Sound Subaru LUST # 442838
Walker Subaru VCP # NW 0420

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ENTERED 4/7/00

March 1, 2000
ADaPT Job No. S-WA99-2641

Walker Subaru
720 Rainier Avenue South
Renton, Washington 98055

Attention: Mr. Dale Walker

Subject: Voluntary Cleanup Program (VCP) Report
Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington

Dear Mr. Walker:

ADaPT Engineering, Inc. (ADaPT), is pleased to provide you with the following results of our Voluntary Cleanup Program (VCP) Report for the above referenced parcel. This report is provided for the information of Walker Subaru and their agents. If this report is to be reproduced and/or transmitted to a third party, it must be reproduced and/or transmitted in its entirety. Any exceptions will be made only with the written permission of ADaPT.

ADaPT appreciates the opportunity to work with you on this project. If you have any questions, or if we can be of further assistance to you, please contact us at (206) 654-7045.

Respectfully Submitted,

ADaPT Engineering, Inc.

Charles C. Cacek
Senior Project Manager

Daryl S. Petrarca, R.E.A.
Vice President of Environmental Services
Senior Reviewer

DEPARTMENT OF ECOLOGY
NWRO/TCP TANKS UNIT

INTERIM CLEANUP REPORT	☐
SITE CHARACTERIZATION	☐
FINAL CLEANUP REPORT	☑
OTHER	☐
AFFECTED MEDIA: SOIL	☑
OTHER GW	☑
INSPECTOR (INIT.) DATE 4-7-00	

VOLUNTARY CLEANUP PROGRAM REPORT
WALKER SUBARU USED CAR LOT
250 RAINIER AVENUE SOUTH
RENTON, WASHINGTON

Prepared For

WALKER SUBARU
720 RAINIER AVENUE SOUTH
RENTON, WASHINGTON

February 28, 2000

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1.0 EXECUTIVE SUMMARY

This report summarizes activities conducted by consultants working on behalf of the current owners of the Walker Subaru Used Car lot located at 250 Rainier Avenue South in Renton, Washington. This report provides pertinent information as appropriate in accordance with the Working Draft March, 9, 1994 Guidance on Preparing Independent Remedial Action Reports.

The site was first listed Washington State Department of Ecology (Ecology) as LUST No. 44286 on April 8, 1998 based on site work conducted on behalf of the owner, Walker Subaru. To summarize site conditions, residual soil and groundwater contamination resulting from on-site and possibly offsite sources have been identified in three areas of the subject parcel:

- The pump islands;
- The 10,000 gallon gasoline USTs, and;
- The southeast portion of the site.

The following bulleted items discuss the results of past and current site work with relation to soil and groundwater conditions and remedial activities:

- Soil samples collected from boring/well MW-3, advanced by others (Flour Daniel GTI), on the southeastern portion of the site, exhibited elevated concentrations of diesel and motor oil-range total petroleum hydrocarbon (TPH) concentrations in excess of the Ecology Model Toxics Control Act (MTCA) Method A cleanup level. The impacted soils occurred at a depth of approximately 13 feet to 15 feet below ground surface (bgs). Two Geoprobe explorations completed by ADaPT revealed similarly impacted soil in the general area of this boring/well. A sample collected from this horizon by ADaPT was analyzed for Extractable Petroleum Hydrocarbons (EPH) for risk-based assessment under the MTCA Interim TPH Method B calculations. Based upon the risk-based calculations, the impacted soils at this location were deemed acceptable for unlimited site use.

- Soils samples collected from shallow depths in the former pump island area by others (GTI, 1996) and ADaPT confirmed the presence of gasoline-impacted soils. A sample collected from the impacted zone was analyzed for Volatile Petroleum Hydrocarbons (VPH) for risk-based calculations under Ecology MTCA Method B guidelines. Based upon the risk-based calculations, the sample was in excess of one part million for the soil to groundwater pathway, and was therefore not in compliance with the Method B standard. A total of 100.47 tons of near surface, gasoline-impacted soils were excavated from the former pump island area and transported off-site for thermal treatment. A residual amount of impacted soils near the northwest corner of the former service island were not removed due to the presence of shallow utility lines. In our opinion, approximately 10 tons of impacted soils remain at this location. One confirmatory soil sample collected on the southwest portion of the service island exhibited a total lead concentration that was in excess of the MTCA Method A cleanup level. In our opinion, the source of the lead the fill material. No other samples collected from the site exhibited total lead concentrations in excess of the cleanup criteria.

