NP	19.29	NP	78.46	--	--	--	--	--	--	--
		1/31/1992	--	-	97.75	NP	19.62	NP	78.13	--	--	--	--	--	--	--
		8/24/1993	--	-	97.75	NP	20.72	NP	77.03	--	--	<5	<0.5	<0.5	<0.5	<0.5
		11/30/1993	--	-	97.75	NP	22.47	NP	75.28	--	--	<100	<0.5	<0.5	<0.5	<0.5
		3/7/1994	--	-	97.75	NP	20.45	NP	77.30	--	--	<100	<0.5	<0.5	<0.5	<0.5
		7/14/1994	--	-	97.75	NP	20.67	NP	77.08	400	--	<100	<0.5	<0.5	<0.5	<0.5
		10/21/1994	--	-	97.75	NP	21.48	NP	76.27	<260	--	<100	1	<0.5	<0.5	<0.5
		12/30/1994	--	-	97.75	NP	20.53	NP	77.22	<240	--	<100	<0.5	<0.5	<0.5	<0.5
		3/16/1995	--	-	97.75	NP	18.11	NP	79.64	<240	--	<100	<0.5	<0.5	<0.5	<0.5
		6/22/1995	--	-	97.75	NP	19.86	NP	77.89	<240	--	<100	<0.5	<0.5	<0.5	<0.5
		9/19/1995	--	-	97.75	NP	20.25	NP	77.50	--	--	<100	<0.5	<0.5	<0.5	<0.5
		12/18/1995	--	-	97.75	NP	17.99	NP	79.76	--	--	<100	<0.5	<0.5	<0.5	<0.5
		3/14/1996	--	-	97.75	NP	17.58	NP	80.17	--	--	<100	<0.5	<0.5	<0.5	<0.5
		6/22/1996	--	-	97.75	NP	18.41	NP	79.34	--	--	<100	<0.5	<0.5	<0.5	<0.5
		9/12/1996	--	-	97.75	NP	18.90	NP	78.85	--	--	<100	<0.5	<0.5	<0.5	<0.5
		12/17/1996	--	-	97.75	NP	17.29	NP	80.46	--	--	<100	<0.5	<0.5	<0.5	<1.5
		3/18/1997	--	-	97.75	NP	16.29	NP	81.46	--	--	<100	<0.5	<0.5	<0.5	<1.5
		6/12/1997	--	-	97.75	NP	17.42	NP	80.33	--	--	<100	<0.5	<0.5	<0.5	<1.5
		9/10/1997	--	-	97.75	NP	19.30	NP	78.45	--	--	<100	<0.5	<0.5	<0.5	<1.5
		3/17/1998	--	-	97.75	NP	17.03	NP	80.72	--	--	<100	<0.5	<0.5	<0.5	<1.5
		6/16/1998	--	-	97.75	NP	18.86	NP	78.89	--	--	<100	<0.5	<0.5	<0.5	<1.5
		9/29/1998	--	-	97.75	NP	20.30	NP	77.45	--	--	--	--	--	--	--
		12/10/1998	--	-	97.75	NP	20.13	NP	77.62	--	--	--	--	--	--	--
		3/10/1999	--	-	97.75	NP	16.96	NP	80.79	--	--	--	--	--	--	--
		6/22/1999	--	-	97.75	NP	18.96	NP	78.79	--	--	--	--	--	--	--
		9/28/1999	--	-	97.75	NP	20.79	NP	76.96	--	--	--	--	--	--	--
		1/4/2000	--	-	97.75	NP	18.55	NP	79.20	--	--	--	--	--	--	--
		3/30/2000	--	-	97.75	NP	17.94	NP	79.81	--	--	--	--	--	--	--
		6/27/2000	--	-	97.75	NP	18.98	NP	78.77	--	--	--	--	--	--	--
		9/25/2000	--	-	97.75	NP	20.47	NP	77.28	--	--	--	--	--	--	--
		12/27/2000	--	-	97.75	NP	26.46	NP	71.29	--	--	--	--	--	--	--
		9/16/2001	--	-	97.75	NP	21.63	NP	76.12	--	--	--	--	--	--	--
		12/4/2001	--	-	97.75	NG	NG	NG	NG	--	--	--	--	--	--	--

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000
MW-5		3/14/2002	--	-	97.75	NG	NG	NG	NG	--	--	--	--	--	--	--
		6/9/2002	--	-	97.75	NP	20.22	NP	77.53	--	--	--	--	--	--	--
		12/18/2002	--	-	97.75	NP	22.50	NP	75.25	NS	NS	NS	NS	NS	NS	NS
		6/3/2003	--	-	97.75	NP	19.29	NP	78.46	NS	NS	NS	NS	NS	NS	NS
		10/10/2003	--	-	97.75	NP	22.22	NP	75.53	NS	NS	NS	NS	NS	NS	NS
		4/26/2004	--	-	97.75	NP	31.13	NP	66.62	NS	NS	NS	NS	NS	NS	NS
		10/28/2004	--	-	97.75	NP	27.98	NP	69.77	NS	NS	NS	NS	NS	NS	NS
		4/27/2005	--	-	97.75	NG	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS
		11/22/2005	--	-	97.75	NG	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS
		4/25/2006	--	-	97.75	NP	29.70	NP	68.05	NS	NS	NS	NS	NS	NS	NS
		10/27/2006	--	-	97.75	NG	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS
		4/4/2007	--	-	97.75	NG	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS
		11/19/2007	--	-	97.75	NG	NG	NG	NG	NS	NS	NS	NS	NS	NS	NS
		6/12/2008	--	-	97.75	NP	19.70	NP	78.05	NS	NS	NS	NS	NS	NS	NS
		10/29/2008	--	-	97.75	NP	21.15	NP	76.60	NS	NS	NS	NS	NS	NS	NS
		5/15/2009	--	-	97.75	NP	18.21	NP	79.54	--	--	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-5_20100211	2/11/2010	--	-	97.75	NP	17.76	NP	79.99	--	--	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-5_20100831	9/2/2010	--	-	97.75	NP	19.50	NP	78.25	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-5_20110813	9/19/2011	--	-	97.75	NP	19.85	NP	77.90	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000
MW-6		1/16/1992	--	-	98.77	NP	31.12	NP	67.65	--	--	9100	240	260	210	14000
		1/23/1992	--	-	98.77	NP	31.25	NP	67.52	--	--	--	--	--	--	--
		1/31/1992	--	-	98.77	NP	31.32	NP	67.45	--	--	--	--	--	--	--
		8/24/1993	--	-	98.77	NP	30.96	NP	67.81	--	--	81000	11000	2800	11000	16000
		11/30/1993	--	-	98.77	NP	31.23	NP	67.54	--	--	39000	5800	1100	4700	6100
		3/7/1994	--	-	98.77	31.78	31.84	0.06	66.98	--	--	--	--	--	--	--
		7/14/1994	--	-	98.77	31.54	31.77	0.23	67.17	--	--	--	--	--	--	--
		10/21/1994	--	-	98.77	31.83	31.95	0.12	66.91	--	--	--	--	--	--	--
		12/30/1994	--	-	98.77	29.53	32.46	2.93	68.51	--	--	--	--	--	--	--
		3/16/1995	--	-	98.77	30.51	30.57	0.06	68.25	--	--	--	--	--	--	--
		6/22/1995	--	-	98.77	30.7	30.75	0.05	68.06	--	--	--	--	--	--	--
		9/19/1995	--	-	98.77	30.66	30.68	0.02	68.11	--	--	--	--	--	--	--
		12/18/1995	--	-	98.77	29.76	29.78	0.02	69.01	--	--	--	--	--	--	--
		3/14/1996	--	-	98.77	NP	28.51	NP	70.26	--	--	--	--	--	--	--
		6/22/1996	--	-	98.77	28.54	28.56	0.02	70.23	--	--	--	--	--	--	--
		9/12/1996	--	-	98.77	27.83	27.85	0.02	70.94	--	--	--	--	--	--	--
		12/17/1996	--	-	98.77	28.98	28.99	0.01	69.79	--	--	--	--	--	--	--
		3/17/1998	--	-	98.77	NG	NG	NG	NG	--	--	66500	3800	2600	4100	15300
		9/29/1998	--	-	98.77	NG	NG	NG	NG	--	--	79000	1900	2500	1200	14000
		12/10/1998	--	-	98.77	NG	NG	NG	NG	--	--	68000	1000	2100	630	12000
		3/10/1999	--	-	98.77	NG	NG	NG	NG	--	--	60000	1200	2000	650	10000
		6/22/1999	--	-	98.77	NG	NG	NG	NG	--	--	56000	590	1700	370	10000
		9/28/1999	--	-	98.77	NG	NG	NG	NG	--	--	34000	420	190	280	10000
		1/4/2000	--	-	98.77	NG	NG	NG	NG	--	--	24000	590	1600	340	9600
		3/30/2000	--	-	98.77	NG	NG	NG	NG	--	--	31000	170	1300	190	7900
		6/27/2000	--	-	98.77	NG	NG	NG	NG	--	--	22000	92	1000	120	6100
		9/25/2000	--	-	98.77	NG	NG	NG	NG	--	--	26000	130	1100	170	6300
		12/27/2000	--	-	98.77	NP	29.87	NP	68.90	--	--	26000	73	910	88	5100
		9/16/2001	--	-	98.77	NP	31.51	NP	67.26	--	--	36000	54	1100	35	4800
		12/4/2001	--	-	98.77	31.92	31.95	0.03	66.84	--	--	43000	66	1300	220	6700
		3/14/2002	--	-	98.77	NP	31.52	NP	67.25	--	--	55000	80	1600	190	8700
		6/9/2002	--	-	98.77	NP	30.47	NP	68.30	--	--	1500	<1.0	25	1.8	140
		12/18/2002	--	-	98.77	NP	31.55	NP	67.22	--	--	22300	16.4	306	10	1740
		6/3/2003	--	-	98.77	NP	31.51	NP	67.26	--	--	28200	216	914	70	4620
		10/10/2003	--	-	98.77	NP	31.73	NP	67.04	--	--	19700	117	407	19.4	2330
		4/26/2004	--	-	98.77	NP	31.22	NP	67.55	--	--	25000	454	595	22.6	3600

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA							
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)	
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000		
MW-6		10/28/2004	--	-	98.77	NP	31.38	NP	67.39	--	--	20500	580	719	15.4	3050	
		4/27/2005	--	-	98.77	NP	31.67	NP	67.10	--	--	16800	541	594	7	2270	
		11/22/2005	--	-	98.77	NP	31.70	NP	67.07	--	--	29100	792	595	7.95	2290	
		4/25/2006	--	-	98.77	NP	30.98	NP	67.79	--	--	27500	819	554	<20.0	2130	
		10/27/2006	--	-	98.77	NP	31.11	NP	67.66	--	--	31200	879	677	13.8	2340	
		4/4/2007	--	-	98.77	NP	30.09	NP	68.68	--	--	44300	772	867	16.7	5740	
		11/19/2007	--	-	98.77	NP	31.05	NP	67.72	--	--	30200	748	966	25.6	3510	
		6/12/2008	--	-	98.77	NP	29.92	NP	68.85	--	--	43400	251	733	9.81	3310	
		10/29/2008	--	-	98.77	NP	31.07	NP	67.70	--	--	36100	336	842	15.4	2370	
		5/15/2009	--	-	98.77	NP	29.86	NP	68.91	--	--	48400	373	12	853	3400	
		MW-6_20100211	2/11/2010	--	-	98.77	NP	29.88	NP	68.89	--	--	33000	279	705	18.5	2560
		MW-6_20100831	9/2/2010	--	-	98.77	NP	28.74	NP	70.03	1500	<380	35500	785	1740	980	7220
		MW-6_20110813	9/19/2011	--	-	98.77	NP	28.42	NP	70.35	950	<380	45700	191	1390	26.8	5280

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000
MW-7		1/16/1992	--	-	98.42	NP	29.30	NP	69.12	--	--	3500	610	1000	6900	6600
		1/23/1992	--	-	98.42	NP	29.33	NP	69.09	--	--	--	--	--	--	--
		1/31/1992	--	-	98.42	NP	29.22	NP	69.20	--	--	--	--	--	--	--
		8/24/1993	--	-	98.42	29.66	29.76	0.10	68.74	--	--	--	--	--	--	--
		11/30/1993	--	-	98.42	30.3	30.34	0.04	68.11	--	--	--	--	--	--	--
		3/7/1994	--	-	98.42	30.96	31.23	0.27	67.39	--	--	--	--	--	--	--
		7/14/1994	--	-	98.42	30.71	30.85	0.14	67.68	--	--	--	--	--	--	--
		10/21/1994	--	-	98.42	30.98	31.18	0.20	67.39	--	--	--	--	--	--	--
		12/30/1994	--	-	98.42	26.08	31.25	5.17	71.05	--	--	--	--	--	--	--
		3/16/1995	--	-	98.42	31.5	31.98	0.48	66.80	--	--	--	--	--	--	--
		6/22/1995	--	-	98.42	29.24	30.86	1.62	68.78	--	--	--	--	--	--	--
		9/19/1995	--	-	98.42	29.34	29.82	0.48	68.96	--	--	--	--	--	--	--
		12/18/1995	--	-	98.42	29.35	29.50	0.15	69.03	--	--	--	--	--	--	--
		3/14/1996	--	-	98.42	NP	27.80	NP	70.62	--	--	--	--	--	--	--
		6/22/1996	--	-	98.42	27.76	27.81	0.05	70.65	--	--	--	--	--	--	--
		9/12/1996	--	-	98.42	28.58	28.59	0.01	69.84	--	--	--	--	--	--	--
		12/17/1996	--	-	98.42	28.19	28.22	0.03	70.22	--	--	--	--	--	--	--
		3/17/1998	--	-	98.42	NG	NG	NG	NG	--	--	55300	290	1100	1200	7400
		9/29/1998	--	-	98.42	NG	NG	NG	NG	--	--	25000	61	530	220	3300
		12/10/1998	--	-	98.42	NG	NG	NG	NG	--	--	31000	81	740	260	4700
		3/10/1999	--	-	98.42	NG	NG	NG	NG	--	--	43000	<50	760	270	4600
		6/22/1999	--	-	98.42	NG	NG	NG	NG	--	--	32000	<50	590	200	3700
		9/28/1999	--	-	98.42	NG	NG	NG	NG	--	--	33000	110	72	230	4300
		1/4/2000	--	-	98.42	NG	NG	NG	NG	--	--	17000	240	750	400	4100
		3/30/2000	--	-	98.42	NG	NG	NG	NG	--	--	20000	10	520	170	3100
		6/27/2000	--	-	98.42	NG	NG	NG	NG	--	--	17000	9	470	130	2700
		9/25/2000	--	-	98.42	NG	NG	NG	NG	--	--	13000	5.4	330	110	1900
		12/27/2000	--	-	98.42	NP	29.07	NP	69.35	--	--	16000	12	360	120	2100
		9/16/2001	--	-	98.42	31.54	31.67	0.13	66.85	--	--	--	--	--	--	--
		12/4/2001	--	-	98.42	31.85	31.95	0.10	66.55	--	--	32000	260	810	120	4600
		3/14/2002	--	-	98.42	NP	31.01	NP	67.41	--	--	31000	160	810	140	3800
		6/9/2002	--	-	98.42	NP	30.42	NP	68.00	--	--	28000	190	920	170	4800
		12/18/2002	--	-	98.42	31.34	31.35	0.01	67.08	--	--	31100	236	924	102	4770
		6/3/2003	--	-	98.42	30.9	30.91	0.01	67.52	--	--	26600	97.4	887	44.2	4890
		10/10/2003	--	-	98.42	31.24	31.29	0.05	67.17	--	--	40000	164	1350	57.5	7740
		4/26/2004	--	-	98.42	NP	29.85	NP	68.57	--	--	37900	207	1080	76.9	5850

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000	
MW-7		10/28/2004	--	-	98.42	31.52	31.56	0.04	66.89	--	--	17700	178	644	38.2	2710
		4/27/2005	--	-	98.42	30.06	31.35	1.29	68.04	--	--	88600	160	1460	37.8	7340
		11/22/2005	--	-	98.42	30.76	30.77	0.01	67.66	--	--	33400	194	1130	25.8	5360
		4/25/2006	--	-	98.42	NP	29.60	NP	68.82	--	--	35400	242	998	36.4	4930
		10/27/2006	--	-	98.42	NP	29.95	NP	68.47	--	--	27900	140	704	40.8	3830
		4/4/2007	--	-	98.42	NP	28.88	NP	69.54	--	--	3000	8	116	<5.00	133
		11/19/2007	--	-	98.42	NP	29.42	NP	69.00	--	--	23900	41.1	808	31.4	3340
		6/12/2008	--	-	98.42	NP	28.70	NP	69.72	--	--	1200	0.52	17.9	0.54	4.2
		10/29/2008	--	-	98.42	NP	29.36	NP	69.06	--	--	13300	7.52	363	11.6	1320
		5/15/2009	--	-	98.42	NP	28.62	NP	69.80	--	--	10200	3.7	7.9	359	1150
	MW-7_20100211	2/11/2010	--	-	98.42	NP	28.66	NP	69.76	--	--	2860	1.3	121	2.6	284
	MW-7_20100831	9/2/2010	--	-	98.42	NP	27.62	NP	70.80	120	<380	1130	<1.0	38.8	<1.0	59.7
	MW-7_20110813	9/19/2011	--	-	98.42	NP	27.29	NP	71.13	150	<380	2780	3.0	77.3	11.4	142

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA							
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)	
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000	
MW-8		1/16/1992	--	-	98.8	NP	49.00	NP	49.80	--	--	--	--	--	--	--	
		1/23/1992	--	-	98.8	NP	49.17	NP	49.63	--	--	--	--	--	--	--	
		1/31/1992	--	-	98.8	NP	50.00	NP	48.80	--	--	--	--	--	--	--	
		3/17/1998	--	-	98.8	NG	NG	NG	NG	--	--	6000	120	34	46	280	
		9/29/1998	--	-	98.8	NG	NG	NG	NG	--	--	1600	180	41	89	170	
		12/10/1998	--	-	98.8	NG	NG	NG	NG	--	--	25000	2300	500	4500	2600	
		3/10/1999	--	-	98.8	NG	NG	NG	NG	--	--	14000	1000	420	1500	1500	
		6/22/1999	--	-	98.8	NG	NG	NG	NG	--	--	3700	66	190	9	340	
		9/28/1999	--	-	98.8	NG	NG	NG	NG	--	--	760	55	65	20	130	
		1/4/2000	--	-	98.8	NG	NG	NG	NG	--	--	690	49	6	25	18	
		6/27/2000	--	-	98.8	NG	NG	NG	NG	--	--	1800	260	84	87	300	
		12/27/2000	--	-	98.8	NP	46.57	NP	52.23	--	--	360	87	<1	25	20	
		9/16/2001	--	-	98.8	NP	48.87	NP	49.93	--	--	--	--	--	--	--	
		12/4/2001	--	-	98.8	NP	49.09	NP	49.71	--	--	--	--	--	--	--	
		3/14/2002	--	-	98.8	NP	47.87	NP	50.93	--	--	4100	470	89	140	360	
		6/9/2002	--	-	98.8	NP	47.39	NP	51.41	--	--	25000	3200	830	1700	2900	
		12/18/2002	--	-	98.8	NP	48.03	NP	50.77	--	--	2530	389	65.4	77.1	256	
		6/3/2003	--	-	98.8	NP	48.03	NP	50.77	--	--	3820	974	120	72.2	286	
		10/10/2003	--	-	98.8	NP	48.50	NP	50.30	--	--	9190	1980	314	622	1490	
		4/26/2004	--	-	98.8	NP	41.01	NP	57.79	--	--	15800	2340	563	450	2110	
		10/28/2004	--	-	98.8	NP	48.50	NP	50.30	--	--	24500	5360	1350	246	3910	
		4/27/2005	--	-	98.8	NP	48.43	NP	50.37	--	--	2250	310	65.3	24.7	166	
		11/22/2005	--	-	98.8	dry	dry	dry	dry	DRY	DRY	DRY	DRY	DRY	DRY	DRY	
		4/25/2006	--	-	98.8	NP	48.40	NP	50.40	--	--	21700	3100	907	44.4	2130	
		10/27/2006	--	-	98.8	dry	dry	dry	dry	DRY	DRY	DRY	DRY	DRY	DRY	DRY	
		4/4/2007	--	-	98.8	NP	48.17	NP	50.63	--	--	14300	1820	749	29.7	261	
		11/19/2007	--	-	98.8	NP	47.59	NP	51.21	--	--	227	35.1	3.42	1.32	5.34	
		6/12/2008	--	-	98.8	NP	47.32	NP	51.48	--	--	15100	1650	648	191	1140	
		10/29/2008	--	-	98.8	NP	47.16	NP	51.64	--	--	<50.0	<0.500	<0.500	<0.500	<3.00	
		5/15/2009	--	-	98.8	NP	46.45	NP	52.35	--	--	139	15.3	<1.0	<1.0	5.8	
		MW-8_20100211	2/11/2010	--	-	98.8	NP	46.41	NP	52.39	--	--	6690	1240	621	141	607
		MW-8_20100831	9/2/2010	--	-	98.8	NP	46.64	NP	52.16	850	<380	14000	1490	1060	325	2520
		MW-8_20110813	9/19/2011	--	-	98.8	NP	47.00	NP	51.80	1100	1200	23900	826	812	44.2	1880

TABLE 2
HISTORIC GROUNDWATER GAUGING AND ANALYTICAL DATA
FACILITY NO. 2611255
19924 INTERNATIONAL BLVD
SEATAC, WASHINGTON