- Past groundwater sampling results indicated two general areas of the site that have been impacted by hydrocarbons; heavy-end hydrocarbons on the eastern portion of the site, and gasoline-range hydrocarbons in the vicinity of the gasoline USTs. Two months prior to the most recent groundwater sampling event, three of the wells (MW-1, MW-3, and MW-4) were treated with oxygen release compound (ORC®) to increase the rate of biodegradation in the area of the wells. The most recent groundwater sampling at the site has confirmed that groundwater samples collected from wells MW-1, MW-2 and MW-4, are in compliance with Method A cleanup goals for petroleum constituents. The sample collected from well MW-3 exhibited slightly elevated concentrations of diesel-range hydrocarbons, and these concentrations have significantly reduced since the previous sampling event. No information obtained for this study indicated an on-site source for this contamination, and based upon the assessed groundwater migration direction, the contamination may be the result of an off-site source to the east or northeast.

- Assessment work is currently being performed by others (Environmental Partners, Inc.) on the southeastern portion of the property. Well MW-1 on this parcel has exhibited elevated TPH and BTEX concentrations that were in excess of MTCA Method A cleanup levels. Recently, two additional wells have been installed on this portion of the parcel. Test results from these borings and wells were not made available for our review. Future monitoring of these wells may yield valuable information concerning soil and groundwater conditions on this portion of the subject site.

- No domestic or municipal water wells or other sensitive receptors are located closer than 0.75 miles from the subject site. Based on the characterized nature of hydrocarbon presence at the site, no potential risk exists to these sensitive areas.

Conclusions:

- Based upon the minor residual soil contamination in the pump island area, and the results of EPH analysis of the soils encountered at depth on the southeastern portion of the site, we request No Further Action status for soils these portions of the site.

- Based upon the non-detectable concentrations of gasoline-range TPH or BTEX compounds for wells MW-1 and MW-2, and the slightly elevated heavy-end TPH concentrations for well MW-3, we request No Further Action status for theses portions of the subject site.

The proceeding is intended for introductory and reference uses only. The complete reading of this report is recommended.

2.0 INTRODUCTION

The following report presents the results of a Voluntary Cleanup Program (VCP) report conducted at the Walker Subaru Used Car lot located at 250 Rainier Avenue South in Renton, Washington (LUST No. 442836). This VCP report was carried out to assess the nature of petroleum hydrocarbons in soils and groundwater first reported on April 8, 1998, and to address the restoration of subsurface soils and groundwater at the site in a manner that adequately protected the public health, safety, welfare, and the environment. The scope of this VCP was designed to meet applicable regulations outlined in Washington Administrative Code (WAC) Chapter 173-340, the Model Toxics Control Act Cleanup Regulation (MTCA).

This VCP report has been prepared for the exclusive use of Walker Subaru or their agents for specific application to this project in accordance with generally accepted geologic and environmental engineering practices.

3.0 PROJECT BACKGROUND/SITE DESCRIPTION

3.1 Site Location

The subject parcel is located at 250 Rainier Avenue South in Renton, Washington (Township 23 North, Range 5 East, NE¼ of SW¼ of Section 18). The approximately 35,800 square-foot, irregularly-shaped parcel is bounded on the west by Rainier Avenue South, beyond which resides a newly completed Walgreen's retail store, to the north by an abandoned alleyway, beyond which resides Wendy's Restaurant, to the east by a newly constructed asphalt paved parking lot and Safeway grocery store, and to the south by South 3rd Street, beyond which lies a Union 76 Service Station/convenience store with petroleum USTs. A vicinity map depicting the general location of the site appears on Figure 2, Appendix B. The approximate site boundaries, structures, former UST system layout, and on-site soil exploration and monitoring well locations appear on the Site & Exploration Plan, Figure 3, Appendix B.