Well I.D.	Lab I.D.	Date	GROUND WATER GAUGING DATA							GROUND WATER ANALYTICAL DATA						
			DTB from TOC (ft)	TOS Elevation (ft)	TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	NW-DRO (C12-C24) (UG/L)	NW-ORO (C24-C40) (UG/L)	NW-GRO (C6-C12) (UG/L)	Benzene (UG/L)	Ethylbenzene (UG/L)	Toluene (UG/L)	Xylene (Total) (UG/L)
Applied Action Level: 2007 MTCA Method A			NGV	NGV	NGV	NGV	NGV	NGV	NGV	500	500	800	5	700	1000	1000
MW-9	MW-9_20100831	9/2/2010	--	-	NSVD	NP	28.90	NP	NSVD	270	<380	1760	190	159	3.6	38.6
	MW-9_20110813	9/19/2011	--	-	98.99	NP	28.60	NP	70.39	780	<380	11100	134	569	<10.0	553
MW-10	MW-10_20100831	9/2/2010	--	-	NSVD	NP	28.23	NP	NSVD	1700	<380	43300	5.3	2100	57.7	9650
	MW-10_20110813	9/19/2011	--	-	98.51	NP	27.90	NP	70.61	520	<390	7270	1.5	131	2.6	477
MW-11	MW-11_20100831	9/2/2010	--	-	NSVD	NP	27.12	NP	NSVD	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-11_20110813	9/19/2011	--	-	98.11	NP	26.87	NP	71.24	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0
MW-12	MW-12_20100831	9/2/2010	--	-	NSVD	NP	26.40	NP	NSVD	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-12_20110813	9/19/2011	--	-	97.76	NP	26.42	NP	71.34	<77	<380	<50.0	<1.0	<1.0	<1.0	<3.0
MW-13	MW-13_20100831	9/2/2010	--	-	NSVD	NP	26.68	NP	NSVD	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0
	MW-13_20110813	9/19/2011	--	-	97.33	NP	26.37	NP	70.96	<76	<380	<50.0	<1.0	<1.0	<1.0	<3.0
MW-14	MW-14_20110813	8/16/2011	--	-	99.2	NP	28.31	NP	70.89	540	<380	17900	172	731	50.4	2740
MW-15	MW-15_20110813	8/16/2011	--	-	98.49	NP	26.70	NP	71.79	<80	<400	62.7	<1.0	<1.0	<1.0	<3.0
MW-16	MW-16_20110813	9/19/2011	--	-	98.35	NP	27.82	NP	70.53	1000	<380	67900	1630	1780	4250	9320
MW-17	MW-17_20110813	9/19/2011	--	-	99.39	NP	28.47	NP	70.92	1200	<390	41300	176	1270	67.1	4830

Gauging Notes:

TOC - Top of Casing
DTB from TOC - Depth to Bottom of well from Top of Casing
TOS - Top of Screen
ft - Feet
NP - LNAPL not present
LNAPL - Light non-aqueous phase liquid
* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)
NG - Not Gauged
NSVD - Not surveyed
-- - No information available
NGV - No guidance value

Analytical Notes:

Results in Bold exceed applicable action limits
< - Not detected at or above indicated laboratory reporting limit
UG/L - micrograms/liter
NW-GRO - Northwest Gasoline Range Organics using Ecology NWTPH-Gx
NW-DRO - Northwest Diesel Range Organics
NW-ORO - Northwest Oil Range Organics
NW-DRO and NW-ORO Analyzed using Ecology Method NWTPH-Dx with silica gel cleanup
B = benzene, T = toluene, E = ethylbenzene, X = xylenes; analyzed using EPA Method 8260
MTBE = methyl tert-butyl ether analyzed using EPA Method 8260
EPA - Environmental Protection Agency
MTCA = Model Toxics Control Act

TABLE 3
GROUNDWATER GEOCHEMICAL DATA
Facility No. 2611255
19924 International Boulevard
SeaTac, Washington

		FIELD PARAMETERS						MNA PARAMETERS							
Sample I.D.	Sample Date	Temperature (°C)	Conductivity (ms/cm)	TDS (g/L)	DO (mg/L)	pH	ORP (mV)	Ferrous Iron*	Iron (µg/L)	Manganese (µg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Nitrogen as Nitrate (mg/L)	Nitrogen, NO2 + NO3 (mg/L)	Nitrite as N (mg/L)
MW-1	02/10/12	13.15	0.154	0.129	2.73	7.46	46.3	NM	NA	NA	NA	NA	NA	NA	NA
	08/01/12	16.80	0.254	0.16	3.18	6.29	61	NM	NA	NA	NA	NA	NA	NA	NA
MW-3	02/09/12	13.26	0.284	0.238	1.01	NM	42.1	0.4	<100	<15.0	133	14.9	1.0	1.0	<0.010
	08/01/12	15.50	0.897	0.59	0.5	6.47	175	NM	NA	NA	NA	NA	NA	NA	NA
MW-4	02/10/12	11.78	0.161	0.140	2.15	7.71	34.1	NM	NA	NA	NA	NA	NA	NA	NA
	08/01/12	15.80	0.288	0.19	6.43	6.57	11	NM	NA	NA	NA	NA	NA	NA	NA
MW-5	02/10/12	12.77	0.162	0.137	4.89	7.45	49.9	NM	NA	NA	NA	NA	NA	NA	NA
	08/01/12	13.3	0.336	0.210	7.15	6.19	207	1.5	<100	<15.0	37,600	18,000	NA	NA	NA
MW-6	02/09/12	12.78	0.238	0.202	1.17	NM	45.1	0.8	2,700	2,910	132	<1.0	<0.050	<0.050	<0.010
	08/01/12	16.20	0.514	0.33	0.74	6.72	-66	NM	NA	NA	NA	NA	NA	NA	NA
MW-7	02/09/12	13.56	0.327	0.272	0.87	NM	39.4	1.6	1,300	3,420	166	12.7	<0.050	<0.050	<0.010
	08/01/12	15.90	0.999	1.64	0.00	6.73	-62	2.0	1,720	3,350	189,000	11,800	NA	NA	NA
MW-8	02/09/12	NM	NM	NM	NM	NM	NM	NA	6,560	2,660	142	<1.0	<0.050	<0.050	<0.010
	08/01/12	15.30	0.421	0.27	1.02	6.60	-55	NM	NA	NA	NA	NA	NA	NA	NA
MW-9	02/09/12	13.89	0.326	0.269	0.98	NM	44.2	3.9	146,000	5,540	181	<1.0	<0.050	<0.050	<0.010
	08/01/12	16.70	0.735	0.48	1.1	6.57	-77	NM	NA	NA	NA	NA	NA	NA	NA
MW-10	02/09/12	13.43	0.354	0.295	1.01	NM	39.1	2.4	8,740	3,260	193	<1.0	<0.050	<0.050	<0.010
	08/01/12	15.70	0.999	2.44	0.00	6.67	-92	2.2	4,350	4,410	210,000	25,200	NA	NA	NA
MW-11	02/10/12	13.10	0.248	0.208	0.84	7.56	42.4	NM	NA	NA	NA	NA	NA	NA	NA
	08/01/12	15.50	0.490	0.32	0.02	6.71	-39	NM	NA	NA	NA	NA	NA	NA	NA
MW-12	02/10/12	13.69	0.258	0.214	1.98	7.44	44.7	NM	NA	NA	NA	NA	NA	NA	NA
	08/01/12	14.70	0.999	0.30	0.90	6.42	175	NA	NA	NA	NA	NA	NA	NA	NA
MW-13	02/09/12	13.74	0.309	0.256	1.28	7.93	42.9	0	170	<15.0	121	26.3	2.9	2.9	<0.010
	08/01/12	14.70	0.999	1.36	0.00	6.32	170	NM	NA	NA	NA	NA	NA	NA	NA
MW-14	02/09/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/01/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-15	02/09/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	08/01/12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-16	02/09/12	12.23	0.245	0.211	0.99	NM	38.7	4.1	3,580	2,410	114	<1.0	<0.050	<0.050	<0.010
	08/01/12	14.70	0.526	0.34	1.95	6.77	-71	NM	NA	NA	NA	NA	NA	NA	NA

TABLE 3
GROUNDWATER GEOCHEMICAL DATA

Facility No. 2611255
19924 International Boulevard
SeaTac, Washington

Sample I.D.	Sample Date	Temperature (°C)	Conductivity (ms/cm)	TDS (g/L)	DO (mg/L)	pH	ORP (mV)	Ferrous Iron*	Iron (µg/L)	Manganese (µg/L)	Total Alkalinity (mg/L)	Sulfate (mg/L)	Nitrogen as Nitrate (mg/L)	Nitrogen, NO ₂ + NO ₃ (mg/L)	Nitrite as N (mg/L)
MW-17	02/09/12	13.37	0.270	0.226	1.79	NM	42.7	NM	110,000	5,150	145	<1.0	<0.050	<0.050	<0.010
	08/01/12	16.40	0.618	0.39	0.79	6.66	-43	1.8	1,150	3,590	220,000	1,150	NA	NA	NA

Notes:

µg/L = micrograms per liter

mg/L = milligram per liter

* = Ferrous Iron measured in field.

<n = Below the detection limit

NA = Not Analyzed

Iron , Lead, dissolved lead, and dissolved lead analyzed by method EPA 6010.

Alkalinity analyzed by method SM2320B.

Sulfate analyzed by method EPA 300.0.

Nitrogen analyzed by method EPA 353.2.

TABLE 4
SOIL AND GROUNDWATER CLEANUP LEVELS

Facility No. 2611255
19924 International Boulevard
SeaTac, Washington

Constituent of Concern	Soil - MTCA Method A (Table Value)	Groundwater - MTCA Method A (Table Value)
	<i>Soil (mg/kg)</i>	<i>Groundwater (µg/L)</i>
TPH-G	30	800 / 1,000*
Benzene	0.03	5
Toluene	7.0	1,000
Ethylbenzene	6.0	700
Total Xylenes	9.0	1,000
MTBE	0.1	20
Lead	250	15

Notes:

MTCA = Model Toxics Control Act

* Cleanup levels for TPH-G: Benzene present / No Benzene present.

TPH-G = Total Petroleum Hydrocarbons as Gasoline

MTBE = Methyl Tert-Butyl Ether

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

Figures

Figure 1	Property Location Map
Figure 2	Property Map
Figure 3	Property Layout with Subsurface Utility Locations
Figure 4	Soil Analytical Data Map – 2010 and 2011
Figure 5	Property Layout with Geologic Cross Section Lines A-A' and B-B'
Figure 6	Geologic Cross Section A-A'
Figure 7	Geologic Cross Section B-B'
Figure 8	Groundwater Flow Direction Rose Diagram
Figure 9	Groundwater Elevation Contour Map – 08/01/2012
Figure 10	Groundwater Analytical Data Map – 02/09/2012, 02/10/2012 and 08/01/2012

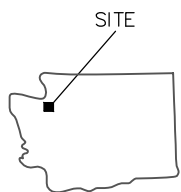
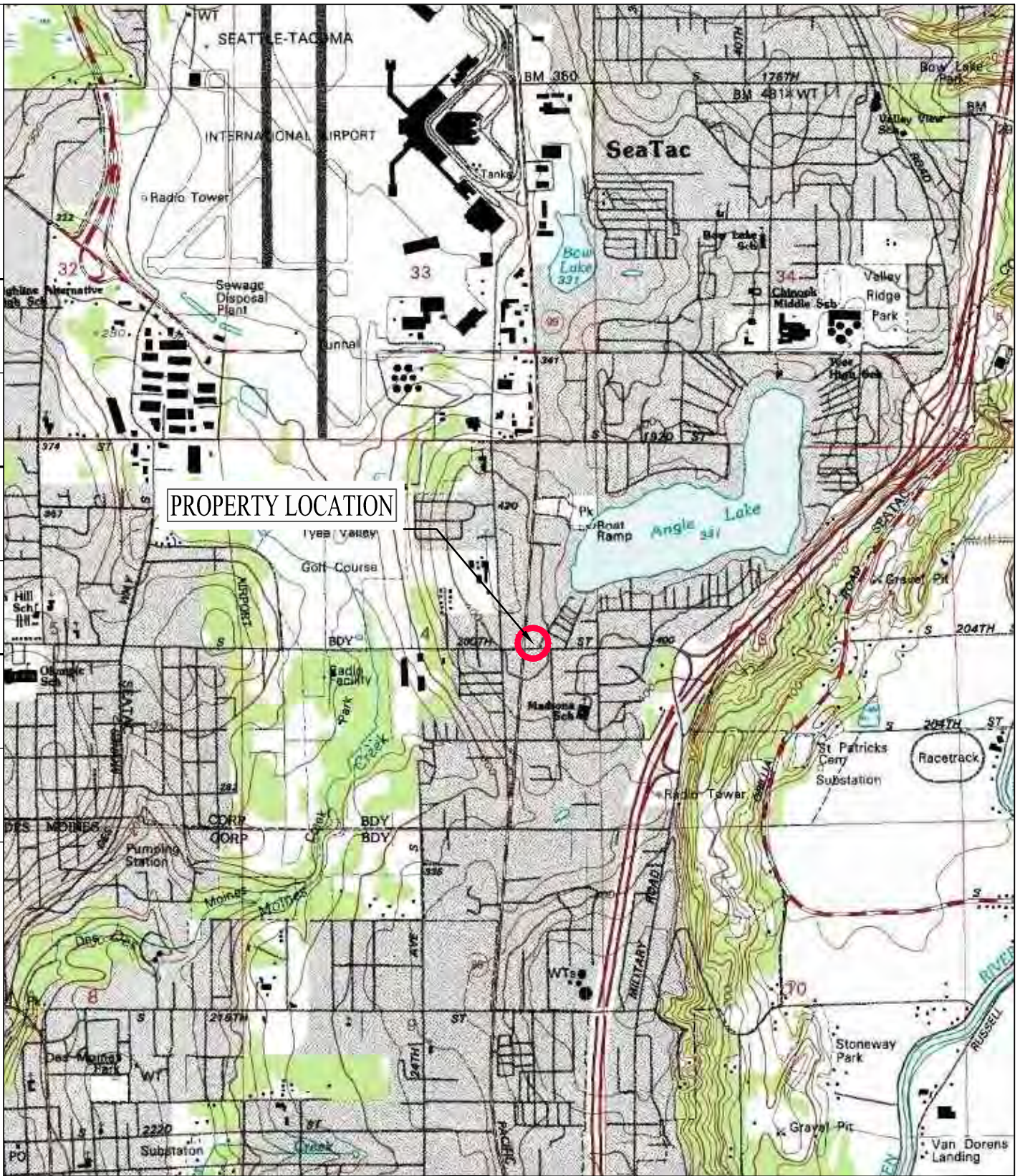
PROJECT NUMBER 142611255

APPROVED BY

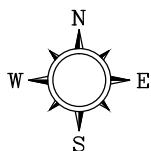
CHECKED BY

DRAWN BY
ICD 02/11/2013

0 1000 2000
SCALE IN FEET



LATITUDE 47D 25M 22S NORTH
LONGITUDE 122D 17M 45S WEST

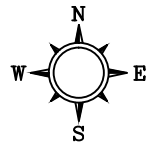
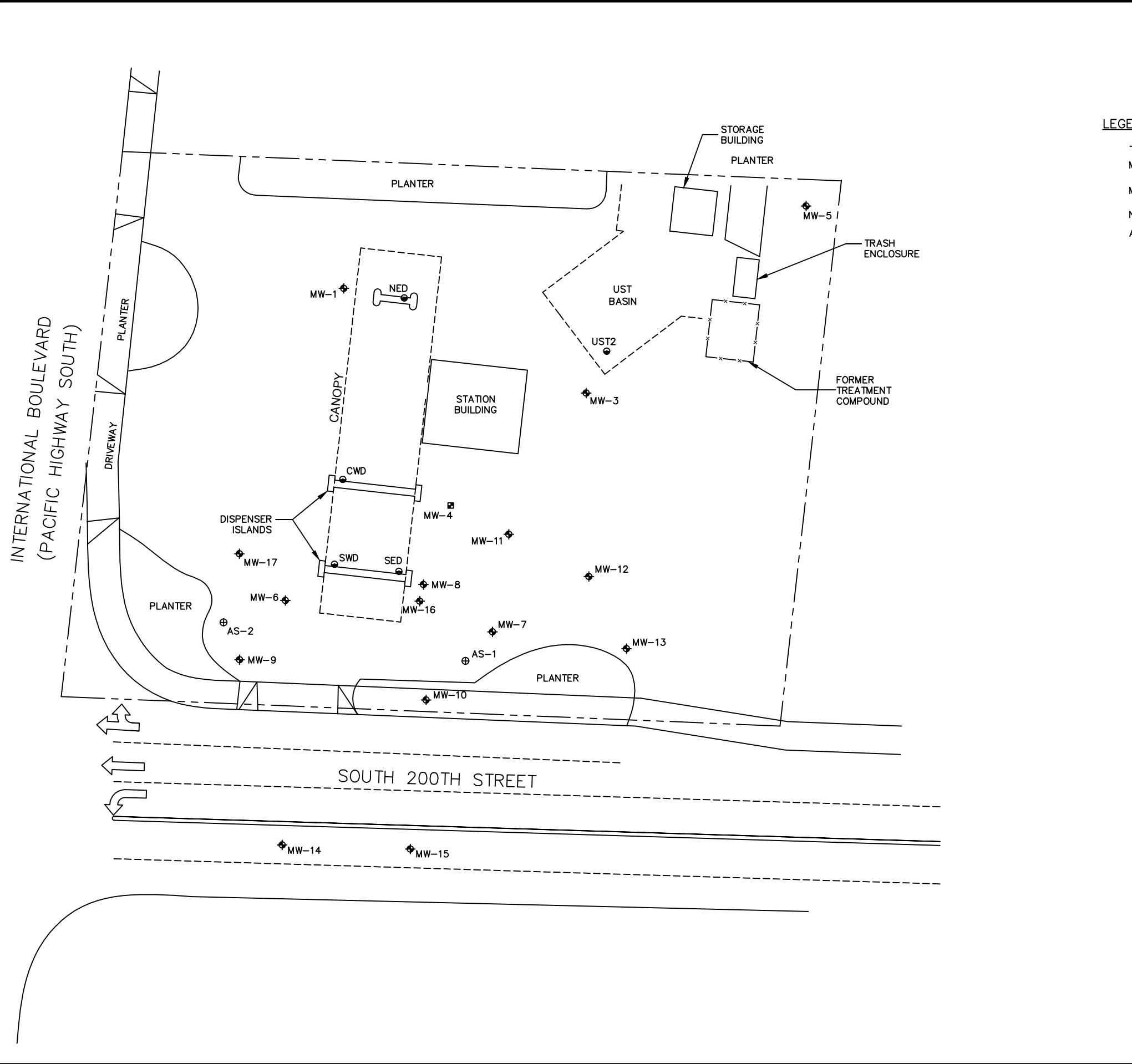


FACILITY No. 2611255

FIGURE 1

PROPERTY LOCATION MAP

19924 INTERNATIONAL BOULEVARD
SEATAC, WASHINGTON



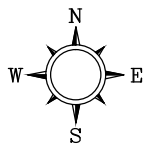
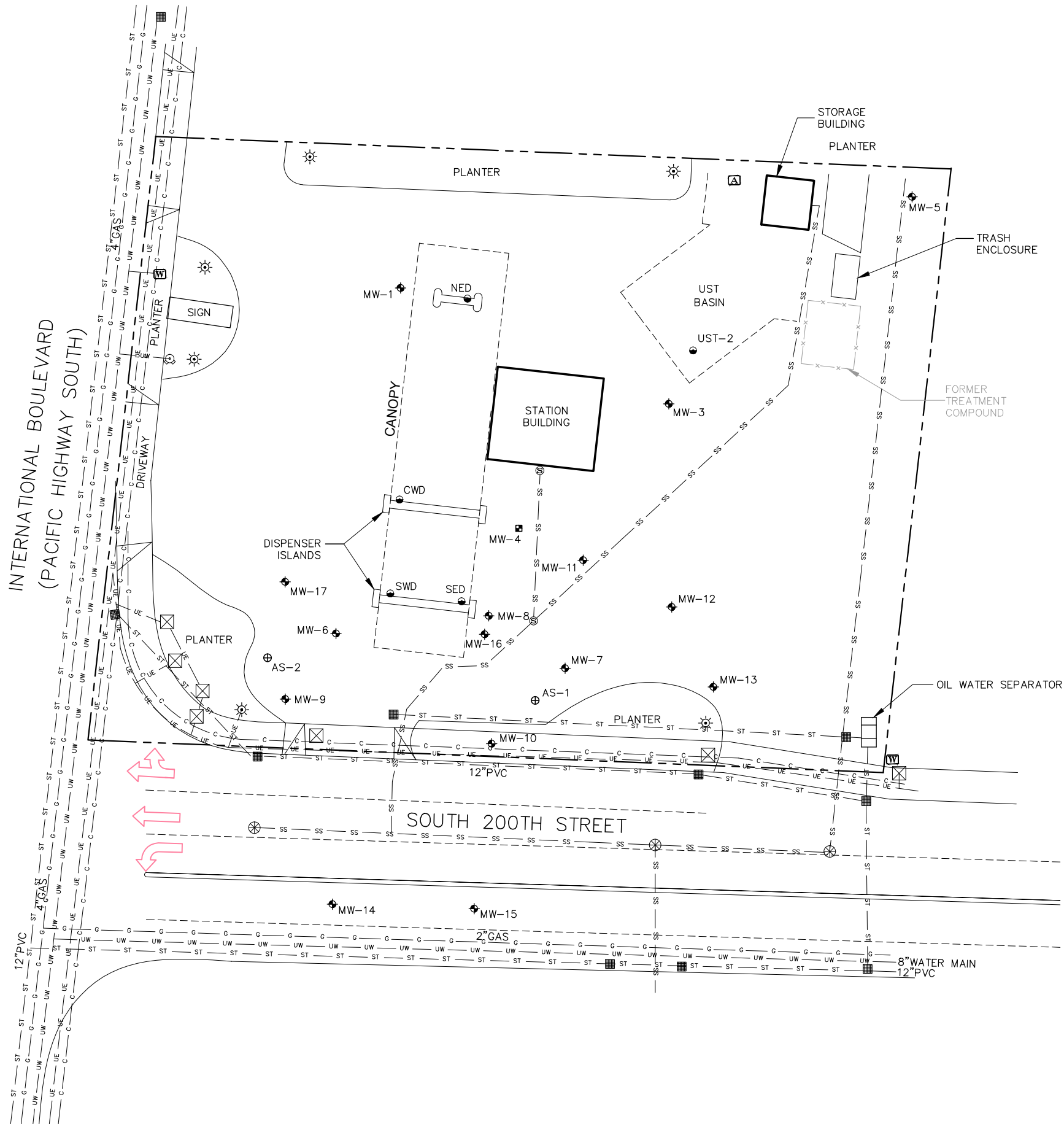
LEGEND	
---	PROPERTY LINE
MW-1 ◆	GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
MW-4 □	RECOVERY WELL LOCATION AND DESIGNATION
NED ●	SOIL SAMPLE LOCATION (EMCON)
AS-1 ⊕	AIR SPARGE WELL LOCATION AND DESIGNATION

0 15 30
SCALE IN FEET



FIGURE 2
PROPERTY MAP

FACILITY No. 2611255
19924 INTERNATIONAL BOULEVARD
SEATAC, WASHINGTON



LEGEND	
---	PROPERTY LINE
MW-1	GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
MW-4	RECOVERY WELL LOCATION AND DESIGNATION
NED	SOIL SAMPLE LOCATION (EMCON)
AS-1	AIR SPARGE WELL LOCATION AND DESIGNATION
SS	SANITARY SEWER
UE	UNDERGROUND ELECTRIC LINE
C	UNDERGROUND UTILITY COMMUNICATIONS
G	GAS LINE
ST	STORM SEWER
UW	UNDERGROUND WATER LINE
Light Pole Symbol	LIGHT POLE
Storm Drain Symbol	STORM DRAIN/CATCH BASIN
Fire Hydrant Symbol	FIRE HYDRANT
Cleanout Symbol	CLEANOUT
Air Symbol	AIR
Traffic Signal Box Symbol	TRAFFIC SIGNAL BOX
Water Meter Symbol	WATER METER

NOTE:
LOCATIONS OF UTILITIES ARE APPROXIMATE.
UTILITY INFORMATION OBTAINED FROM CITY OF SEATAC
AS-BUILTS AND MIDWAY SEWER DISTRICT AS-BUILTS

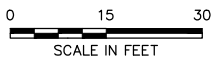
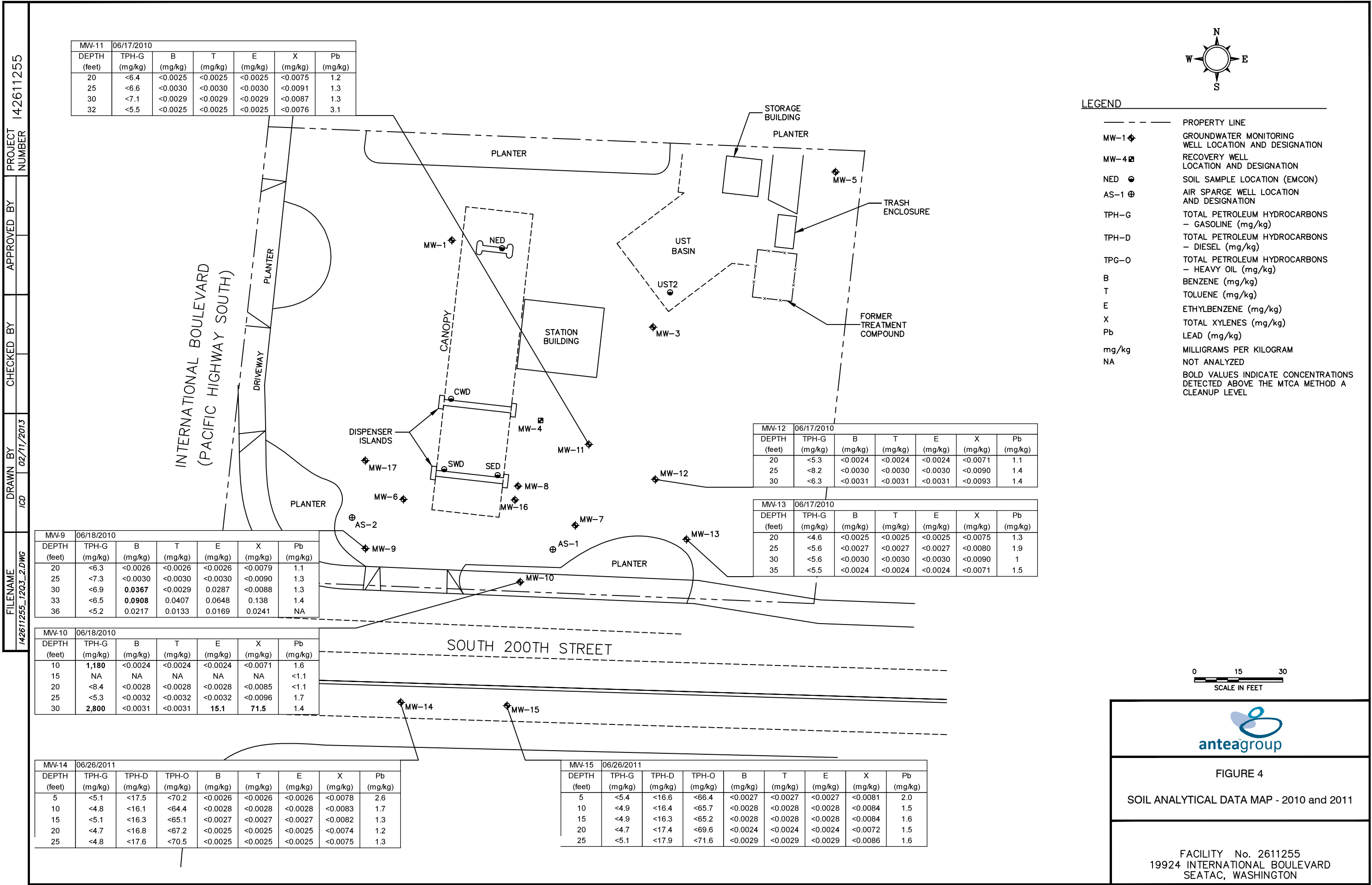
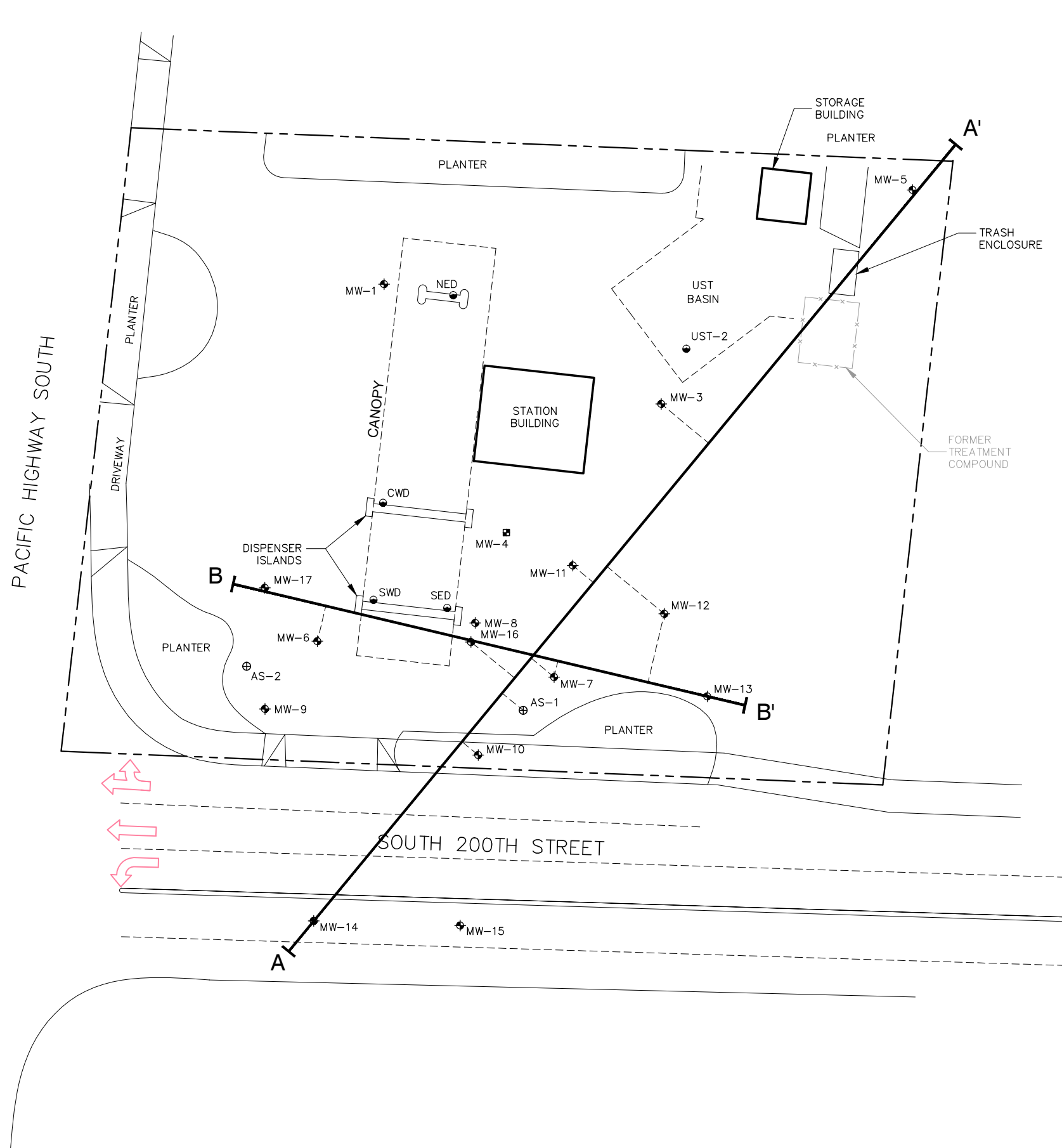


FIGURE 3

PROPERTY LAYOUT WITH SUBSURFACE
UTILITY LOCATIONS

FACILITY No. 2611255
19924 INTERNATIONAL BOULEVARD
SEATAC, WASHINGTON





LEGEND

MW-1 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

MW-4 RECOVERY WELL LOCATION AND DESIGNATION

NED SOIL SAMPLE LOCATION (EMCON)

AS-1 AIR SPARGE WELL LOCATION AND DESIGNATION

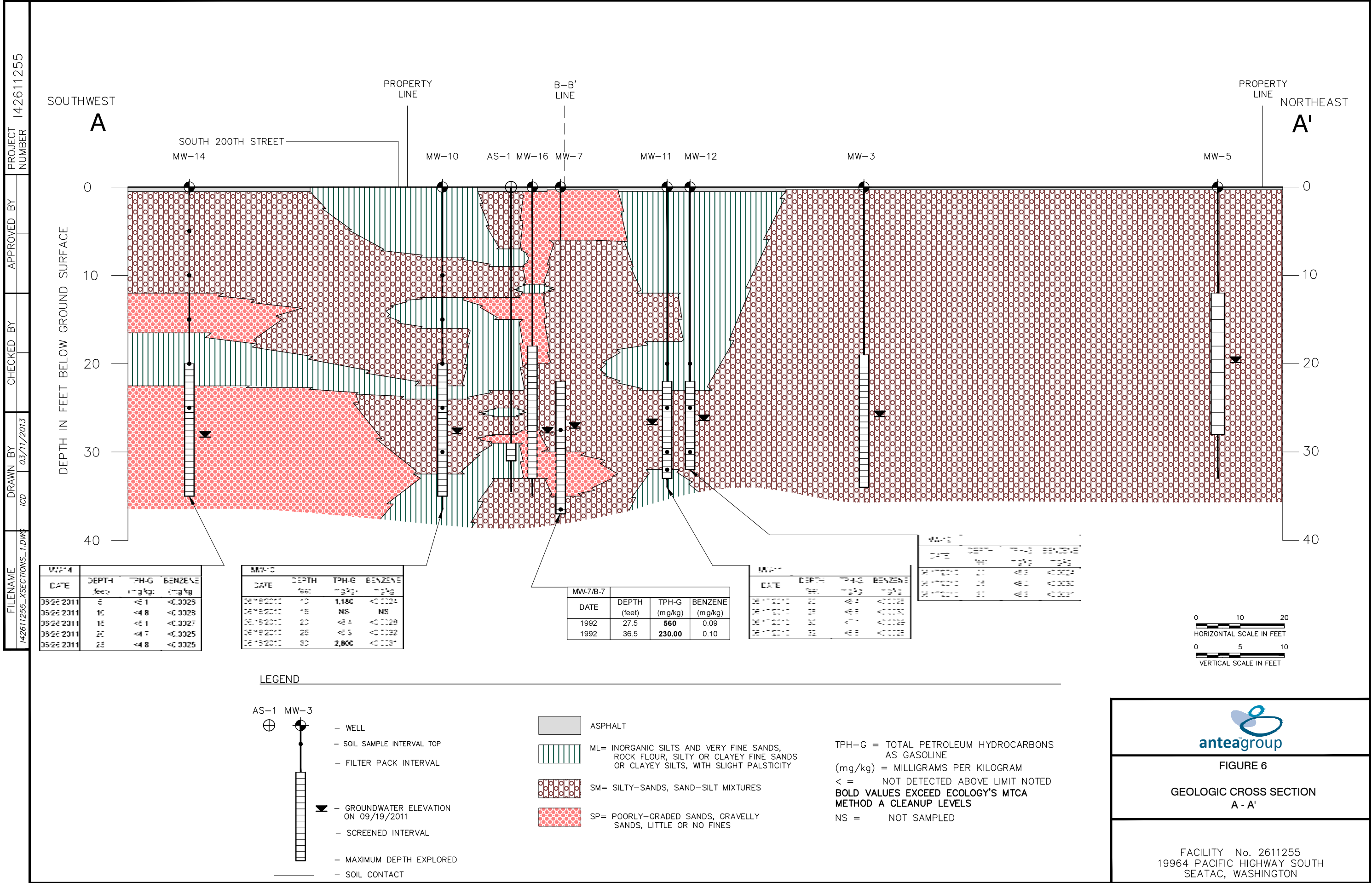
A-A' LINE OF LITHOLOGIC CROSS SECTION AND PROJECTION LINE OR BORING/WELL

0 15 30
SCALE IN FEET



FIGURE 5
PROPERTY LAYOUT WITH GEOLOGIC
CROSS SECTION
LINES A-A' AND B-B'

FACILITY No. 2611255
19964 PACIFIC HIGHWAY SOUTH
SEATAC, WASHINGTON



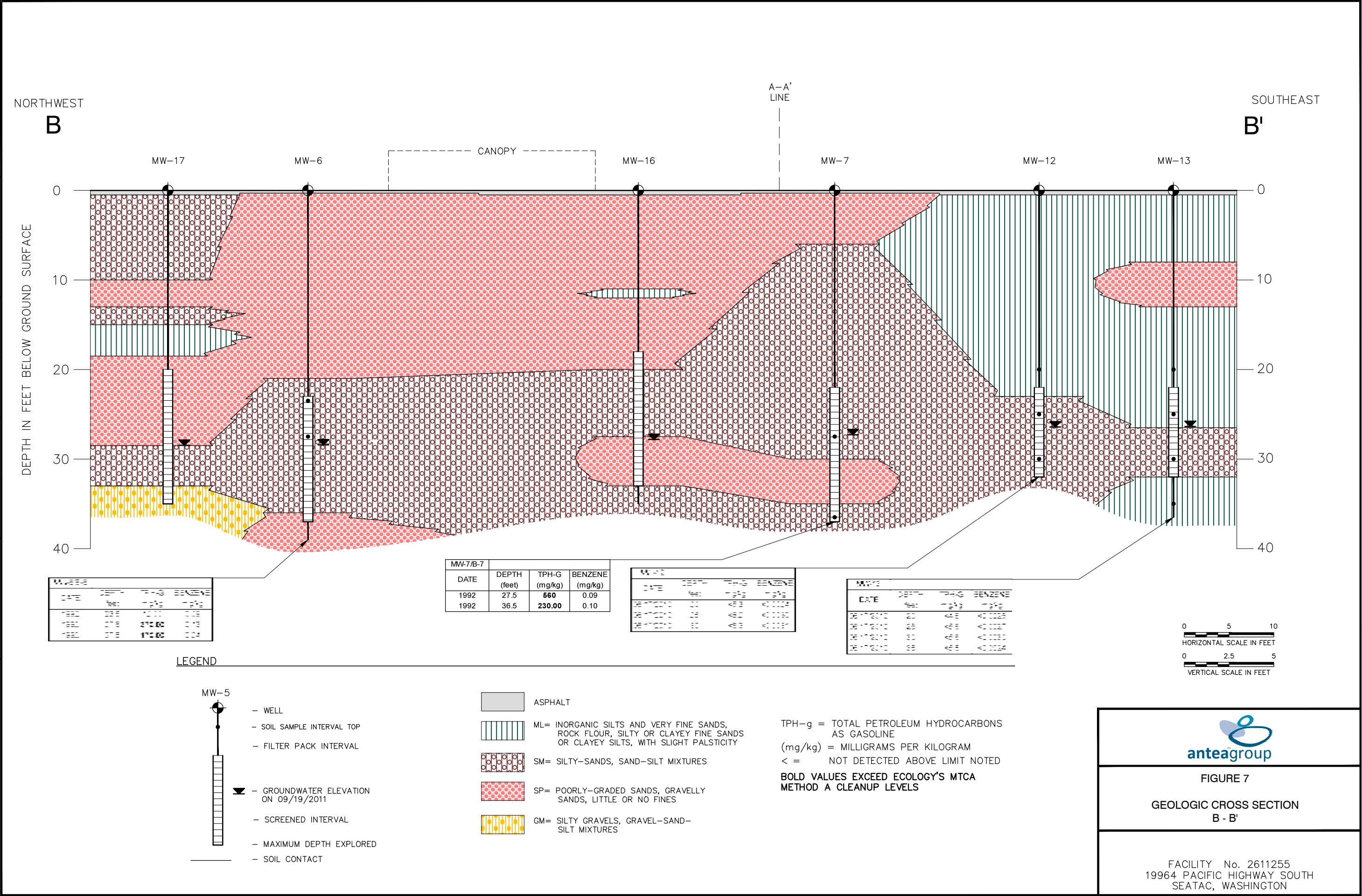
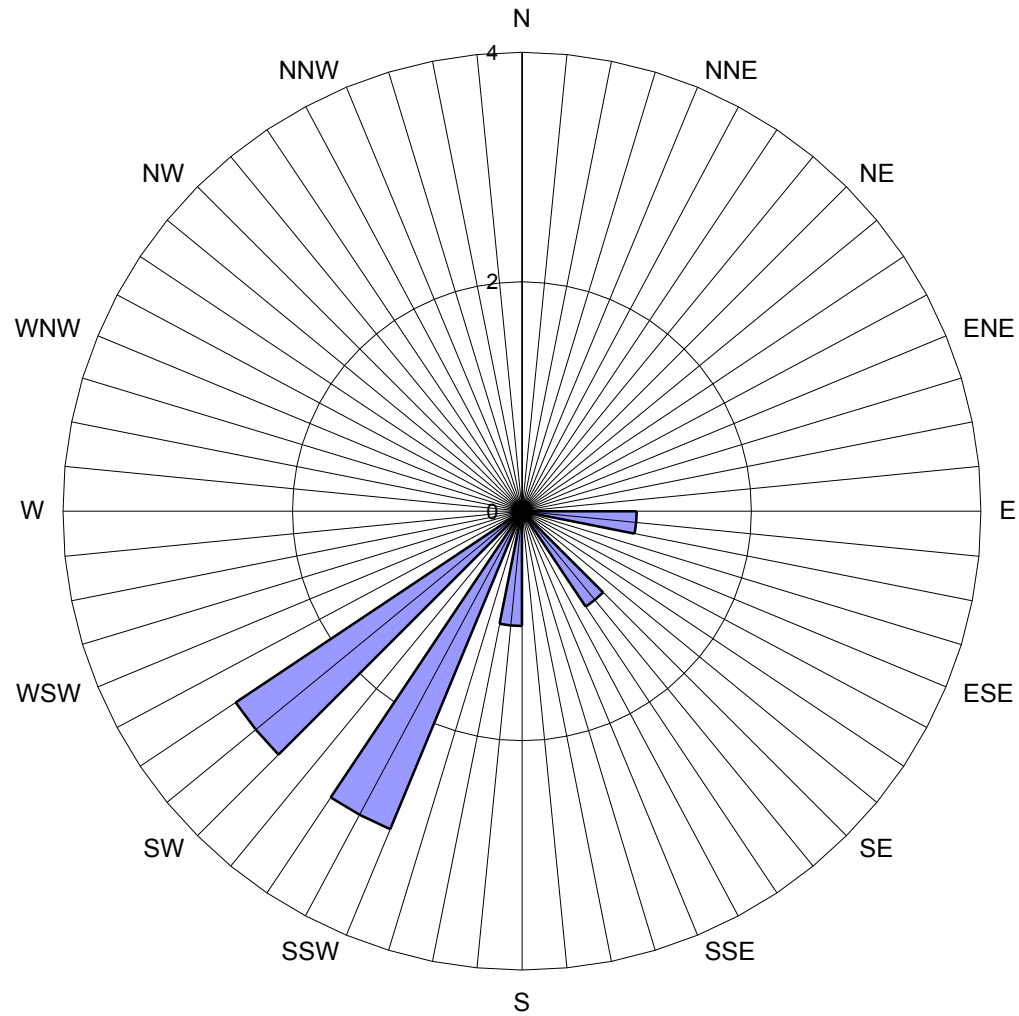