3.2 Facility Description

The current site configuration includes a single-story sales and service building for the existing used car sales lot, along with asphalt paved driveway and parking areas. The entire asphalt-paved lot is utilized for vehicle parking and display. Also, two deep (11 to 12 feet bgs) sewer line easements cross the southern portion of the parcel in a general ENE to SSW direction. Concrete-paved drive slabs are present on the east and north sides of the site building, and minor landscaped areas on the eastern, western, and southern peripheries on the property as shown on, Site & Exploration Plan, Figure 3, Appendix B. The former UST fuel storage area and two service islands are located on the south of the building.

The single-story, metal-sided site building that was originally constructed in 1966 as a car wash. Prior to our recent site work, the concrete slab of the service island also remained on-site. This area is now asphalt paved. The three 10,000 gallon capacity gasoline USTs were installed on the property in 1971, and were apparently utilized between approximately 1971 and 1983. Former site work by others (ERM, Environmental Associates, Inc.) indicated that the gasoline USTs were removed in 1983 or there abouts,

though no records or permits were available at Ecology or the City of Renton Fire Department concerning this issue.

The estimated capacities of the USTs removed in 1983, their former contents, are summarized below.

Plate 1: Former USTs

Tank No.	Tank Capacity (gallons)	Tank Material	Former Contents	Date Closed/ Method
1	10,000	Unknown	Gasoline	1983 Removed
2	10,000	Unknown	Gasoline	1983 Removed
3	10,000	Unknown	Gasoline	1983 Removed

3.3 Historical UST System Owner/Operators

Based upon information obtained for a Phase I ESA completed on the site by others (EAI, 1996), the parcel was operated as a Texaco Service Station and carwash between 1971 and approximately 1982 or 1983. The portion of the property located approximately to the north of the service islands and including the former gasoline UST area is currently and has been owned by Walker Subaru. The area to the south and southeast, including the pump islands and areas south of the former USTs is the former Lake Street Right-of-Way, which has historically been the property of the City of Renton. It is our understanding that the City of Renton is granting this easement to Walker Subaru. The triangular-shaped parcel on the southeast portion of the property that includes the current espresso kiosk and driveway was previously owned by Safeway Corporation, and was recently sold to Walker Subaru. The kiosk was formerly operated as the Photo Chalet.

The Phase I ESA also indicated the presence of a small service station on the southwest portion of the parcel between approximately 1918 and 1953. This service station reportedly supported three 550-gallon gasoline USTs. No other information was available concerning this facility on the premises, or whether the USTs had been closed or removed.

Questions concerning the environmental status of the property should be referred to:

Walker Subaru
720 Rainier Avenue South
Renton, Washington 98055

3.4 Vicinity Property Usage

The site is located in a small commercial usage area, including: A Wendy's fast food restaurant adjacent to the north of the site; Rainier Avenue South to the west, beyond which resides a new Walgreens drug store; an asphalt-paved parking lot and a new Safeway grocery store adjacent to the east. The area just east of the southern portion of the site formerly supported a service station and eight (8) groundwater monitoring well monuments were observed, three of which are located on the southeast corner of the subject parcel. The property is bordered to the south by 3rd Avenue South, beyond which lies a Union 76 mini-service and convenience store with a service island and USTs. Adjacent properties are depicted on the Site Vicinity Map, Figure 4, Appendix B.

3.4.1 Former Service Station/Safeway Property

The adjacent property to the east of the subject parcel formerly supported a gasoline service station. This site is listed as a LUST facility (Ecology Release No. 422679, reported 5/29/97). Subsurface environmental assessments completed by others (Environmental Partners, Inc.) have indicated that a release of petroleum hydrocarbons had occurred on the parcel. An August 22, 1996 report by EPI indicated that three soil borings/monitoring wells were completed as wells on this parcel. A soil sample collected from the 8-foot depth from boring MW-1 (shown as "MW-A" on Figure 3), exhibited a gasoline-range TPH concentration of 7,100 parts per million (ppm). Groundwater samples collected from wells MW-1 and MW-2 (located to the east of MW-1) exhibited gasoline-range TPH concentrations of 9,800 and 15,000 parts per billion, and MW-3 (located to the north of the other wells) exhibited a motor oil-range TPH concentration of 8,000 ppb. Groundwater depths at the site ranged from approximately 8 to 11 feet bgs, with an inferred groundwater migration direction to the southwest, approximately cross gradient to upgradient from the subject site, as depicted in their report. Results of a subsequent Geoprobe subsurface environmental assessment by EPI indicated that the gasoline-related groundwater contamination plume generally located between MW-1 and MW-2 and the espresso stand. A groundwater sample collected from Geoprobe exploration GW-3, located downgradient from the espresso stand did not exhibit detectable concentrations of gasoline through motor oil-range TPH and BTEX. In our opinion, it is possible that contaminants from well MW-1 location may have migrated onto the subject parcel. It is also possible that oil-range hydrocarbons detected in MW-3 location on the Safeway parcel have migrated onto the subject site. A recent site visit revealed that the original wells MW-2 and MW-3 had been removed, and an additional seven well had been installed on this property, including two adjacent to the espresso kiosk. Results of this work were not made available at the time of this writing. *