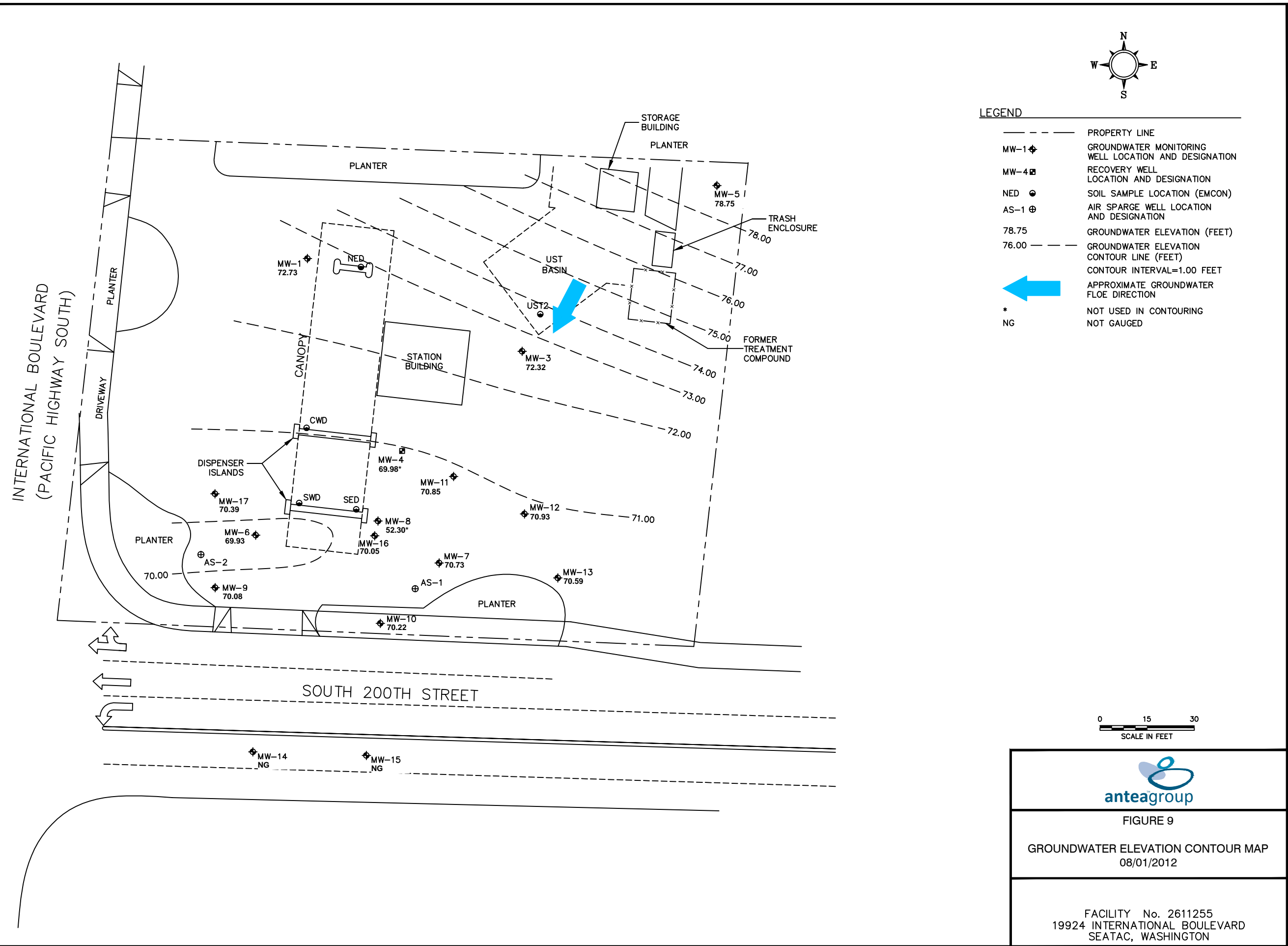
Figure 8
Groundwater Flow Direction Rose Diagram
Facility No. 2611255
19924 International Boulevard
SeaTac, Washington

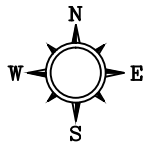
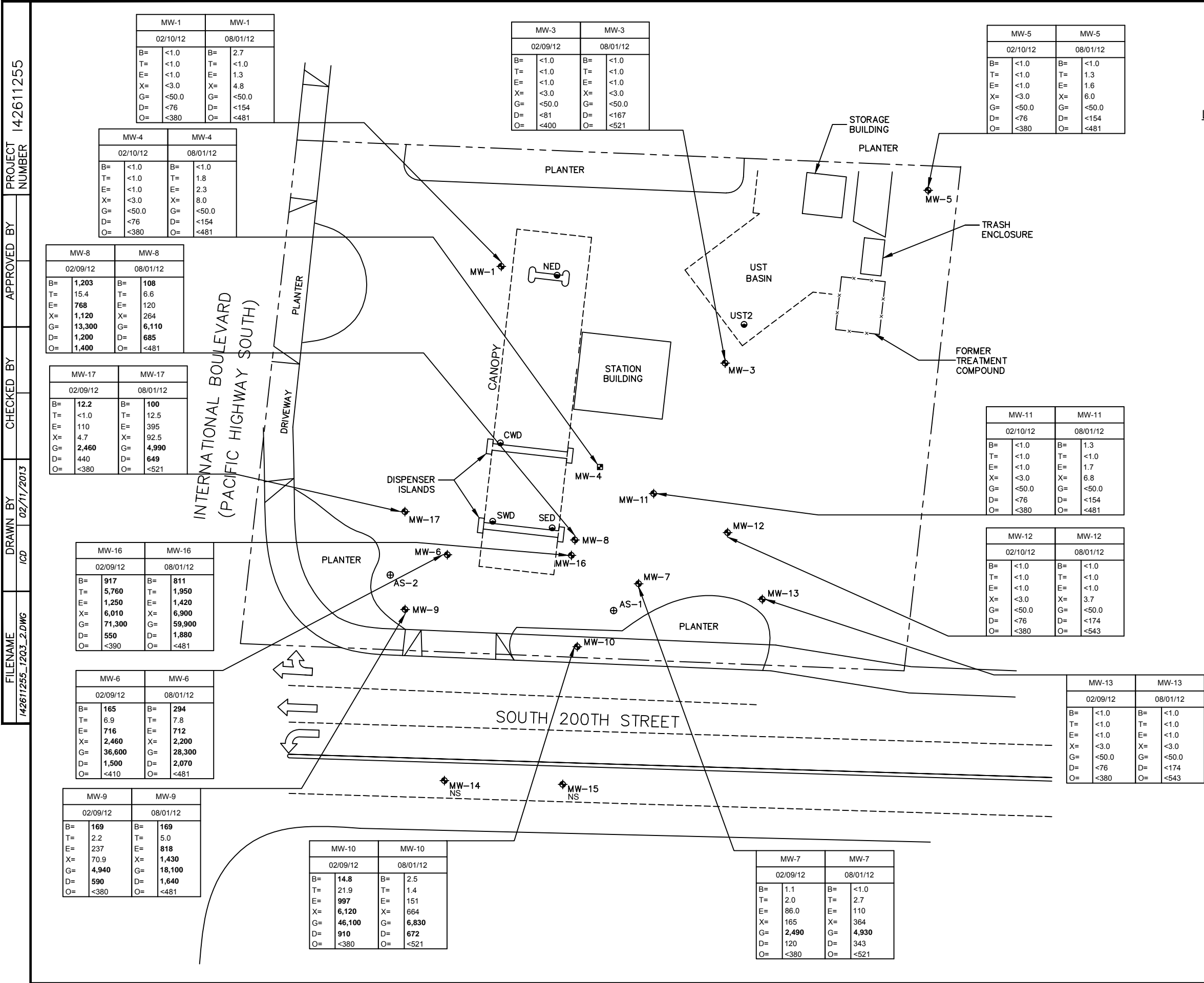


Legend
Concentric Circles represent
Groundwater Monitoring Events
2004 through 2012
9 Events shown

■ Groundwater Flow Direction

FILENAME	DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER
I42611255_1203_2.DWG	ICD	02/11/2013		I42611255





0 15 30
SCALE IN FEET



FIGURE 10

GROUNDWATER ANALYTICAL DATA MAP
02/09/2012, 02/10/2012 AND 08/01/2012

FACILITY No. 2611255
19924 INTERNATIONAL BOULEVARD
SEATAC, WASHINGTON

Appendix A

Legal Description of Property



KRPH QHZ V VHUYLFHV GIWHFWRU\ FRQWDFW

Search

King County Department of Assessments

Fair, Equitable, and Understandable Property Valuations

You're in: Assessments >> Online Services >> eReal Property

[SHARE](#)[New Search](#) [Property Tax Bill](#) [Map This Property](#) [Glossary of Terms](#) [Area Report](#) [Print Property Detail](#)

PARCEL DATA

Parcel	042204-9234	Jurisdiction	SEA-TAC
Name	SUNNY MONNY RAJAN INC 2	Levy Code	2231
Site Address	19924 INTERNATIONAL BLVD 98188	Property Type	C
Geo Area	50-50	Plat Block / Building Number	
Spec Area	410-0	Plat Lot / Unit Number	
Property Name	76 FOOD MART	Quarter-Section-Township-Range	NE-4 -22-4

Legal Description

LOT 4 KING CO SHORT PLAT NO 775001 RECORDING NO 7509160522 BEING A PORTION OF SE QTR NE QTR STR 04-22-04 EXC PORTION AWARDED TO CITY OF SEATAC BY DECREE ENTERED 10 APRIL 2000 IN KING CO SUPERIOR COURT CAUSE NO 99-2-10010-7KNT DAF: BEGINNING AT INTERSECTION OF ELY MARGIN OF PACIFIC HWY S WITH N MARGIN OF S 200TH ST TH ALONG SAID ELY MARGIN N06-05-08E 150.00 FT TO N PARCEL LINE TH ALONG N PARCEL LINE S88-26-37E PARALLEL WITH SAID N MARGIN OF S 200TH ST 6.02 FT TO POINT 6.00 FT ELY AS MEASURED PERPENDICULAR TO ELY MARGIN OF PACIFIC HWY S TH PARALLEL WITH SAID ELY MARGIN S06-05-08W 88.71 FT TH S22-54-15E 62.73 FT TO POINT 4.00 FT ELY AS MEASURED PERPENDICULAR TO N MARGIN OF S 200TH ST TH PARALLEL WITH SAID N MARGIN S88-26-37E 163.47 FT TO ELY PARCEL LINE TH ALONG ELY PARCEL LINE S06-05-08W 4.01 FT TO N MARGIN OF S 200TH ST TH ALONG SAID N MARGIN N88-26-37W 200.00 FT TO POB

LAND DATA

Highest & Best Use As If Vacant	COMMERCIAL SERVICE	Percentage Unusable	0
Highest & Best Use As Improved	PRESENT USE	Unbuildable	NO
Present Use	Conv Store with Gas	Restrictive Size Shape	NO
Base Land Value SqFt	40	Zoning	CB-C
Base Land Value	1,100,200	Water	WATER DISTRICT
% Base Land Value Impacted	100	Sewer/Septic	PUBLIC
Base Land Valued Date	12/6/2012	Road Access	PUBLIC
Base Land Value Tax Year	2014	Parking	ADEQUATE
Land SqFt	27,505	Street Surface	PAVED
Acres	0.63		

Views

Rainier	
Territorial	
Olympics	
Cascades	
Seattle Skyline	
Puget Sound	
Lake Washington	
Lake Sammamish	
Lake/River/Creek	
Other View	

Waterfront

Waterfront Location	
Waterfront Footage	
Lot Depth Factor	
Waterfront Bank	
Tide/Shore	
Waterfront Restricted Access	
Waterfront Access Rights	NO
Poor Quality	
Proximity Influence	NO

Designations

Historic Site	
Current Use	
Nbr Bldg Sites	
Adjacent to Golf Fairway	NO
Adjacent to Greenbelt	NO
Other Designation	NO
Deed Restrictions	NO
Development Rights Purchased	NO
Easements	NO
Native Growth Protection Easement	NO
DNR Lease	NO

Nuisances

Topography	NO
Traffic Noise	
Airport Noise	
Power Lines	NO
Other Nuisances	NO

Problems

Water Problems	NO
Transportation Concurrency	NO
Other Problems	NO

Environmental

Environmental	NO
---------------	----

BUILDING

Building Number	1
Building Description	C-Store w/ Gas
Number Of Buildings Aggregated	1
Predominant Use	MINI-MART CONVENIENCE STORE (531)
Shape	Rect or Slight Irreg



Click the camera to see more pictures.

Reference Links:

- [King County Tax Links](#)
- [Property Tax Advisor](#)
- [Washington State Department of Revenue](#) (External link)
- [Washington State Board of Tax Appeals](#) (External link)
- [Board of Appeals/Equalization](#)
- [Districts Report](#)
- [iMap](#)
- [Recorder's Office](#)

[Scanned images of surveys and other map documents](#)

Construction Class	PREFAB STEEL
Building Quality	EXCELLENT
Stories	1
Building Gross Sq Ft	672
Building Net Sq Ft	672
Year Built	1983
Eff. Year	1996
Percentage Complete	100
Heating System	HEAT PUMP
Sprinklers	No
Elevators	

Picture of Building 1

Section(s) Of Building Number: 1

Section Number	Section Use	Description	Stories	Height	Floor Number	Gross Sq Ft	Net Sq Ft
1	MINI-MART CONVENIENCE STORE (531)		1	12		672	672

Accessory

Accessory Type	Picture	Description	Qty	Unit Of Measure	Size	Grade	Eff Yr	%	Value	Date Valued
Miscellaneous		Type I							400000	3/31/2004

TAX ROLL HISTORY

Account	Valued Year	Tax Year	Omit Year	Levy Code	Appraised Land Value	Appraised Imps Value	Appraised Total Value	New Dollars	Taxable Land Value	Taxable Imps Value	Taxable Total Value	Tax Value Reason
042204923405	2012	2013		2231	\$1,100,200	\$544,200	\$1,644,400	\$0	\$1,100,200	\$544,200	\$1,644,400	
042204923405	2011	2012		2231	\$1,100,200	\$546,600	\$1,646,800	\$0	\$1,100,200	\$546,600	\$1,646,800	
042204923405	2010	2011		2231	\$1,237,700	\$495,800	\$1,733,500	\$0	\$1,237,700	\$495,800	\$1,733,500	
042204923405	2009	2010		2231	\$1,265,200	\$501,200	\$1,766,400	\$0	\$1,265,200	\$501,200	\$1,766,400	
042204923405	2008	2009		2231	\$1,265,200	\$498,100	\$1,763,300	\$0	\$1,265,200	\$498,100	\$1,763,300	
042204923405	2007	2008		2233	\$1,265,200	\$496,500	\$1,761,700	\$0	\$1,265,200	\$496,500	\$1,761,700	
042204923405	2006	2007		2233	\$1,265,200	\$492,100	\$1,757,300	\$0	\$1,265,200	\$492,100	\$1,757,300	
042204923405	2005	2006		2233	\$632,600	\$483,300	\$1,115,900	\$0	\$632,600	\$483,300	\$1,115,900	
042204923405	2004	2005		2233	\$690,000	\$485,200	\$1,175,200	\$0	\$690,000	\$485,200	\$1,175,200	
042204923405	2003	2004		2233	\$690,000	\$384,100	\$1,074,100	\$0	\$690,000	\$384,100	\$1,074,100	
042204923405	2002	2003		2233	\$600,000	\$379,800	\$979,800	\$0	\$600,000	\$379,800	\$979,800	
042204923405	2001	2002		2233	\$600,000	\$379,900	\$979,900	\$0	\$600,000	\$379,900	\$979,900	
042204923405	2000	2001		2233	\$420,000	\$378,100	\$798,100	\$0	\$420,000	\$378,100	\$798,100	
042204923405	1999	2000		2233	\$420,000	\$202,800	\$622,800	\$0	\$420,000	\$202,800	\$622,800	
042204923405	1998	1999		2233	\$420,000	\$153,000	\$573,000	\$0	\$420,000	\$153,000	\$573,000	
042204923405	1997	1998		2233	\$0	\$0	\$0	\$0	\$420,000	\$153,000	\$573,000	
042204923405	1996	1997		2233	\$0	\$0	\$0	\$0	\$420,000	\$153,000	\$573,000	
042204923405	1994	1995		2233	\$0	\$0	\$0	\$0	\$420,000	\$153,000	\$573,000	
042204923405	1992	1993		2233	\$0	\$0	\$0	\$0	\$420,000	\$139,900	\$559,900	
042204923405	1990	1991		2233	\$0	\$0	\$0	\$0	\$330,000	\$132,000	\$462,000	
042204923405	1988	1989		3940	\$0	\$0	\$0	\$0	\$285,000	\$115,900	\$400,900	
042204923405	1986	1987		3940	\$0	\$0	\$0	\$0	\$255,400	\$125,100	\$380,500	
042204923405	1984	1985		3940	\$0	\$0	\$0	\$0	\$255,400	\$125,100	\$380,500	
042204923405	1982	1983		3940	\$0	\$0	\$0	\$0	\$126,000	\$50,200	\$176,200	

SALES HISTORY

Excise Number	Recording Number	Document Date	Sale Price	Seller Name	Buyer Name	Instrument	Sale Reason
2427969	20100205001069	1/29/2010	\$875,000.00	NORTHWEST DEALERCO HOLDINGS LLC	MONY SUNNY+RAJAN INC 2	Statutory Warranty Deed	None
2420194	20091203000844	11/9/2009	\$564,506.00	CONOCO PHILLIPS COMPANY	NORTHWEST DEALER CO HOLDINGS LLC	Special Warranty Deed	None
1350132	199312281674	12/9/1993	\$1,708,757.00	BP EXPLORATION & OIL INC.	TOSCO CORP	Warranty Deed	None

REVIEW HISTORY

Tax Year	Review Number	Review Type	Appealed Value	Hearing Date	Settlement Value	Decision	Status
2001	0004852	Local Appeal	\$798,100	10/1/2001	\$798,100	SUSTAIN	Completed
1997	9605095	Local Appeal	\$573,000	1/1/1900	\$0		Completed

PERMIT HISTORY**HOME IMPROVEMENT EXEMPTION**

Updated: Jan. 24, 2013

[Quick answers](#) | [Property assessments](#) | [Taxpayer assistance](#) | [Online services](#) | [Reports, data](#) | [Forms](#) | [News room](#) | [Contact us](#) | [About us](#) | [Site map](#)

[Home](#) | [Privacy](#) | [Accessibility](#) | [Terms of use](#) | [Search](#)

Links to external sites do not constitute endorsements by King County. By visiting this and other King County web pages, you expressly agree to be bound by terms and conditions of the site.

© 2013 King County

Appendix B

Summary of Previous Investigations and Remedial Activities

APPENDIX B – SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIVITIES

- Rittenhouse-Zeman & Associates (RZA) directed the advancement of five soil borings at the Property to depths of approximately 35 feet to 40 feet below ground surface (bgs). Four soil borings were completed as monitoring wells (MW-1, MW-3, MW-4 and MW-5). Soil analytical results were below laboratory Method Report Limits (MRLs) for total petroleum hydrocarbons (TPH) and for benzene, toluene, ethylbenzene and total xylenes (BTEX). However, groundwater collected from well MW-4 contained concentrations of TPH as gasoline (TPH-G) and BTEX at 32,000 parts per billion (ppb), 7,890 ppb, 10,700 ppb, 62 ppb, and 5,370 ppb, respectively. In June 1991, RZA observed a measurable amount of light non-aqueous phase liquids (LNAPL) within well MW-4. An emergency product recovery system was subsequently installed.
- In January 1992, RZA conducted an additional investigation which included the advancement of soil borings B-6 through B-8 to depths between 37 feet and 49.5 feet bgs. Soil samples collected between 23.5 feet and 47.5 feet bgs contained concentrations of TPH-G and BTEX up to 1,300 parts per million (ppm), 2.50 ppm, 25.00 ppm, 10.00 ppm, and 43.00 ppm, respectively. The borings were completed as monitoring wells MW-6 through MW-8 and also well MW-4 was over-drilled from the original depth of 33.5 feet to a depth of 45 feet bgs. Upon over-drilling well MW-4, the product recovery system was not reinstalled due to lack of groundwater. The depth of water present after well installation varied significantly indicating a perched water table with lenses of sand and gravel affecting groundwater flow. Groundwater samples were collected from wells MW-1, MW-3, MW-5, MW-6, and MW-7. Wells MW-4 and MW-8 did not contain sufficient groundwater and were not sampled. Concentrations of TPH-G and BTEX were detected up to 9,100 ppb, 610 ppb, 6,900 ppb, 1,000 ppb, and 14,000 ppb, respectively. A vacuum test was completed on MW-4 since it no longer encountered any of the perched groundwater. The radius of influence to other wells onsite was determined to be 45 feet.
- In April 1994, EMCON collected soil samples during the installation of a Stage II vapor recovery system. Four soil samples were collected at depths between 1 and 2 feet bgs from the northeast, central-west, southeast, and southwest dispenser island areas. Soil analytical results indicated that concentrations of TPH-G, TPH as diesel (TPH-D) and BTEX were detected up to 14,000 ppm, 2,820 ppm, 0.25 ppm, 87 ppm, 40 ppm, and 980 ppm, respectively. During the vapor recovery system upgrade, EMCON also collected a soil sample from the UST excavation. Concentrations of TPH-G and BTEX were detected at 18,000 ppm, 240 ppm, 1,200 ppm, 280 ppm, and 1,600 ppm, respectively. The depth of the soil sample was not reported.
- Alisto Engineering Group (Alisto) conducted vapor extraction testing using a soil vapor extraction (SVE) system already onsite. The SVE system was reportedly connected to well MW-4. After repairs were completed to the system, the observed radius of influence was 50 feet from well MW-4.
- Delta Consultants directed the drilling and installation of five groundwater monitoring wells (MW-9 to MW-13) at the Property in June of 2010. Soil borings were advanced to depths of 33.5

to 36.5 feet bgs and completed as groundwater monitoring wells. A total of 22 soil samples were collected at depths ranging from 10 feet to 36 feet bgs. Concentrations of TPH-G were detected above the Washington State Department of Ecology's Model Toxics Control Act (MTCA) Method A cleanup level in the soil samples collected at 10 feet and 30 feet bgs from MW-10 at 1,180 milligrams per kilogram (mg/kg) and 2,800 mg/kg, respectively. The soil sample collected from MW-10 at 30 feet bgs also contained concentrations of ethylbenzene and total xylenes above the MTCA Method A cleanup level at 15.1 mg/kg and 71.5 mg/kg, respectively. Concentrations of benzene were detected above the MTCA Method A cleanup level in the soil samples collected at 30 feet and 33 feet bgs from MW-9 at 0.0367 mg/kg and 0.0908 mg/kg, respectively.

- On June 26, 2011 Antea Group directed the installation of two additional groundwater monitoring wells (MW-14 and MW-15) hydrostatically downgradient from the Property. Locations in the South 200th Street roadway were selected and drilled under permit from the City of SeaTac. The borings were drilled to a depth of 36.5 feet and completed as groundwater monitoring wells. The soil analytical results indicate concentrations of TPH-G, TPH-D, TPH as oil (TPH-O), BTEX, and methyl tert-butyl ether (MTBE) were not detected above the laboratory MRLs in the soil samples collected from borings MW-14 and MW-15.
- On July 5 and 6, 2011, Antea Group directed the installation of four soil borings at the Property using a sonic drill rig. The borings were drilled to depths of 35 feet to 40 feet bgs with two completed as groundwater monitoring wells (MW-16 and MW-17) and two completed as air sparge wells (AS-1 and AS-2). Due to the high temperatures inherent with sonic drilling and loss of volatile compounds, soil samples were not collected for quantitative chemical analysis from these four borings.
- Antea Group conducted remediation pilot testing at the Property in January 2011, June 2012, and February 2013. Pilot testing activities included air sparge, soil vapor extraction, water injection testing, and bail down testing. The results of the pilot tests indicated that additional remedial alternatives need to be considered to determine the best remedial approach for the Site.