3.4.2 Union 76 Station

The site is bordered to the south by 3rd Avenue South, beyond which lies a Union 76 mini-service and convenience store. This facility supports two service islands, two 10,000 to 20,000 gallon unleaded gasoline USTs and one 10,000 to 20,000 gallon diesel UST. According to the Ecology UST report for 11/1/99, the current USTs were installed in 1998. During a site visit, we did not observe any groundwater monitoring well monuments on this site. In addition, no information we were able to obtain indicated that a release had occurred on the parcel. Also, the UST field is located on the south side of the building,

approximately 150 feet south of the subject site. Based upon the age of the system and the separation distance of the UST field, it does not appear likely that this site has impacted the subject parcel.

3.5 Vicinity Utilities & Other Subsurface Features

Based on a site reconnaissance conducted by ADaPT in 1999, as well as plans obtained from the City of Renton Public Works Department, underground utilities at the site include sanitary sewer, a storm sewer, natural gas, electrical power, and water. Overhead power and telephone lines were observed on the southwest corner of the property, along Rainier Avenue. Sanitary and storm sewer lines are located on the southern portion of the parcel, as depicted on Figure 3, Appendix B. Shallow power lines serve the sign on the south-central portion of the site, and a shallow water line enters the property from the west.

Plate 2: Vicinity Utilities		
Utility	Location	Distance from USTs
Sanitary Sewer Main	SW to SE side of parcel. Site lateral connection on south side of building	Along South side of former USTs.
Storm Sewer Main	SW to SE side of parcel, with distribution lines to main manhole.	Along South side of former USTs.
Water Service Main	West side of property, extending to the southwest corner of the building.	30 feet south of western UST
Natural Gas Service	East side of building	40 feet south of western UST
Electrical Service	Overhead; underground from building to sign.	East side of former USTs; adjacent to service island.
Telephone Service	Overhead	

Both the storm water and sanitary sewer lines extend roughly along the south side of the former gasoline UST tank locations. A representative from the City of Renton Public Works Department could not discern the age of the respective sewer lines, suggesting that they dated to at least the 1940s. He also did not know the depth of the utilities, though he suggested that they may be on the order of 12 feet bgs. While onsite, we measured the storm water manhole/catch basin on the southeastern portion of the site, which was approximately 12 feet bgs. The flow observed in the base of the manhole was from the ENE to the SSW. The storm water and sanitary sewer easements parallel one another across the site, and were likely installed at the same time. Both lines appear to follow the old Black River Channel across the site and beyond to the northeast, as it appears on a City of Renton Planning department maps from 1947 and 1967, and the USGS topographic Map "Renton Area" dated 1950. The Black River formerly drained Lake Washington prior to the time of the Montlake Cut in 1917-18, flowing from northeast to southwest across the current site. After the cut was complete, the level of Lake Washington dropped approximately 10 feet, and the Black River was abandoned. The Cedar River, which formerly connected to the Duwamish River, was redirected into Lake Washington. Based upon the location of the USTs relative to the sewer alignments and the reported abandoned river channel, there is a risk that contaminants could exploit this possible pathway.

3.6 Regional Geography & Climate

The subject site is relatively flat with a total relief of approximately three feet. The site elevations range from approximately 29.5 feet to 32.5 feet MSL based upon a preliminary survey map for the City of Renton planning department. Physiographically, the parcel is located in a lowland amidst glacial drumlinoid topography. Near surface bedrock is exposed in the vicinity, and past active underground coal mines are located with 0.75 mile to the west of the site.