Appendix C

Historical Soil and Groundwater Analytical Data Tables

Table 3: Summary of Analytical Test Results- Groundwater
 BP Service Station No. 11255
 19924 Pacific Hwy South
 SeaTac, Washington
 RZA Job No.7475

Collected 5 March 1991

Sample	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	Lead
MW-1	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND
MW-4	3200	7890	10,700	62.0	5370	24.0
MW-5	ND	ND	ND	ND	ND	ND
MTCA						
Cleanup Criteria	1000	5.0	40.0	30.0	20.0	5.0

Notes

Test results are presented in parts per billion

ND = Non-detectable

NT = Not tested

MTCA = Model Toxics Control Act

- above MTCA method A cleanup criteria

Source: RZA, March, 1992

TABLE 1**Summary of Analytical Test Results: Soil Samples****BP Service Station No. 11255****19924 Pacific Hwy South****SeaTac, Washington****RZA Job No. 7475**

Sample	Halogenated Volatiles	TPH	B	T	E	X	Lead
B-1,S-5	NT	ND	ND	ND	ND	ND	6.0
B-2,S-11	NT	ND	ND	ND	ND	ND	ND
B-3,S-4	ND	ND	ND	ND	ND	ND	ND
B-4,S-5	NT	ND	ND	0.06	ND	0.22	12.9
B-5,S-5	NT	ND	ND	ND	ND	ND	6.7
MTCA		100	0.5	40.0	20.0	20.0	250

Notes:

Test results are presented in parts per million

TPH by 8015 modified for gasoline

BTX = Benzene, Toluene, Ethylbenzene, Xylene

ND = Not Detected

NT = Not Tested

MTCA = Model Toxics Control Act

Source: RZA, March 1992

TABLE 2:

Summary of Analytical Results: Soil Samples

BP Facility No. 11255

19924 Pacific Hwy South

SeaTac, Washington

RZA AGRA Project No. W-7475-2

Boring No.	Sample #	Sample Depth(ft)	TPH	B	T	E	X	Lead
B-6	B-6,S-5	23.5	12.00	0.09	0.09	<0.05	0.11	3.40
	B-11,S-2	27.5	370.00	0.13	2.60	2.10	12.00	3.60
	B-6,S-6	27.5	170.00	0.24	1.30	0.53	3.40	3.40
B-7	B-7,S-6	27.5	5.60	0.09	<0.05	<0.05	<0.05	3.20
	B-7,S-8	36.5	230.00	0.10	0.80	0.57	3.80	3.50
B-8	B-8,S-6	27.5	1300.00	2.50	25.00	10.00	43.00	5.00
	B-8,S-10	47.5	6.70	0.08	<0.05	<0.05	<0.05	4.40
B-4	B-4, S-105	45.0	N D	N D.	N D	N D	N.D.	N T.
MTCA Method A Cleanup Level			100	0.5	40	20	20	250

Notes:

Test results are presented in parts per million (ppm)

TPH by Ecology Method WTPH-G for gasoline

BTEX = Benzene, Toluene, Ethylbenzene, Xylene, by EPA Method 8020

Total Lead by EPA Method 7420

ND = Not Detected

N T = Not Tested

MTCA = Model Toxics Control Act Method A Cleanup Criteria

= concentrations above MTCA Method A Cleanup Criteria

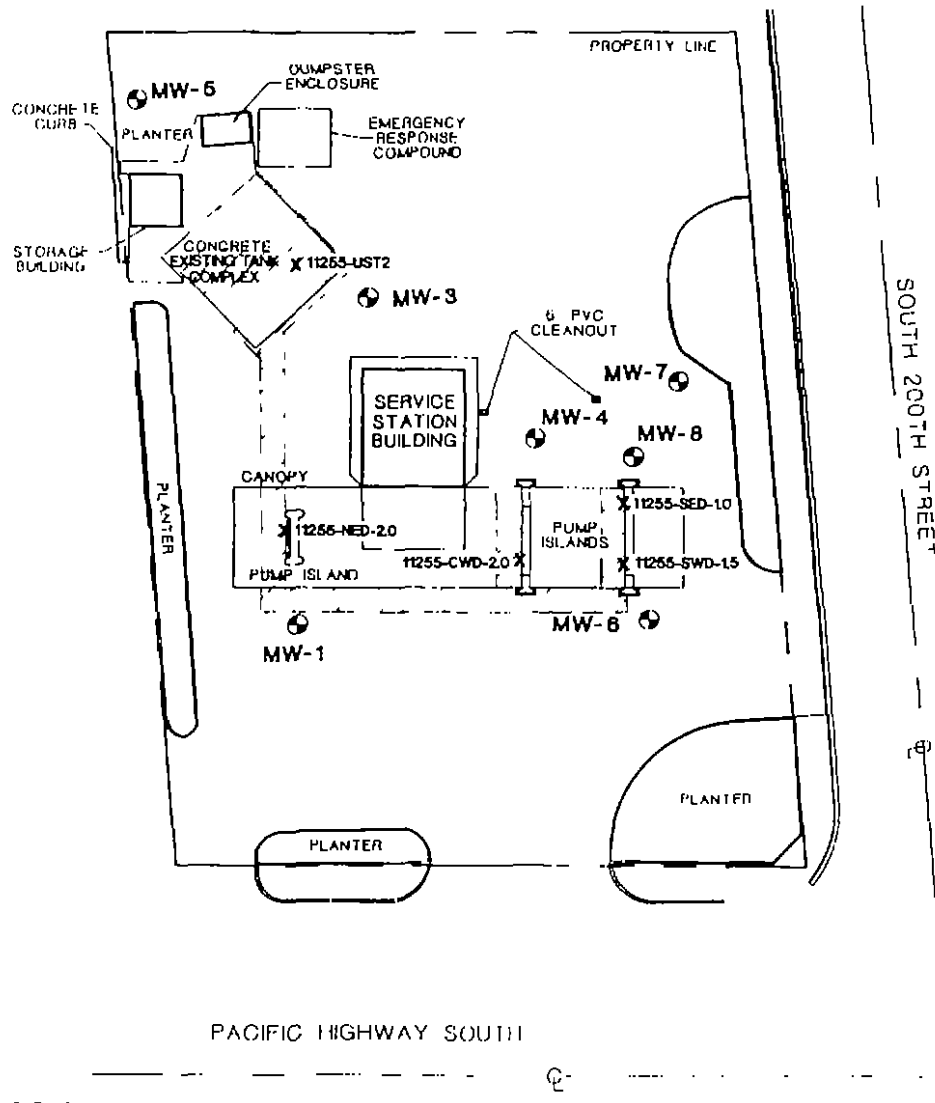
Source: RZA, June 1993

Table D-1

Tosco Station #11255
19924 Pacific Highway South, Seattle, Washington

Soil Sample Results of Analyses (ppm)

Sample Number	Depth (feet)	Date Collected	Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/8020			
			TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethylbenzene	Total Xylenes
11255-NED-2 0	2	04/13/94	2,300	2,820	75	0 14	0 4	nd	0 3
11255-CWD-2 0	2	04/13/94	14,000	1,880	80	nd	87	40	980
11255-SED-1 0	1	04/13/94	31	82	160	nd	0 2	nd	5 2
11255-SWD-1 5	1 5	04/13/94	327	108	110	0 25	3 4	2 2	16 8
11255-UST2	—	04/13/94	18,000	1,480	nd	240	1,200	280	1,600
11255-SSA1	—	04/13/94	22	104	26	nd	nd	nd	nd
11255-SSA2	—	04/13/94	4	8	28	nd	nd	nd	nd
11255-SSD1	—	04/13/94	nd	41	180	0 028	0 062	nd	nd
11255-SSD2	—	04/13/94	6	30	95	nd	nd	nd	nd
11255-SSD3	—	04/13/94	300	41	63	0 039	0 072	1 6	14
NOTE TPH-G = Total petroleum hydrocarbons as gasoline TPH-D = Total petroleum hydrocarbons as diesel TPH-O = Total petroleum hydrocarbons as oil nd = Not detected at or above method reporting limit									



LEGEND

MW-8



MONITORING WELL NUMBER AND LOCATION

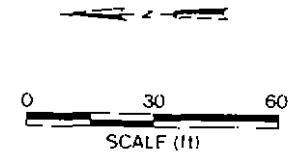
11255-SED-10



TOSCO SOIL SAMPLE LOCATION



APPROXIMATE LIMIT OF EXCAVATION



SOURCE RZA AGRA INC
Engineering & Environmental Services

DATE 3/94
OWN M.P.
APPD
REVIS
PROJECT NO.
0328 12203

Figure D-1
TOSCO #11255
19921 PACIFIC HIGHWAY SOUTH
SEATTLE WASHINGTON
SITE PLAN SHOWING STAGE II LIMIT OF EXCAVATION

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

ConocoPhillips Facility No. 2611255
19964 Pacific Highway South
Seatac, Washington

Sample ID	Sample Date	Depth BGS (feet)	Analysis								
			Gasoline Range (mg/kg)	Diesel Range (mg/kg)	Heavy Range (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)
MW-9-20	06/18/10	20	<6.3	NA	NA	<0.0026	<0.0026	<0.0026	<0.0079	--	1.1
MW-9-25	06/18/10	25	<7.3	NA	NA	<0.0030	<0.0030	<0.0030	<0.0090	--	1.3
MW-9-30	06/18/10	30	<6.9	NA	NA	0.0367	<0.0029	0.0287	<0.0088	--	1.3
MW-9-33	06/18/10	33	<6.5	NA	NA	0.0908	0.0407	0.0648	0.138	--	1.4
MW-9-36	06/18/10	36	<5.2	NA	NA	0.0217	0.0133	0.0169	0.0241	--	NS
MW-10-10	06/18/10	10	1,180	NA	NA	<0.0024	<0.0024	<0.0024	<0.0071	--	1.6
MW-10-15	06/18/10	15	NS	NA	NA	NS	NS	NS	NS	--	<1.1
MW-10-20	06/18/10	20	<8.4	NA	NA	<0.0028	<0.0028	<0.0028	<0.0085	--	<1.1
MW-10-25	06/17/10	25	<5.3	NA	NA	<0.0032	<0.0032	<0.0032	<0.0096	--	1.7
MW-10-30	06/18/10	30	2,800	NA	NA	<0.0031	<0.0031	15.1	71.5	--	1.4
MW-11-20	06/17/10	20	<6.4	NA	NA	<0.0025	<0.0025	<0.0025	<0.0075	--	1.2
MW-11-25	06/17/10	25	<6.6	NA	NA	<0.0030	<0.0030	<0.0030	<0.0091	--	1.3
MW-11-30	06/17/10	30	<7.1	NA	NA	<0.0029	<0.0029	<0.0029	<0.0087	--	1.3
MW-11-32	06/17/10	32	<5.5	NA	NA	<0.0025	<0.0025	<0.0025	<0.0076	--	3.1
MW-12-20	06/17/10	20	<5.3	NA	NA	<0.0024	<0.0024	<0.0024	<0.0071	--	1.1
MW-12-25	06/17/10	25	<8.2	NA	NA	<0.0030	<0.0030	<0.0030	<0.0090	--	1.4
MW-12-30	06/17/10	30	<6.3	NA	NA	<0.0031	<0.0031	<0.0031	<0.0093	--	1.4
MW-13-20	06/17/10	20	<4.6	NA	NA	<0.0025	<0.0025	<0.0025	<0.0075	--	1.3
MW-13-25	06/17/10	25	<5.6	NA	NA	<0.0027	<0.0027	<0.0027	<0.0080	--	1.9
MW-13-30	06/17/10	30	<5.6	NA	NA	<0.0030	<0.0030	<0.0030	<0.0090	--	1.0
MW-13-35	06/17/10	35	<5.5	NA	NA	<0.0024	<0.0024	<0.0024	<0.0071	--	1.5
MW-14-5	06/26/11	5	<5.1	<17.5	<70.2	<0.0026	<0.0026	<0.0026	<0.0078	<0.0026	2.6
MW-14-10	06/26/11	10	<4.8	<16.1	<64.4	<0.0028	<0.0028	<0.0028	<0.0083	<0.0028	1.7
MW-14-15	06/26/11	15	<5.1	<16.3	<65.1	<0.0027	<0.0027	<0.0027	<0.0082	<0.0027	1.3
MW-14-20	06/26/11	20	<4.7	<16.8	<67.2	<0.0025	<0.0025	<0.0025	<0.0074	<0.0025	1.2
MW-14-25	06/26/11	25	<4.8	<17.6	<70.5	<0.0025	<0.0025	<0.0025	<0.0075	<0.0025	1.3
MW-15-5	06/26/11	5	<5.4	<16.6	<66.4	<0.0027	<0.0027	<0.0027	<0.0081	<0.0027	2.0
MW-15-10	06/26/11	10	<4.9	<16.4	<65.7	<0.0028	<0.0028	<0.0028	<0.0084	<0.0028	1.5
MW-15-15	06/26/11	15	<4.9	<16.3	<65.2	<0.0028	<0.0028	<0.0028	<0.0084	<0.0028	1.6
MW-15-20	06/26/11	20	<4.7	<17.4	<69.6	<0.0024	<0.0024	<0.0024	<0.0072	<0.0024	1.5
MW-15-25	06/26/11	25	<5.1	<17.9	<71.6	<0.0029	<0.0029	<0.0029	<0.0086	<0.0029	1.6
MTCA Method A Cleanup Lev			100/30^a	2,000	2,000	0.03	7	6	9	0.1	250

NOTES:

All concentrations are in milligrams per kilogram (mg/kg).

< = Less than the stated laboratory reporting limit.

NA = Not analyzed

Gasoline range = Gasoline range hydrocarbons by Ecology Method NWTPH-Gx

Diesel and Heavy range hydrocarbons, respectively, by Ecology Method NWTPH-Dx with Acid Silica Gel Cleanup

BTEX = Aromatic compounds by EPA Method 8260B

EDB = 1,2 Dibromoethane by EPA Method 8260B

EDC = 1,2 Dichloroethane by EPA Method 8260B

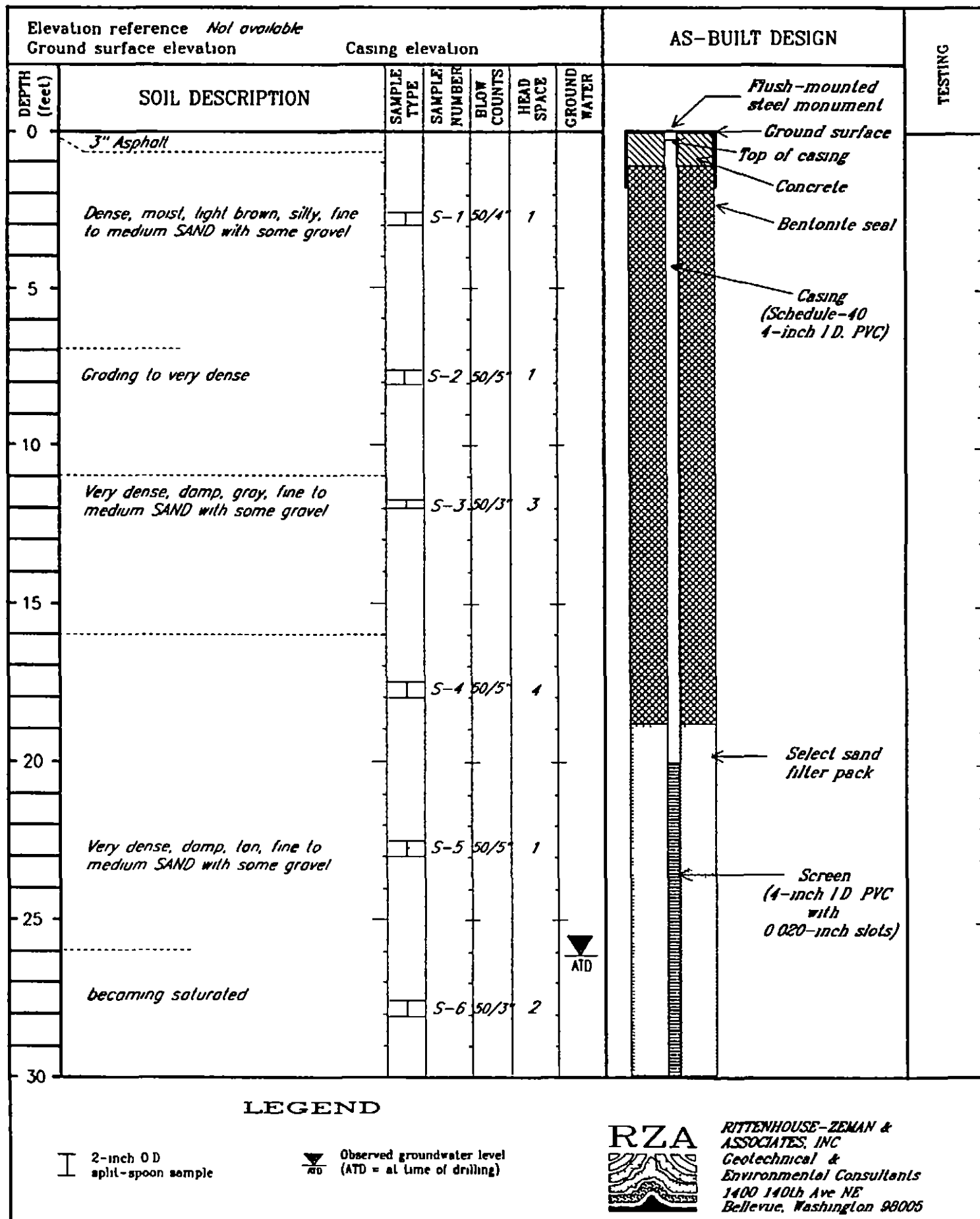
MTBE = Methyl tertiary-butyl ether by EPA Method 8260B

Total and dissolved lead by EPA Method 6020


^a MTCA Method A Cleanup levels for TPH-g are 100 mg/kg when no Benzene is present and 30 mg/kg when Benzene is present.

Appendix D


Soil Borings/Well Logs




PROJECT *BP Seatac*W.O. *W-7475*WELL NO. *MW-1*

Elevation reference <i>Not available</i> Ground surface elevation		Casing elevation					AS-BUILT DESIGN	TESTING
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	HEAD SPACE	GROUND WATER		
0	<i>Very dense, wet to saturated, gravelly SAND with some silt</i>		<i>5-750, 41</i>		<i>1</i>		 <p><i>Select sand filter pack</i></p> <p><i>Screen (4-inch ID PVC with 0.020-inch slots)</i></p> <p><i>Threaded end cap</i></p>	
5								
10								
15								
35								
40	<i>Boring terminated at 40 feet</i>							
45								
50								
55								
60								

LEGEND

 2-inch OD
split-spoon sample

 Observed groundwater level
(ATD = at time of drilling)



RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington, 98005


Drilling started *8 April 1991*Drilling completed *8 April 1991*Logged by *JTC*


PROJECT *BP Seatac*W O. *W-7475*WELL NO. *B-2*

Elevation reference		Casing elevation						AS-BUILT DESIGN		TESTING
Ground surface elevation										
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	HEAD SPACE	GROUND WATER	No Well Installed			
0	3" Asphalt									
	Crushed rock and pea gravel									
	Medium dense, moist, brown SAND with some gravel									
5			S-8	13	1					
			S-9	10	2					
10	Pea Gravel									
			S-10	50/3	1					
15	Very dense, moist to wet, gray, silty, fine to medium SAND with some gravel									
			S-11	50/2	2					
20										
	Very dense, damp, tan, silty, fine to medium SAND with some gravel		S-12	50/3	2					
25										
			S-13	50/5	1	▼ ATD				
	becoming saturated									
30										

LEGEND

 2-inch OD split-spoon sample


 Observed groundwater level (ATD = at time of drilling)




RZA

RITTENHOUSE-ZEMAN & ASSOCIATES INC
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

LEGEND

 2-inch OD
split-spoon sample

 Observed groundwater level
(ATD = at time of drilling)


**RITTENHOUSE-ZEMAN &
ASSOCIATES INC**
Geotechnical &
Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started 9 April 1991


Drilling completed 9 April 1991

Logged by JTC

PROJECT *BP Seatac*W O *W-7475*WELL NO. *B-2*

Elevation reference Ground surface elevation							AS-BUILT DESIGN		TESTING
Casing elevation									
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	HEAD SPACE	GROUND WATER	No Well Installed		
30									
	Stiff, moist, yellowish tan SILT.								
	Very dense, saturated, gray gravel		5-14	50/3	0				
35	Boring terminated at 35 feet								
40									
45									
50									
55									
60									

LEGEND

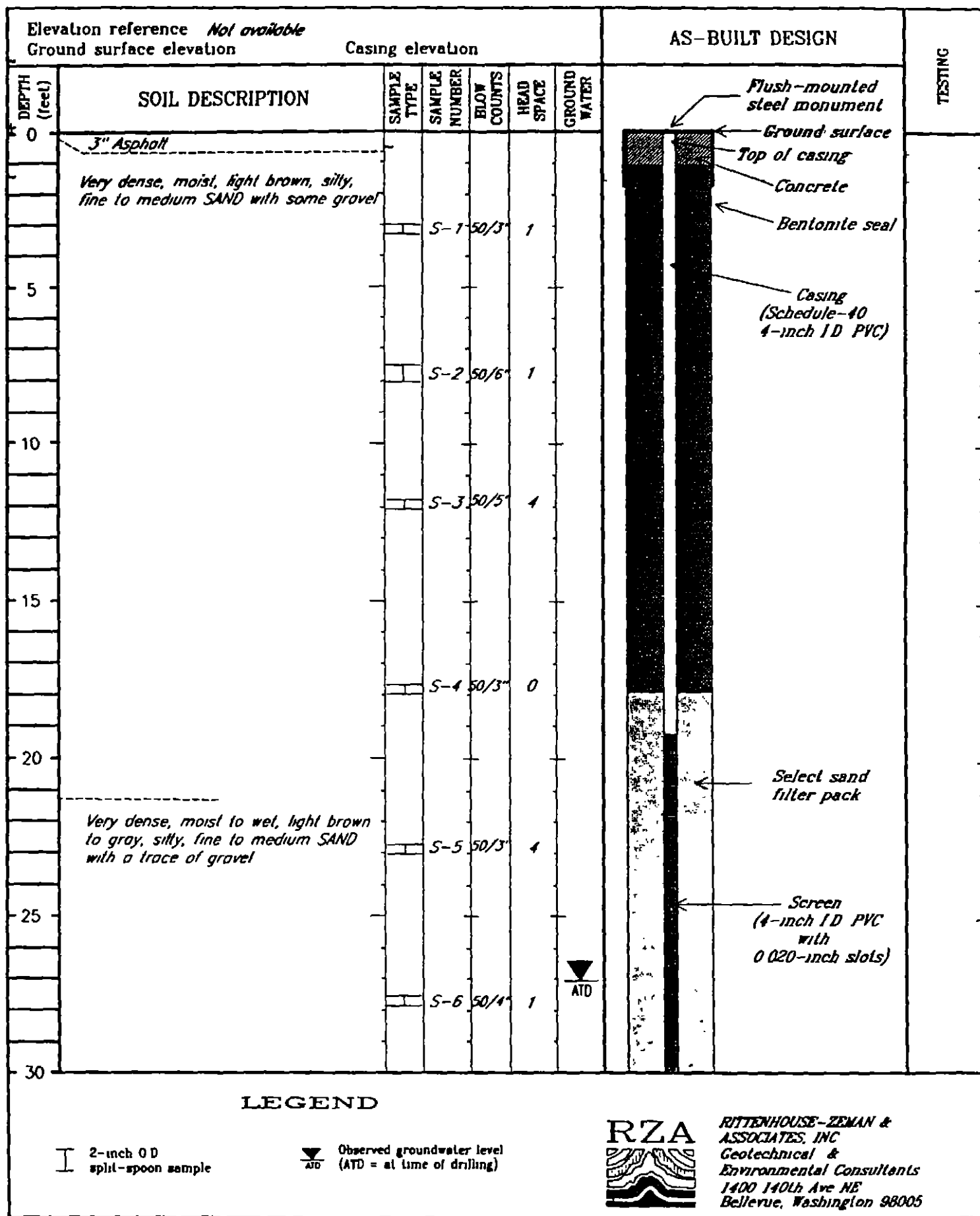
 2-inch OD
split-spoon sample Observed groundwater level
(ATD = at time of drilling)

RITTENHOUSE-ZEMAN &
ASSOCIATES, INC
Geotechnical &
Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started 9 April 1991

Drilling completed 9 April 1991

Logged by JTC

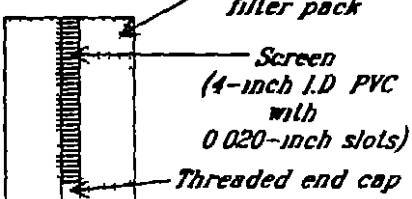

PROJECT *BP Seatac*W.O. *W-7475*WELL NO. *MW-3*

Drilling started 10 April 1991



Drilling completed 10 April 1991

Logged by JTC

PROJECT *BP Seatac*W.O. *W-7475*WELL NO. *MW-3*

Elevation reference Ground surface elevation Casing elevation.							AS-BUILT DESIGN		TESTING
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	HEAD SPACE	GROUND WATER			
30									
	Very dense, wet to saturated, light brown to gray, fine to medium SAND with some gravel		5-7	50/6	1				
35	Boring terminated at 34 feet								
40									
45									
50									
55									
60									

LEGEND

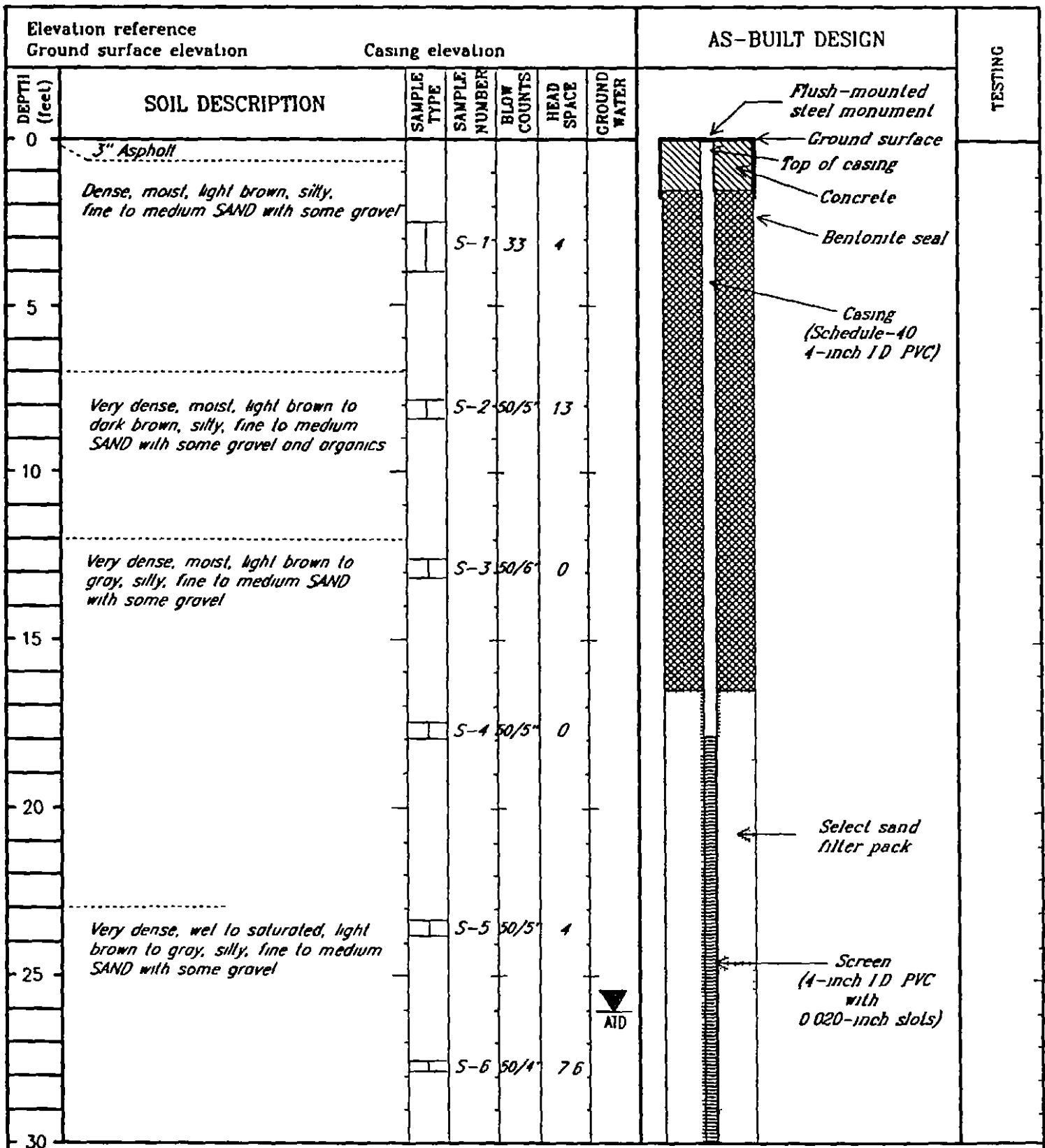
 2-inch O D
split-spoon sample Observed groundwater level
(ATD = at time of drilling)

**RITTENHOUSE-ZEMAN &
ASSOCIATES, INC**
Geotechnical &
Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started 10 April 1991

Drilling completed 10 April 1991

Logged by JTC

PROJECT *BP Seatac*W.O. *W-7475*WELL NO *MW-4*

LEGEND

2-inch OD split-spoon sample

Observed groundwater level (ATD = at time of drilling)



RITTENHOUSE-ZEMAN & ASSOCIATES, INC
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue Washington 98005

Drilling started 10 April 1991

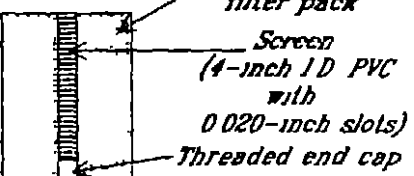
Drilling completed 10 April 1991

Logged by JTC


PROJECT *BP Sealac*


W O. W-7475


WELL NO *MW-4*

Elevation reference Ground surface elevation							AS-BUILT DESIGN		TESTING
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	HEAD SPACE	GROUND WATER			
30									
			S-7	50/6	0				
	<i>Boring terminated at 33.5 feet</i>								
35									
40									
45									
50									
55									
60									

LEGEND

 2-inch OD split- spoon sample

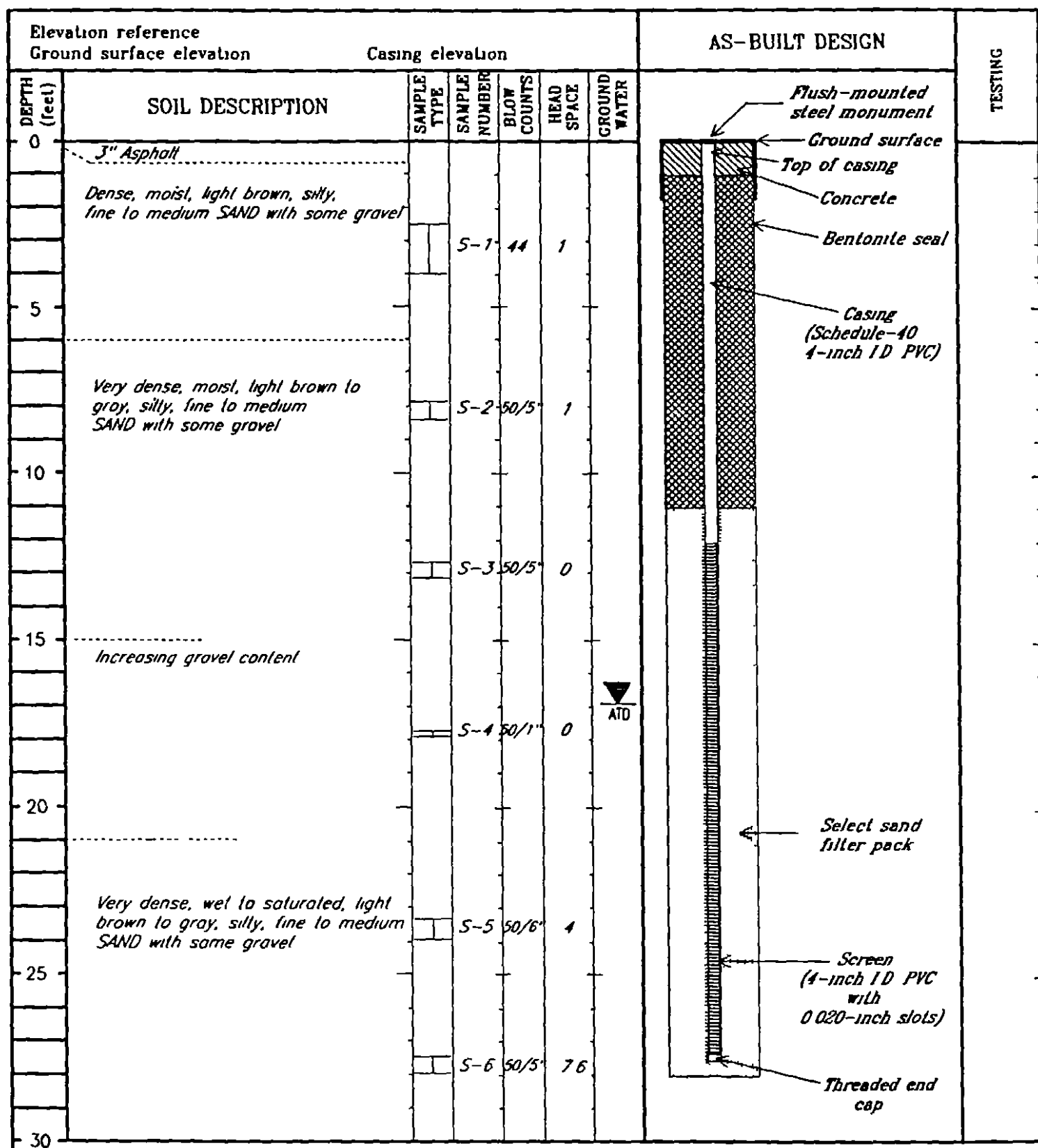
 Observed groundwater level (ATD = at time of drilling)

RZA

RITTENHOUSE-ZEMAN & ASSOCIATES, INC
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started 10 April 1991

Drilling completed 10 April 1991

Logged by JTC

PROJECT *BP Seatac*W.O. *W-7475*WELL NO. *MW-5*

LEGEND

 2-inch OD
split-spoon sample

 Observed groundwater level
(ATD = at time of drilling)


RITTENHOUSE-ZEMAN &
ASSOCIATES, INC.
Geotechnical &
Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started 11 April 1991

Drilling completed 11 April 1991

Logged by JTC

PROJECT *BP Seatac*W.O. *W-7475*WELL NO. *MW-5*

Elevation reference							AS-BUILT DESIGN	TESTING
Ground surface elevation			Casing elevation					
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	HEAD SPACE	GROUND WATER		
30	<i>Grading to saturated</i>							
			5-7	50/1'	1			
	<i>Boring terminated at 33 feet</i>							
35								
40								
45								
50								
55								
60								

LEGEND

2-inch O.D.
split-spoon sampleObserved groundwater level
(ATD = at time of drilling)**RITTENHOUSE-ZEMAN &
ASSOCIATES, INC**
Geotechnical &
Environmental Consultants
1400 140th Ave NE
Bellevue Washington 98005

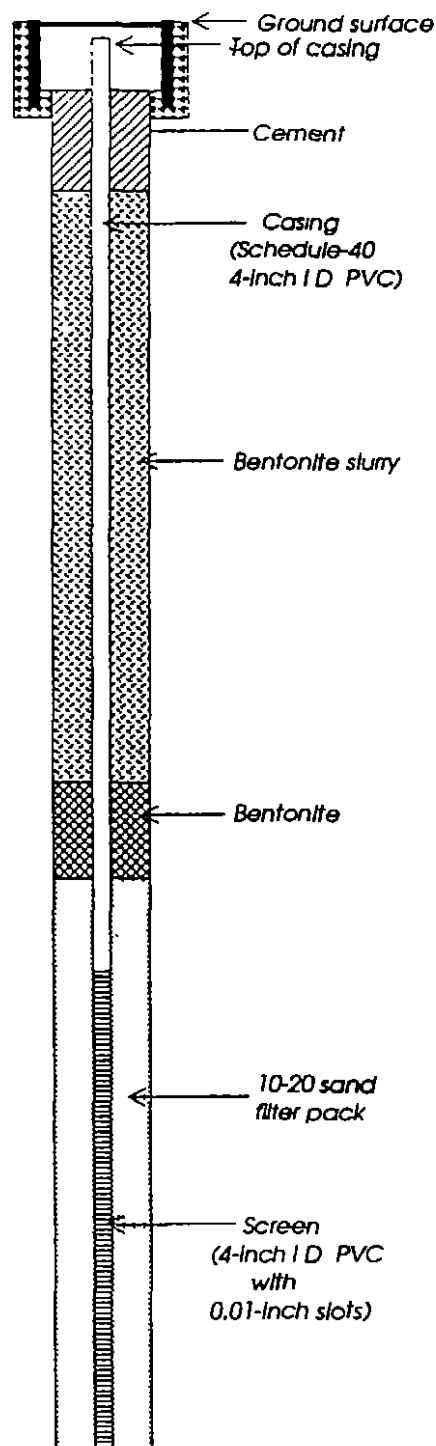
Drilling started 11 April 1991

Drilling completed 11 April 1991

Logged by JTC

PROJECT: BP SeaTac Facility #11255 W.O.W-7475-2 WELL NO. MW-4

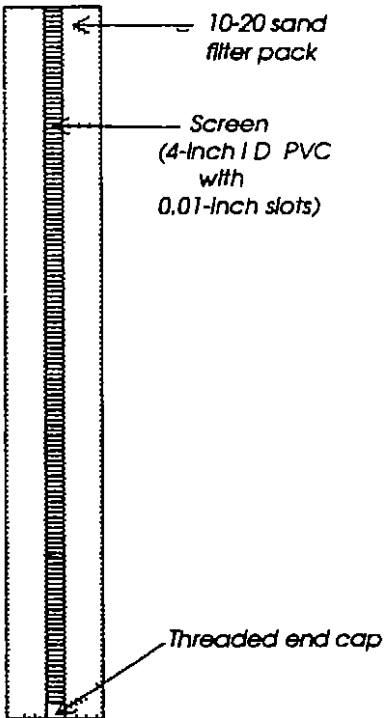
Elevation reference 100.00 (arbitrary)		Well completed 11 February 1992		AS-BUILT DESIGN			Page 1 of 2
Ground surface elevation 99.36		Casing elevation 98.28					
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	TESTING
0	Concrete vault interior (void)						
	Crushed rock						
5	Grayish brown, moist, bentonite "MUD", with some sand and silt present (from previous boring wall)						
10							
15							
20	Encountered sand pack from previous boring. (Drilled 10 April 1991)						
25							
30							



LEGEND

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

Elevation reference 100.00 (arbitrary) Ground surface elevation 99.36		Well completed 11 February 1992 Casing elevation 98.28		AS-BUILT DESIGN			Page 2 of 2
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	TESTING
30	Very dense, damp to moist, brown, silty medium to coarse SAND, with some gravel						
35		I	S-101	50/ 5"	18		<div>8020 8015MOD</div>
		I	S-102	50/ 5"	63		
40		I	S-103	50/ 5"	82		
		X	S-104	50/ 4"			
45	Bottom of boring at 45.4 feet. Groundwater was not encountered at time of drilling.	I	S-105	50/ 5"	0		
50							
55							
60							

LEGEND

- I 2-inch O D split-spoon sample
- X Sample not recovered
- ▼ Observed groundwater level
- ATD = at time of drilling

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

Elevation reference: 100.00 (arbitrary)		Well completed: 8 January 1992		AS-BUILT DESIGN			Page 1 of 2
Ground surface elevation 99.67		Casing elevation 98.77					TESTING
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	
0	3" of Asphalt						
5	Loose, damp, light to dark brown fine to medium SAND, some organics, some silt, some gravel		S-1	7	<1		
10	Very dense, damp, dark to light brown, fine to medium SAND, some gravel.		S-2	57	0		
15	Very dense, damp, brown to gray, silty, fine to medium SAND, some gravel		S-3	50/6"	2		
20			S-4	50/6"	28		
25	SANDY (LENS) Very dense, moist, gray to brown, silty, fine to medium SAND. Strong petroleum hydrocarbon odor, in ambient air surrounding soil cuttings		S-5	50/6"	932		8015 MOD 8020 7421
30	Dense, wet, brown, silty, fine to medium SAND; trace gravel. Strong petroleum hydrocarbon odor, in ambient air surrounding soil cuttings		S-6	40	959	ATD	8015 MOD 8020 7421

LEGEND

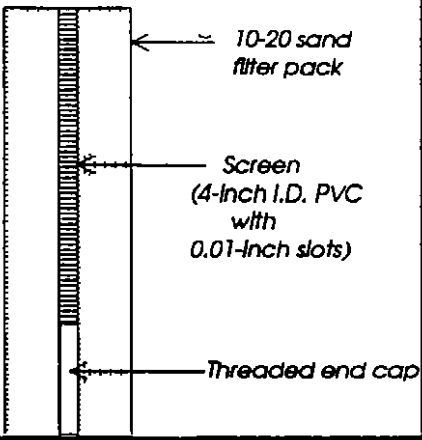
2-inch O.D.
split-spoon sample




Observed groundwater level
(ATD = at time of drilling
01/00/00 = date observed)


RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

Elevation reference 100.00 (arbitrary) Ground surface elevation 99.67		Well completed 8 January 1992 Casing elevation 98.77		AS-BUILT DESIGN		Page 2 of 2	
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	TESTING
30	Very dense, wet, brown to gray, fine to coarse SAND, some silt	S-7	50/ 4"	116	1/31/92		
35							
	Very dense, saturated, brown, silty fine to coarse SAND, some gravel.	S-8	50/ 5"	67			
40	Bottom of boring at 39 feet.						
45							
50							
55							
60							

LEGEND

 2-inch O.D.
split-spoon sample

 Observed groundwater level
(0/00/00 = date observed)

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

Drilling started.

08 January 1992

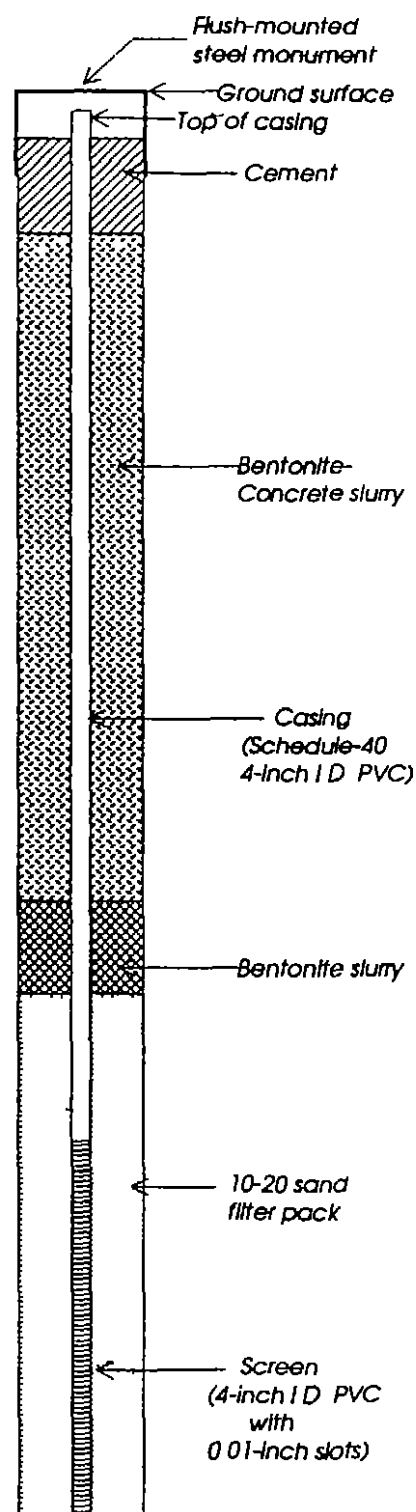
Drilling completed.