Climatological data indicates that the annual precipitation for this site is approximately 37 inches per year, with the majority of precipitation occurring between November and March. Because the site is completely covered or paved, as are the bulk of the adjacent and nearby properties, actual moisture available for infiltration and percolation should be significantly less than precipitation. Based on Ecology formulas provided in the "Soil Matrix" portion of the UST Cleanup guidelines (total area of the site/paved area of the site, or 50% (whichever is smaller) x precipitation), actual precipitation which could be available for percolation would be less than 18 inches.

3.7 Regional & Site Geology

Based on subsurface investigations conducted at the site in 1996 (Groundwater Technology), 1998 (Flour-Daniel GTI), and 1999 (ADaPT), site soils consist of generally consisted of variable silty gravelly sand with deleterious material (asphalt, concrete, wood debris, etc.) interpreted to be fill that extended to depths of approximately 3 feet to 15 feet bgs. The fill soils were underlain by moist to saturated, gray to black, silty fine sand with variable gravel and silt-rich interbeds. While the area is mapped as "modified land" by local geologic maps, the native soils encountered at depth in several site explorations were likely alluvial in nature, given the former Black River Channel location.

Detailed descriptions of the soils encountered in ADaPT's site explorations have been included on the provided Geoprobe exploration logs in Appendix E. A detailed cross section showing the lithology is presented in Figure 5, "Cross Section A-A', Appendix B.

3.8 Vicinity Environmentally Sensitive Areas

As defined by the RCW 90.76.040, "a city, town, or county may apply to the Department of Ecology to have an area within its jurisdictional boundaries designated an environmentally sensitive area. A city, town or county may adopt proposed ordinances or resolutions establishing requirements for underground storage tanks located within an environmentally sensitive area which are more stringent than the state wide standards established under RCW 90.76.020." Identification of pertinent vicinity ecologically sensitive areas were made by examination maps provided by the City of Renton Planning Department, and field verification of location of each identified sensitive area with respect to the subject site.

3.8.1 Ecologically Sensitive Areas

The subject site is located within a commercially zoned area of Renton, and is approximately 0.6 miles to the southwest of the Green River and approximately 1.4 miles south of Lake Washington. An area designated as a wetland (The Black River Riparian Forest) is located approximately 0.9 miles east-southeast of the subject site. As pointed out in Section 3.6, topography in the site vicinity slopes gently west. Based on the distance of these sensitive features from the subject site, and the known characteristics of the petroleum hydrocarbons in the soils and groundwater at the site, conditions at the site could not conceivably pose a threat to these sensitive areas.

3.8.2 Regional Hydrogeology, Vicinity Water Wells, & Aquifer Classification

The site is on public water supplied by the City of Renton Water Department, which obtains its potable water supplies from deep wells, the nearest of which are located near the intersection of Houser Way North and Mill Avenue South, which is approximately 0.75 miles east of the subject parcel. These six wells, along with other wells located to the north and east access the City of Renton's water supply, which is designated as a sole source aquifer. According to representatives from the city of Renton, the primary and secondary aquifers obtain water supplies from depths greater than 250 feet bgs. According to a map obtained from the City of Renton planning Department, the site is located approximately 2200 feet to the west of the western limit of the APA-Zone 1 Aquifer Protection Area.

In December 1999, a search of recorded well logs was made by ADaPT at Ecology's Northwest Regional office for vicinity well logs. In addition, we obtained a water well location map from the City of Renton's Planning Department. Water well logs are catalogued in Ecology's archives by range, township, & section. Based on the reviewed records, five domestic well were identified within a one-mile radius of the subject parcel. However, the above-mentioned nearest beneficial use wells were approximately 0.75 miles east to southeast of the site. Based upon the separation distance of these wells as well as demonstrated near surface groundwater migration direction (see Section 6.0 of this report), it appears unlikely that contaminants from the subject site has impacted water quality in any of the above-mentioned beneficial use wells.