08 January 1992

Logged by

BDE

Elevation reference 100.00 (arbitrary)		Well completed 9 January 1992		AS-BUILT DESIGN			Page 1 of 2
Ground surface elevation 98.75		Casing elevation 98.42					TESTING
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	
0	3' of Asphalt						
5	Loose, damp, brown, silty, fine to medium SAND, some gravel.		S-1	8	0		
10	Dense, damp, brown to gray, silty, fine to medium SAND; trace gravel.		S-2	47	0		
15	Very dense, damp, gray, silty, fine to medium SAND, some gravel.		S-3	50/ 6"	0		
20	Very dense, moist, light brown to gray, silty, fine to medium SAND, trace gravel.		S-4	50/ 5 75"	32		
25	Very dense, moist, brown, silty, fine to medium SAND, trace gravel.		S-5	50/ 5 5"	159		
30	Very dense, moist, brown, silty, fine to medium SAND		S-6	50/ 5 5"	56		
						ATD 1/31/92	



8015 MOD
8020
17421

LEGEND

I 2-inch O.D.
split-spoon sample

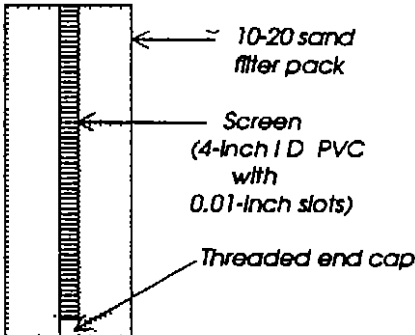


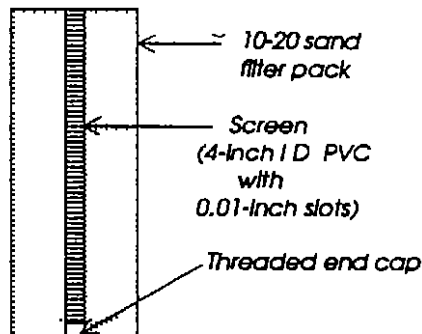
Observed groundwater level
(ATD = at time of drilling
0/00/00 = date observed)

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

PROJECT: *BP SeaTac Facility #11255* W.O.W-7475-2 WELL NO. *MW-7*

Elevation reference 100.00 (arbitrary)		Well completed 9 January 1992		AS-BUILT DESIGN		Page 2 of 2	
Ground surface elevation 98.75		Casing elevation 98.42					
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	TESTING
30	Very dense, moist to wet, brown, silty, fine to medium SAND, some gravel		S-7	50/2'	85		
35	-----						
	Very dense, moist to wet, brown, silty, fine to medium SAND		S-8	100/4'	83		
<div></div>							
Bottom of boring at 37 feet.							
40							
45							
50							
55							
60							



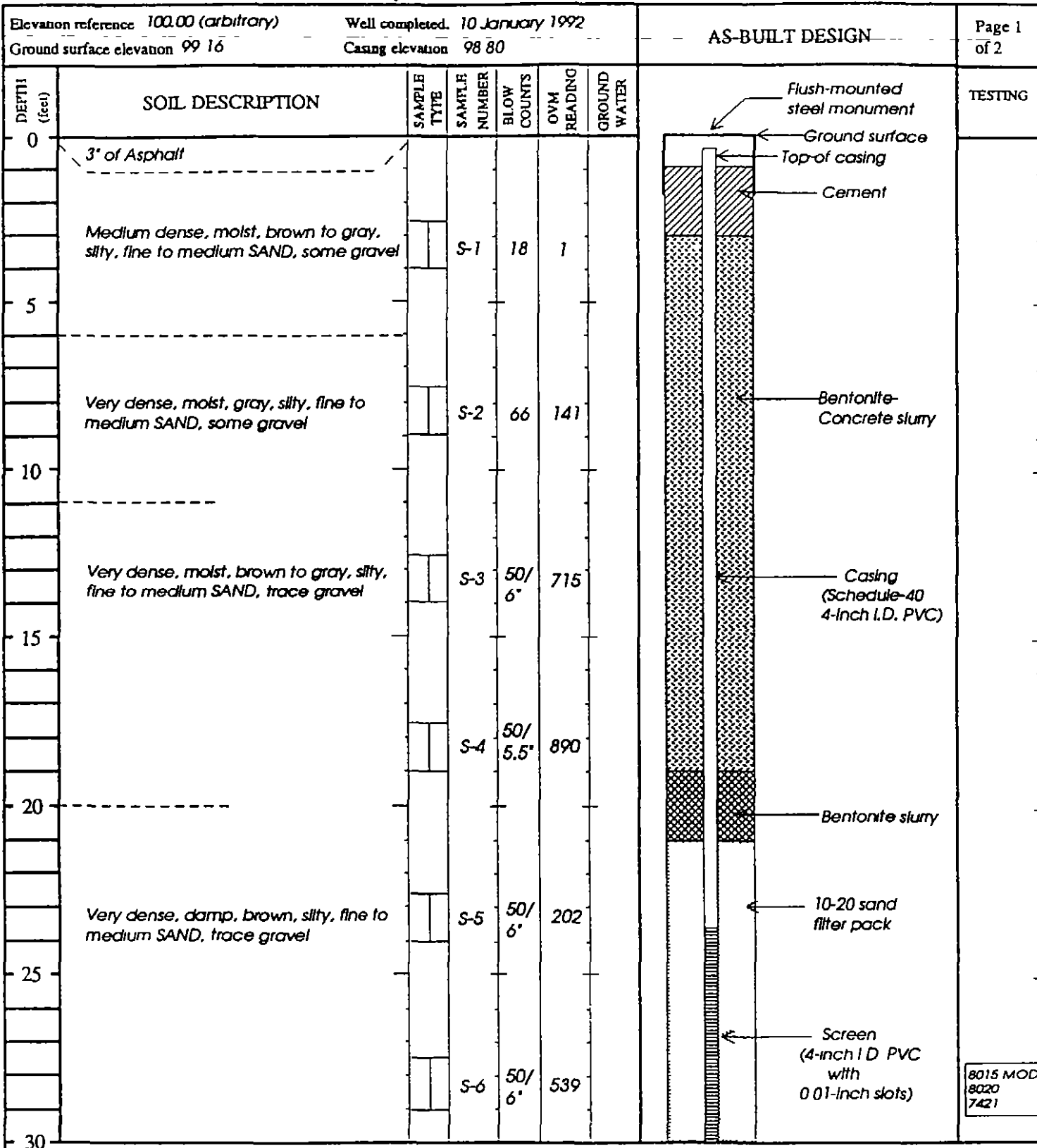
18015 MOD
8020
7421

LEGEND

I 2-Inch O.D.
split-spoon sample

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918



8015 MOD.
8020
7421

LEGEND

I 2-inch O.D.
split-spoon sample

RZA AGRA, Inc.
Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

Elevation reference 100.00 (arbitrary)

Well completed 10 January 1992

AS-BUILT DESIGN

Page 2
of 2

Ground surface elevation 99.16

Casing elevation 98.80

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	TESTING
30							
	Very dense, moist, gray to brown, silty fine to medium SAND, some gravel		S-7	50/ 4"	630		
35							
	Very dense, moist, brown, silty, fine to medium SAND, some gravel.		S-8	50/ 2"	28		
40							
		X	S-9	50/ 4"	205		
45							
	Very dense, moist to wet, brown, silty, gravelly, medium to coarse SAND.		S-10	105/ 6"	42		
50							
	Bottom of boring at 49.5 feet. Groundwater was not encountered at time of drilling						
55							
60							

10-20 sand
filter packScreen
(4-inch I.D. PVC
with
0.01-inch slots)

Threaded end cap

8015 MOD
8020
7421

LEGEND

 2-inch O.D.
split spoon sample

 Sample not recovered

RZA AGRA, Inc.
Geotechnical & Environmental Group
11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918

Drilling started

10 January 1992

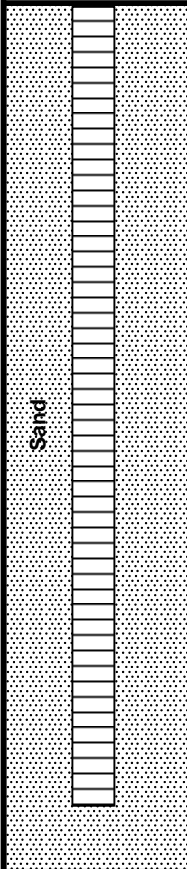
Drilling completed

10 January 1992

Logged by

BDE

WELL/BORING LOCATION MAP						Delta Consultants					WELL/BORING: MW-9				
						INSTALLATION DATE: 6/18/2010					DRILLING METHOD: Hollow Stem Auger				
						PROJECT: I42611255					SAMPLING METHOD: DM Split Spoon				
						CLIENT: COP-ELT					BORING DIAMETER: 8.25 inches				
						LOCATION: 19924 International Blvd.					BORING DEPTH: 36.0 feet				
						CITY: SeaTac					WELL CASING: SCH 40 PVC 2"				
						STATE: WA					WELL SCREEN: 20.0 – 35.0 feet (0.010")				
						DRILLER: Cascade Drilling, Inc.					SAND PACK: 18.0 – 36.0 (2x12)				
WELL/BORING COMPLETION		FIRST	STABILIZED	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	98.99		
		▽	▼									SURVEY DATE:	10/13/10		
												DTW:	28.90 on 9/2/10		
												DESCRIPTION/LOGGED BY: Megan MacDonald			
Concrete												Original Surface = asphalt Air-knifed to 5 feet bgs.			
Grout							1								
							2								
							3								
							4								
							5								
				MST	0.9	50/5"	6			SM		Silty SAND with gravel; brown; 50% sand; 40% silt; 10% small gravel; no staining; moist; no odor.			
							7								
							8								
							9								
				MST	1.4	50/6"	10			SM		Gravely Silty SAND: brown; 50% sand; 35% silt; 15% small gravel; no staining; moist; no odor.			
						11									
						12									
						13									
						14					Driller felt lithology change at 14.5 feet bgs.				
			MST	3.0	50/4"	15			ML		Mostly slough (Silty SAND from up top). Bottom 2" = Sandy SILT: brown; 60% silt; 40% fine sand; no staining; no odor.				
						16									
						17									
Bentonite						18									
Sand						19									
				MST	1.0	50/5"	20			SM		Silty SAND: brown; 80% sand; 20% silt; moist; no staining; no odor; slough?			
							21				Shoe has Sandy SILT: brown; 70% silt; 30% sand; moist: no odor.				
				MST	1.2	50/6"	22			ML					

WELL/BORING LOCATION MAP					Delta Consultants					WELL/BORING: MW-9		
INSTALLATION DATE: 6/18/2010					DRILLING METHOD: Hollow Stem Auger							
PROJECT: I42611255					SAMPLING METHOD: DM Split Spoon							
CLIENT: COP-ELT					BORING DIAMETER: 8.25 inches							
LOCATION: 19924 International Blvd.					BORING DEPTH: 36.0 feet							
CITY: SeaTac					WELL CASING: SCH 40 PVC 2"							
STATE: WA					WELL SCREEN: 20.0 – 35.0 feet (0.010")							
DRILLER: Cascade Drilling, Inc.					SAND PACK: 18.0 – 36.0 (2x12)							
WELL/BORING COMPLETION	FIRST	STABILIZED	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	98.99
	▽	▼									SURVEY DATE:	10/13/10
											DTW:	28.90 on 9/2/10
	DESCRIPTION/LOGGED BY: Megan MacDonald											
	▽		MST	1.1	50/5"	23			ML		Gravelly Sandy <u>SILT</u> : brown; 50% silt; 35% sand; 15% gravel; moist; no odor.	
			MST	2.0	50/6"	24			ML		Sandy <u>SILT</u> : brown; 70% silt; 30% fine to medium sand; moist; no odor.	
						25					Contact at 25 feet	
						26					Silty <u>SAND</u> : brown; 80% sand; 20% silt; no staining; moist; no odor.	
						27						
						28						
						29						
			WET	9.5	50/6"	30			SM		Silty <u>SAND</u> : gray; 80% sand; 20% silt; wet; odor.	
						31						
						32						
						33						
			MST	6.5	50/6'	34			ML		Slough on top (Silty <u>SAND</u>); bottom 6 inches = Sandy <u>SILT</u>	
			MST	1.6	50/6'	35			ML		Same as Above: wet silty sand slough with 6" of Sandy Silt at bottom.	
						36						
						37						
						38						
						39						
						40						
						41						
						42						
						43						
						44						

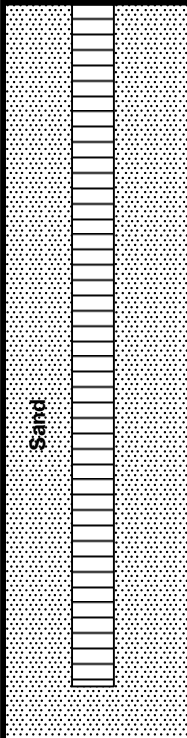

WELL/BORING LOCATION MAP						Delta Consultants					WELL/BORING: MW-10				
						INSTALLATION DATE: 6/18/2010					DRILLING METHOD: Hollow Stem Auger				
						PROJECT: I42611255					SAMPLING METHOD: DM Split Spoon				
						CLIENT: COP-ELT					BORING DIAMETER: 8.25 inches				
						LOCATION: 19924 International Blvd.					BORING DEPTH: 36.5 feet				
						CITY: SeaTac					WELL CASING: SCH 40 PVC 2"				
						STATE: WA					WELL SCREEN: 20.0 – 35.0 feet (0.010")				
						DRILLER: Cascade Drilling, Inc.					SAND PACK: 18.0 – 36.5 (2x12)				
WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	98.51			
											SURVEY DATE:	10/13/10			
											DTW:	28.23 on 9/2/10			
											DESCRIPTION/LOGGED BY: Megan MacDonald				
Concrete															
Grout						1									
						2									
						3									
						4									
						5									
				MST	8.7	27 50/6"	6			ML		Gravelly Sandy <u>SILT</u> : brown; 50% silt; 35% fine to medium sand; 15% small rounded gravel; moist; no staining; no odor.			
						7									
						8									
						9									
				MST	357.7	50/6"	10			SM		Gravelly Silty <u>SAND</u> : 60% fine to medium sand; 25% silt; 15% gravel; gray staining; moist; odor.			
						11									
						12									
						13									
						14									
				MST	17.6	50/6"	15			ML		Gravelly Sandy <u>SILT</u> : brown; 50% silt; 35% sand; 15% small gravel; no staining; odor.			
						16				SM		Gravelly Silty <u>SAND</u> : brown; 70% fine to medium sand; 15% silt; 15% small gravel; moist; no staining; no odor.			
						17									
	Bentonite					18									
	Sand					19									
						20				SM		Silty <u>SAND</u> : brown; 65% silt; 35% fine sand; dry; no staining no odor.			
					DMP	8.7	50/5"	21							
					DMP	4.7	50/6"	22			SM		Gravelly Sandy <u>SILT</u> : 60% silt; 25% sand; 15% gravel; dry; no staining; no odor.		

WELL/BORING LOCATION MAP						Delta Consultants				WELL/BORING: MW-10	
INSTALLATION DATE: 6/18/2010						DRILLING METHOD: Hollow Stem Auger					
PROJECT: I42611255						SAMPLING METHOD: DM Split Spoon					
CLIENT: COP-ELT						BORING DIAMETER: 8.25 inches					
LOCATION: 19924 International Blvd.						BORING DEPTH: 36.5 feet					
CITY: SeaTac						WELL CASING: SCH 40 PVC 2"					
STATE: WA						WELL SCREEN: 20.0 – 35.0 feet (0.010")					
DRILLER: Cascade Drilling, Inc.						SAND PACK: 18.0 – 36.5 (2x12)					

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	98.51
										SURVEY DATE:	10/13/10
										DTW:	28.23 on 9/2/10
										DESCRIPTION/LOGGED BY: Megan MacDonald	

<div>Sand</div>	▽		DRY			23		ML		Gravelly Sandy <u>SILT</u> : brown; dry; no staining; no odor.
			MST	2.4	50/5"	24		SM		Silty <u>SAND</u> : brown; 80% sand; 20% silt; moist; no staining; no odor.
			MST	4.9	50/5"	25				Same as Above.
						26				
						27				
						28				
						29				
			WET	3,374	50/6"	30		SM		Silty <u>SAND</u> : gray; 80% fine to medium sand; 20% silt; wet; odor.
						31				
						32				
			WET	5,918	50/6"	33		ML		Slough and heaving Sands – No native recovery; Back into Sandy <u>SILT</u> ; but can't retrieve sample.
						34				
			WET	4,437	50/6"	35		ML		Same as Above: no native recovery; slough and heaving Sands.
						36				
						37				
						38				
						39				
						40				
						41				
						42				
						43				
						44				

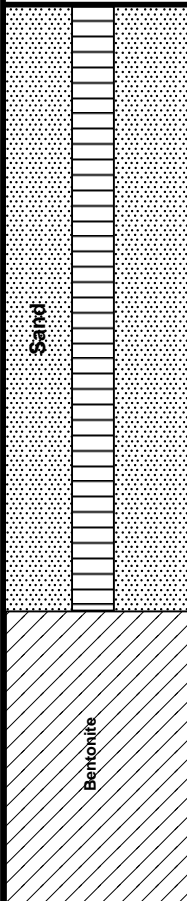



WELL/BORING LOCATION MAP		Delta Consultants										WELL/BORING: MW-11	
		INSTALLATION DATE: 6/17/2010					DRILLING METHOD: Hollow Stem Auger						
		PROJECT: I42611255					SAMPLING METHOD: DM Split Spoon						
		CLIENT: COP-ELT					BORING DIAMETER: 8.25 inches						
		LOCATION: 19924 International Blvd.					BORING DEPTH: 34.0 feet						
		CITY: SeaTac					WELL CASING: SCH 40 PVC 2"						
		STATE: WA					WELL SCREEN: 22.0 – 32.0 feet (0.010")						
		DRILLER: Cascade Drilling, Inc.					SAND PACK: 20.0 – 34.0 (2x12)						
WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	98.11	
											SURVEY DATE:	10/13/10	
											DTW:	27.12 on 9/2/10	
DESCRIPTION/LOGGED BY: Megan MacDonald													
Concrete						1						Original Surface = asphalt	
Grout						2							
						3							
						4							
						5							
				MST	0.6	50/6"	6			ML		Gravelly Sandy <u>SILT</u> : brown; 50% silt; 30% sand; 20% small angular gravel; no staining; no odor.	
						7							
						8							
						9							
				MST	0.2	50/6"	10			ML		Same as Above.	
						11							
					12								
					13								
					14								
			MST	0.1	50/5"	15			SM		Gravelly Silty <u>SAND</u> : brown; 50% fine sand; 35% silt; 15% small rounded gravel; no staining; no odor.		
					16								
					17								
					18								
					19								
			MST	0.2	50/5"	20			ML		Gravelly Sandy <u>SILT</u> : brown; 60% silt; 25% sand; 15% small rounded gravel; no staining; no odor.		
					21								
					22								
Bentonite													
Sand													

WELL/BORING LOCATION MAP						Delta Consultants				WELL/BORING: MW-11		
						INSTALLATION DATE: 6/17/2010				DRILLING METHOD: Hollow Stem Auger		
						PROJECT: I42611255				SAMPLING METHOD: DM Split Spoon		
						CLIENT: COP-ELT				BORING DIAMETER: 8.25 inches		
						LOCATION: 19924 International Blvd.				BORING DEPTH: 34.0 feet		
						CITY: SeaTac				WELL CASING: SCH 40 PVC 2"		
						STATE: WA				WELL SCREEN: 22.0 – 32.0 feet (0.010")		
						DRILLER: Cascade Drilling, Inc.				SAND PACK: 20.0 – 34.0 (2x12)		
WELL/BORING COMPLETION	FIRST	STABILIZED	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	98.11
	▽	▼									SURVEY DATE:	10/13/10
											DTW:	27.12 on 9/2/10
											DESCRIPTION/LOGGED BY: Megan MacDonald	
<div><div>Sand</div></div>	▽		MST	0.7	50/6"	23			ML		Gravelly Silty <u>SAND</u> : 70% fine sand; 15% silt; 15% small rounded gravel.	
			WET	1.8	50/5"	24			SM			
			WET	1.1	50/6"	25			SM			Silty <u>SAND</u> : gray; 80% fine sand; 20% silt; mild odor.
			WET	0.8	50/6'	26						Same as Above.
			MST	5.3	50/2"	27			SM			Same as Above.
			MST	0.5	50/2'	28			ML			Gravelly Sand <u>SILT</u> : 50% silt; 35% sand; 15% small gravel; reddish-brown-rust staining?.
						29						
						30						
						31						
						32						
						33						
						34						
						35						
						36						
						37						
						38						
						39						
						40						
						41						
						42						
			43									
			44									

WELL/BORING LOCATION MAP						Delta Consultants				WELL/BORING: MW-12							
						INSTALLATION DATE: 6/17/2010				DRILLING METHOD: Hollow Stem Auger							
						PROJECT: I42611255				SAMPLING METHOD: DM Split Spoon							
						CLIENT: COP-ELT				BORING DIAMETER: 8.25 inches							
						LOCATION: 19924 International Blvd.				BORING DEPTH: 32.0 feet							
						CITY: SeaTac				WELL CASING: SCH 40 PVC 2"							
						STATE: WA				WELL SCREEN: 22.0 – 32.0 feet (0.010")							
						DRILLER: Cascade Drilling, Inc.				SAND PACK: 20.0 – 32.0 (2x12)							
						WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	97.76
																SURVEY DATE:	10/13/10
																DTW:	26.40 on 9/2/10
DESCRIPTION/LOGGED BY: Megan MacDonald																	
Concrete													Original Surface = asphalt Air-knifed to 5.0 feet bgs.				
Grout							1										
							2										
							3										
							4										
							5										
				MST	0.3	50/5"	6		ML				Gravelly Sandy <u>SILT</u> : brown; 40% silt; 30% fine to medium sand; 30% small rounded-angular gravel; no staining; some slough on top; no odor.				
							7										
							8										
							9										
				MST	0.1	39 50/4"	10		ML				Same as Above: some slough on top.				
						11											
						12											
						13											
						14											
			MST	0.3	50/5"	15		ML				Same as Above.					
						16											
						17											
						18											
						19											
Bentonite							20		ML				Same as Above: (cobble in shoe).				
Sand			MST	-	50/5"	21											
						22											

WELL/BORING LOCATION MAP		Delta Consultants					WELL/BORING: MW-12					
		INSTALLATION DATE: 6/17/2010			DRILLING METHOD: Hollow Stem Auger							
		PROJECT: I42611255			SAMPLING METHOD: DM Split Spoon							
		CLIENT: COP-ELT			BORING DIAMETER: 8.25 inches							
		LOCATION: 19924 International Blvd.			BORING DEPTH: 32.0 feet							
		CITY: SeaTac			WELL CASING: SCH 40 PVC 2"							
		STATE: WA			WELL SCREEN: 22.0 – 32.0 feet (0.010")							
		DRILLER: Cascade Drilling, Inc.			SAND PACK: 20.0 – 32.0 (2x12)							
		WELL/BORING COMPLETION	FIRST ✓	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION
			MST	0.1	50/6"	23		ML		SURVEY DATE:	10/13/10	
						24				DTW:	26.40 on 9/2/10	
						25		SM		DESCRIPTION/LOGGED BY: Megan MacDonald		
						26				Silty SAND: brown; 85% fine to medium sand; 15% silt; no staining; no odor.		
						27						
						28						
						29						
				WET	0	50/6'	30			SM	Silty SAND: brown; 85% fine to coarse sand; 15% silt; no staining; no odor.	
						31				No sample – only small to large angular gravel.		
						32						
						33						
						34						
						35						
						36						
						37						
						38						
						39						
						40						
						41						
						42						
						43						
						44						
											*Driller indicated we were back in hard material at ~32 feet bgs. Instructed him to stop and set well at 32 feet with 10 feet of screen.	

WELL/BORING LOCATION MAP			Delta Consultants					WELL/BORING: MW-13				
			INSTALLATION DATE: 6/17/2010					DRILLING METHOD: Hollow Stem Auger				
			PROJECT: I42611255					SAMPLING METHOD: DM Split Spoon				
			CLIENT: COP-ELT					BORING DIAMETER: 8.25 inches				
			LOCATION: 19924 International Blvd.					BORING DEPTH: 32.0 feet				
			CITY: SeaTac					WELL CASING: SCH 40 PVC 2"				
			STATE: WA					WELL SCREEN: 22.0 – 32.0 feet (0.010")				
			DRILLER: Cascade Drilling, Inc.					SAND PACK: 20.0 – 32.0 (2x12)				
WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	97.33
											SURVEY DATE:	10/13/10
											DTW:	26.68 on 9/2/10
											DESCRIPTION/LOGGED BY: Megan MacDonald	
Concrete						1					Original Surface = asphalt Air-knifed to 5.0 feet bgs.	
Grout						2						
						3						
						4						
						5						
				MST	0.1	50/5"	6			ML	Gravelly Sandy <u>SILT</u> : brown; 50% silt; 25% fine to coarse sand; 25% small gravel; no staining; no odor.	
						7						
						8						
						9						
				MST	0.1	50/6"	10			SM	Gravelly Sandy <u>SILT</u> : brown; 50% fine to medium sand; 25% silt; 25% small gravel; no staining; no odor. Cobble jammed in shoe.	
						11						
					12							
					13							
					14							
			MST	0.2	39 50/2"	15			ML	Gravelly Sandy <u>SILT</u> : brown; 50% silt; 30% sand; 20% small rounded gravel; no staining; no odor.		
					16							
					17							
					18							
					19							
			MST	0.1	50/5"	20			ML	Same as Above.		
					21							
					22							
Bentonite												
Sand												

WELL/BORING LOCATION MAP					Delta Consultants					WELL/BORING: MW-13	
INSTALLATION DATE: 6/17/2010					DRILLING METHOD: Hollow Stem Auger						
PROJECT: I42611255					SAMPLING METHOD: DM Split Spoon						
CLIENT: COP-ELT					BORING DIAMETER: 8.25 inches						
LOCATION: 19924 International Blvd.					BORING DEPTH: 32.0 feet						
CITY: SeaTac					WELL CASING: SCH 40 PVC 2"						
STATE: WA					WELL SCREEN: 22.0 – 32.0 feet (0.010")						
DRILLER: Cascade Drilling, Inc.					SAND PACK: 20.0 – 32.0 (2x12)						
WELL/BORING COMPLETION	FIRST	STABILIZED	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	97.33
	▽	▼								SURVEY DATE:	10/13/10
										DTW:	26.68 on 9/2/10
	DESCRIPTION/LOGGED BY: Megan MacDonald										
	▽		MST	0	50/5"	23		ML			Gravelly Sandy <u>SILT</u> : brown; 50% silt; 30% sand; 20% small rounded gravel; no staining; no odor.
			WET	0.1	50/6"	24					
						25		SM			Silty <u>SAND</u> : 85% fine to medium grained sand; 15% silt; no staining; no odor.
						26					
			MST	0	50/2"	27		ML		*Driller indicated that soil got very stiff at ~32 feet bgs. 35 feet sample moist, but not wet. Instructed driller to chip hole back up to 32 feet, set well there with 10 feet of screen.	
						28					
						29					
						30					
						31					
						32					
						33					
						34					
						35					
						36					
37											
38											
39											
40											
41											
42											
43											
44											

WELL/BORING LOCATION MAP					Antea Group					WELL/BORING: MW-14		
					INSTALLATION DATE: 6/26/2011					DRILLING METHOD: HSA		
					PROJECT: 2611255					SAMPLING METHOD: Split Spoon		
					CLIENT: ELT					BORING DIAMETER: 8.25 inches		
					LOCATION: 19924 International Blvd.					BORING DEPTH: 35.0 feet		
					CITY: SeaTac					WELL CASING: SCH 40 PVC 2"		
					STATE: WA					WELL SCREEN: 20 – 35 feet (0.010")		
					DRILLER: Cascade Drilling, Inc.					SAND PACK: 18 - 35 feet (2X12)		
WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (feet)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	99.20
											SURVEY DATE:	8/16/11
											DTW:	28.31 on 8/16/11
DESCRIPTION/LOGGED BY: Dan Rowlands												
Concrete						2					Original Surface = Asphalt	
Bentonite			DRY	2.2	21 25 30	4			SM		Silty <u>SAND</u> with Gravel: brown; ~70% fine sand; ~20% silt; some gravel; no odor.	
			DRY	2.3	22 30 30	10			SM		Silty <u>SAND</u> with Gravel: brown; ~60% fine sand; ~30% silt; some rounded gravel no odor.	
			DRY	1.8	42 50/6"	16			SP		Gravelly <u>SAND</u> : brown; ~70% medium to coarse and; ~30% rounded gravel; no odor.	
			MST	2.4	45 50/6"	20			ML		Gravelly <u>SILT</u> with Sand: brown; ~60% silt; ~30% rounded gravel; some fine sand; no odor.	
			MST	25.2	43 50/6"	26			SP		Gravelly <u>SAND</u> : brown; ~60% well graded sand; ~40% rounded gravel; no odor.	
Sand			WET	19.5	50/6"	30			SP		<u>SAND</u> : gray; 100% medium sand; slight odor.	
						32					Driller notes much harder material at ~33 feet.	
			WET	19.2	50/6"	36			SP		Gravelly <u>SAND</u> : brown; ~70% medium to coarse sand; ~30% rounded to subangular gravel; slight odor.	
						38						
						40						
						42						
						44						

WELL/BORING LOCATION MAP			Antea Group					WELL/BORING: MW-16				
			INSTALLATION DATE: 7/5/2011					DRILLING METHOD: SONIC				
			PROJECT: 2611255					SAMPLING METHOD: Stainless Steel Core				
			CLIENT: ELT					BORING DIAMETER: 6.0 inches				
			LOCATION: 19924 International Blvd.					BORING DEPTH: 35.0 feet				
			CITY: SeaTac					WELL CASING: SCH 40 PVC 2"				
			STATE: WA					WELL SCREEN: 18 – 33 feet (0.020")				
			DRILLER: Cascade Drilling, Inc.					SAND PACK: 16 - 35 feet (2X12)				
WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (feet)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	98.35
											SURVEY DATE:	8/16/11
											DTW:	27.82 on 9/19/11
											DESCRIPTION/LOGGED BY: Mackie Manivong	
Concrete						2					Original Surface = Asphalt	
						4						
						6			SP		<u>SAND</u> : gray; poorly-graded fine sand; ~10-15% fine gravel; no iron staining; no odor.	
						8						
Bentonite			MST	0.0	NA	10						
			MST	0.0	NA	12			ML		<u>SILT</u> : gray; ~10% gravel; no odor.	
						14			SP		<u>SAND</u> : gray; poorly-graded fine sand; ~10-15% fine gravel; no iron staining; no odor.	
			MST	4.0	NA	16						
						18						
			MST	0.0	NA	20			SP		~15-20% fine to coarse gravel at 19.0 to 20.0 feet; no odor.	
						22			SM		Silty <u>SAND</u> : gray; poorly-graded fine sand; ~20% silt; ~10-15% fine to coarse gravel; no odor.	
			MST	-	NA	24					Silty <u>SAND</u> : gray; poorly-graded fine sand; ~20% silt; ~10-15% fine to coarse gravel; odor at 22.5-25.0 feet.	
			WET	6.0	NA	26						
			WET	5.0	NA	28			SP		<u>SAND</u> : gray; poorly-graded medium sand; trace gravel at 27.5 feet; odor.	
						30						
			MST	-	NA	32						
						34			SM		Silty <u>SAND</u> : gray; poorly-graded fine sand; ~20% silt; ~10-15% fine to coarse gravel; odor.	
						36						
						38						
						40						
						42						
						44						

WELL/BORING LOCATION MAP						Antea Group					WELL/BORING: MW-17	
						INSTALLATION DATE: 7/7/2011			DRILLING METHOD: SONIC			
						PROJECT: 2611255			SAMPLING METHOD: Stainless Steel Core			
						CLIENT: ELT			BORING DIAMETER: 6.0 inches			
						LOCATION: 19924 International Blvd.			BORING DEPTH: 35.0 feet			
						CITY: SeaTac			WELL CASING: SCH 40 PVC 2"			
						STATE: WA			WELL SCREEN: 20 – 35 feet (0.020")			
						DRILLER: Cascade Drilling, Inc.			SAND PACK: 18 - 35 feet (2X12)			
WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (feet)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	99.39
											SURVEY DATE:	8/16/11
											DTW:	28.47 on 9/19/11
DESCRIPTION/LOGGED BY: Mackie Manivong												
Concrete						2					Original Surface = Asphalt	
Bentonite			WET	-	-	4						
			MST	0.0	NA	6			SM		Silty GRAVEL: brown; wet.	
			MST	0.0	-	8					Gravelly Silty SAND: brown; asphalt debris; wet; 65% fine to medium sand; 20% silt; 15% gravel; no odor.	
			MST	0.0	-	10			SP		SAND: brown; poorly-graded fine sand; 15-20% fine to coarse gravel; trace silt; no odor.	
			MST	0.0	-	12			SM		Silty SAND: gray and brown; 70% sand; 30% silt; trace gravel; trace iron staining; no odor.	
Sand			DRY	0.0	-	14			ML		Gravelly SILT: gray; 85% silt; 15% fine to medium subrounded gravel; no staining; no odor.	
			MST	-	-	16						
						18			SP		SAND: gray; poorly-graded fine sand; silt lenses throughout; trace gravel; no staining, no odor.	
			WET	0	NA	20						
				13.1*	-	22			SP		SAND: gray; poorly-graded medium sand; becomes coarse sand at 28.0 feet; no iron staining, no odor.	
				0-1.9*	-	24						
				0-2.1*	-	26			SM		Silty SAND: gray; mostly fine sand; 30-40% silt; 101-15% fine to coarse gravel; some iron staining, no odor.	
				0-4.9*	-	28						
				0*	-	30			GM		Silty GRAVEL: gray; fine to coarse subangular gravel; 30-35% silt; 15% coarse sand; some iron staining, no odor.	
						32						
						34						
						36						
						38						
						40						
						42						
						44						

* 13.1 when PID is placed in core bag. 0 when put in separate baggie and PID'd.

WELL/BORING LOCATION MAP			Antea Group					WELL/BORING: AS-1				
			INSTALLATION DATE: 7/6/2011					DRILLING METHOD: SONIC				
			PROJECT: 2611255					SAMPLING METHOD: Stainless Steel Core				
			CLIENT: ELT					BORING DIAMETER: 6.0 inches				
			LOCATION: 19924 International Blvd.					BORING DEPTH: 35.0 feet				
			CITY: SeaTac					WELL CASING: SCH 40 PVC 2"				
			STATE: WA					WELL SCREEN: 29 - 31 feet (0.020")				
			DRILLER: Cascade Drilling, Inc.					SAND PACK: 28 - 35 feet (2X12)				
WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (feet)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION	-
											SURVEY DATE:	-
											DTW:	-
DESCRIPTION/LOGGED BY: Mackie Manivong												
Concrete						2					Original Surface = Asphalt	
						4						
						6			SM		Silty SAND: brown; 15-20% silt; ~10-15% fine to coarse gravel; no iron staining; no odor.	
						8			ML		SILT: brown; gray; trace sand and fine gravel; some iron staining; no odor.	
			MST	4.6	NA	10			SM		Silty SAND: gray; ~15-20% silt; ~10-15% fine to coarse gravel; trace iron staining; no odor.	
						12						
						14			SP		SAND: gray; poorly-graded medium sand; 15-20% fine to coarse gravel; no iron staining; no odor.	
			MST	0.0	NA	16			ML		SILT: gray and brown; 5-10% mostly fine gravel; trace sand; no iron staining; no odor.	
						18					Slough from 17-18.5 feet.	
						20						
						22						
			MST	-	-	24			SM		Silty SAND: gray; 30-40% silt; ~10% fine to coarse gravel; no iron staining; no odor.	
						26			ML		SILT: gray; ~10% fine gravel; trace sand; no iron staining; odor.	
						28			SP		SAND: gray; poorly-graded medium sand; trace gravel; no iron staining; odor.	
						30			SM		Silty SAND: gray; mostly fine sand; 20-30% silt; 10-15% gravel.	
			MST	-	-	32			ML		SILT: gray; 20-25% fine to coarse gravel; no odor.	
			DRY	-	-	34						
			WET	-	-	36			SM		Silty SAND: gray; moist; fine sand; 20-25% silt; 10-15% fine to coarse gravel; no iron staining; odor at 33-34 feet.	
						38						
						40						
						42						
						44						

WELL/BORING LOCATION MAP						Antea Group				WELL/BORING: AS-2			
						INSTALLATION DATE: 7/6/2011				DRILLING METHOD: SONIC			
						PROJECT: 2611255				SAMPLING METHOD: Stainless Steel Core			
						CLIENT: ELT				BORING DIAMETER: 6.0 inches			
						LOCATION: 19924 International Blvd.				BORING DEPTH: 40.0 feet			
						CITY: SeaTac				WELL CASING: SCH 40 PVC 2"			
						STATE: WA				WELL SCREEN: 32 - 34 feet (0.020")			
						DRILLER: Cascade Drilling, Inc.				SAND PACK: 30 - 40 feet (2X12)			
WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (feet)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	CASING ELEVATION -		
											SURVEY DATE: -		
											DTW: -		
DESCRIPTION/LOGGED BY: Mackie Manivong													
Concrete						2					Original Surface = Asphalt		
Bentonite			MST	-	-	4							
						6			SP		SAND: gray; poorly-graded medium sand; fine to coarse subangular gravel; no iron staining; no odor.		
						8					Poorly-graded fine sand from 8.0-15.0 feet; trace silt from 12.5-15.0 feet.		
						10							
						12							
						14							
						16							
						18					No core sample from 15.0-20.0 feet.		
			MST	-	-	20			ML		SILT: gray and brown; 10-15% fine to coarse subangular gravel; trace sand; no iron staining; no odor.		
			MST	-	-	22							
		MST	-	-	24			SP		SAND: gray and brown; poorly-graded fine sand; 10-15% fine to coarse subrounded gravel; trace iron staining; no odor.			
					26								
					28								
		MST	-	-	30			SP		SAND: gray and brown; poorly-graded medium sand; trace coarse gravel; no iron staining; no odor.			
Sand			MST	-	-	32			ML		SILT: gray; 20-25% fine to coarse gravel; trace iron staining; no odor.		
Native material Boring collapsed			DRY	-	-	34			GM		Silty GRAVEL: gray; mostly coarse subrounded gravel; 35-45% silt; trace sand; some iron staining; no odor.		
						36							
						38							
						40							
						42							
						44							

Appendix E

Terrestrial Ecological Evaluation

Terrestrial Ecological Evaluation Process- Simplified or Site-Specific Evaluation?

Documentation Form

	Terrestrial Concern	Response (Circle One)
*1	Is the site is located on or directly adjacent to an area where management or land use plans will maintain or restore <u>native or semi-native</u> vegetation?	Yes / <u>No</u>
*2a	Is the site used by a <u>threatened or endangered species</u> ?	Yes / <u>No</u>
*2b	Is the site used by a <u>wildlife species classified by the state department of fish and wildlife as a "priority species" or "species of concern" under Title 77 RCW?</u>	Yes / <u>No</u>
*2c	Is the site used by a <u>plant species classified by the Washington state department of Natural Resources natural heritage program as "endangered," "threatened," or "sensitive" under Title 79 RCW.</u>	Yes / <u>No</u>
*3	Is the site (area where the contamination is located) located on a property that contains at least ten acres of <u>native vegetation</u> within 500 feet of the area where the contamination is located?	Yes / <u>No</u>
4	Has the department determined that the site may present a risk to significant wildlife populations?	Yes / <u>No</u>

*1 This includes for example, green-belts, protected wetlands, forestlands, locally designated environmentally sensitive areas, open space areas managed for wildlife, and some parks or outdoor recreation areas. This does not include park areas used for intensive sport activities such as baseball or football.

*2a What are the threatened or endangered species in Washington state?

*2b Which plant species are classified as threatened, endangered, or sensitive? Where can I find out more information about this topic?

*2c For plants, "used" means that a plant species grows at the site or has been found growing at the site. For animals, "used" means that individuals of a species have been observed to live, feed or breed at the site.

*3 For this analysis, do not include native vegetation beyond the property boundary.

The following sources shall be used in making this determination: Natural Vegetation of Oregon and Washington, J.F. Franklin and C.T. Dyrness, Oregon State University Press, 1988, and L.C. Hitchcock, C.L. Hitchcock, J.W. Thompson and A. Cronquist, 1955-1969, Vascular Plants of the Pacific Northwest(5 volumes). Areas planted with native species for ornamental or landscaping purposes shall not be considered to be native vegetation. [WAC 173-340-7491(2)(c)(i)]

(Here's a link to the Seattle Public Library and the Washington State Library to borrow a copy of Natural Vegetation of Oregon and Washington, J.F. Franklin and C.T. Dyrness, Oregon State University Press, 1988, or you may purchase it through your favorite bookseller. Here's an additional link to a useful online Field Guide to Selected Rare Plants of Washington developed by the Washington State Department of Natural Resources' Natural Heritage Program (WNHP) and the Spokane District of the U.S.D.I. Bureau of Land Management (BLM) which contains fact sheets for 139 vascular plant species and one lichen species. Here is an aid to calculating area and an aerial photo depicting a site, its 500 foot boundary and several labeled circles identifying various areas for reference in judging the area of native vegetation within the 500 foot radius.

[\[Exclusions Main\]](#) [\[TEE Definitions\]](#) [\[Simplified or Site-Specific?\]](#) [\[Simplified Ecological Evaluation\]](#) [\[Site-Specific Ecological Evaluation\]](#) [\[WAC 173-340-7493\]](#)
[\[Index of Tables\]](#)
[\[TEE Home\]](#)

Terrestrial Ecological Evaluation Process- Simplified Evaluation

Documentation Form

Criteria # (Concern)	Criteria	Response (Circle One)
1 (exposure)	Is the total area of soil contamination at the site less than or equal to 350 square feet	Yes (End TEE) No
2 (exposure)	Does land use at the site and surrounding area make substantial wildlife exposure unlikely based on completion of <u>Table 749-1</u> ?	Yes (End TEE) / No
3 (pathway)	Is there a potential exposure pathway from soil contamination to soil biota, plants, or wildlife?	Yes / No (End TEE)
4 (contaminant)	Are the hazardous substances at your site listed in <u>Table 749-2</u> and is (or will) their location in the soil at your site be at a depth not exceeding the point of compliance, and at concentrations that do not exceed the values provided in <u>Table 749-2</u> .	Yes (End TEE) / No Note: You must perform bioassays for contaminants at your site if no table value is provided.
5 (contaminant)	Will hazardous substances listed in <u>Table 749-2</u> be present in the soil at your site within 6 feet of the ground surface at concentrations likely to be toxic, or with the potential to bioaccumulate, based on bioassays using methods approved by the department.	Yes / No (End TEE)

[\[Exclusions Main\]](#)
[\[TEE Definitions\]](#)
[\[Simplified or Site-Specific?\]](#)
[\[Simplified Ecological Evaluation\]](#)
[\[Site-Specific Ecological Evaluation\]](#)
[\[WAC 173-340-7493\]](#)
[\[Index of Tables\]](#)

[\[TEE Home\]](#)

Table 749-1

Simplified Terrestrial Ecological Evaluation-Exposure Analysis Procedure

Estimate the area of contiguous (connected) <u>undeveloped land</u> on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre).		
1) From the table below, find the number of points corresponding to the area and enter this number in the field to the right.		4
	<u>Area (acres)</u> 0.25 or less 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 or more	<u>Points</u> 4 5 6 7 8 9 10 11 12
2) Is this an <u>industrial</u> or <u>commercial</u> property? If yes, enter a score of 3. If no, enter a score of 1		3
3) ^a Enter a score in the box to the right for the habitat quality of the site, using the following rating system ^b . High=1, Intermediate=2, Low=3		3
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2. ^c		2
5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.		4
6) Add the numbers in the boxes on lines 2-5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified evaluation may be ended.		12

Notes for Table 749-1

^a It is expected that this habitat evaluation will be undertaken by an experienced field biologist. If this is not the case, enter a conservative score of (1) for questions 3 and 4.

^b **Habitat rating system.** Rate the quality of the habitat as high, intermediate or low based on your professional judgment as a field biologist. The following are suggested factors to consider in making this evaluation:

Low: Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.

High: Area is ecologically significant for one or more of the following reasons: Late-successional native plant communities present; relatively high species diversity; used by an uncommon or rare species; priority habitat (as defined by the Washington Department of fish and Wildlife); part of a larger area of habitat where size or fragmentation may be important for the retention of some species.

Intermediate: Area does not rate as either high or low.

^c Indicate "yes" if the area attracts wildlife or is likely to do so. Examples: Birds frequently visit the area to feed; evidence of high use b mammals (tracks, scat, etc.); habitat "island" in an industrial area; unusual features of an area that make it important for feeding animals; heavy use during seasonal migrations.

[\[Area Calculation Aid\]](#) [\[Aerial Photo with Area Designations\]](#) [\[TEE Table 749-1\]](#) [\[Index of Tables\]](#)

[\[Exclusions Main\]](#) [\[TEE Definitions\]](#) [\[Simplified or Site-Specific?\]](#) [\[Simplified Ecological Evaluation\]](#) [\[Site-Specific Ecological Evaluation\]](#) [\[WAC 173-340-7493\]](#)

[\[TEE Home\]](#)