3.8.3 Local Hydrogeologic Conditions

Hydrological studies completed on the subject site indicate that groundwater depths have ranged from approximately 8½ feet to 12½ feet below ground surface. Seasonally, water levels have varied as much as 3.35 feet in individual wells. Previous assessments have reported groundwater migration direction varying from southwest to west. Hydraulic gradient across the area is generally quite flat, ranging from approximately 0.0007 ft/ft to 0.0009 ft/ft, based upon measurements taken from the respective contour

maps (Figures 6 and 7, Appendix B). No information we were able to obtain indicated aquifer parameters, such as transmissivity, storativity. Groundwater conditions are further discussed in Section 6.0 of this report.

4.0 UST DECOMMISSIONING

Based upon information obtained from previous site reports, the three 10,000-gallon gasoline USTs were removed at some unknown time in 1983 from the southern portion of the subject site. The location of the former USTs is depicted on Figure 3. No information we were able to obtain from Ecology or City of Renton Fire Marshall's office indicated any permits associated with tank decommissioning.

4.1 Regulatory Status

Ecology lists the site as LUST Site No. 442836, Release ID No. 442838, first listed in April 8, 1998, while operating as Sound Subaru. Ecology's LUST database indicates the site status as "monitoring". The Ecology LUST database indicates the site as having both soil and ground water as media affected by petroleum hydrocarbons. During the 1998 Phase II Environmental Study conducted by Flour Daniel GTI, soils and groundwater identified as containing petroleum hydrocarbon concentrations above MTCA Method A cleanup levels were identified and reported to Ecology. Monitoring of groundwater quality was initially carried out during the 1996 activities, as well as in April 1998 and December 1999. Groundwater monitoring results are summarized in Section 6.0 of this report.

5.0 SITE CHARACTERIZATION

Three previous investigations have been conducted at the site. These investigations (listed in the *References* attached to this report) were reviewed to prepare this VCP report and are summarized briefly below.

5.1 1996 Phase I Environmental Audit

Environmental Associates Inc. (EAI) completed a Phase I Environmental Audit (Phase I) for the subject site in March 1996 on behalf of the current owners, Sound Subaru. The Phase I was conducted to evaluate current and past activities that may have the potential to adversely impact the environment beneath the subject site. The Phase I identified a small former service station that occupied the southwestern portion of the property between approximately 1918 and 1953. The station reportedly supported three 550-gallon gasoline USTs. No records obtained for the report indicated that these USTs had been removed. The report also indicated that a service station resided on the southern half of the property from 1971 until approximately 1983. The station reportedly supported three 10,000-gallon capacity gasoline USTs. A permit drawn in 1983 for remodeling the station and car wash into an auto sales facility indicated that a permit would be required from the City of Renton Fire Department for UST removal, though no such permit was reviewed. The report also noted that a building formerly resided on the northwest corner of the parcel from approximately 1918 until the early 1980s. This building was formerly occupied by a carpet cleaning business and later a transmission repair facility. This report also referenced a 1988 environmental report completed by ERM that ADaPT did not review. According to the

EAI Phase I, the ERM report indicated that the USTs associated with the most recent service station were removed in 1982 or 1983, though no specific information obtained for the report confirmed this. The report did not indicate any reported environmental issues associated properties adjacent to the subject site, though an apparent service station was noted bordering the subject site to the east from the 1950s through 1980s based upon review of aerial photography.

5.2 1996 Phase II Environmental Study

In April 1996, Groundwater Technology, Inc. (GTI) conducted a Phase II Environmental Study (Phase II) of the site to assess the potential environmental concerns they had identified in the earlier Phase I. GTI advanced eight (8) Geoprobe explorations (numbered SB-1 through SB-8) to a maximum depth of 15 feet below ground surface (bgs). Two of the explorations were advanced in the area of the 10,000 gallon USTs (SB-1 and SB-2), two in the area of the former pump islands (SB-1 and SB-2), one near the older service station, (SB-5), and three others located on the northern portion of the parcel (SB-6, SB-7, and SB-8). The exploration locations are depicted on the Site and Exploration Plan, Figure 3, Appendix B.

Collected soil samples were screened for staining and odors as well as with a photoionization detector (PID). According to the report and soil logs, samples collected from the 10-foot depths from SB-1 and SB-2, advanced in the area of the 10,000 gallon USTs, exhibited mild petroleum odors. Also, samples collected from the 4-foot depths from SB-3 and SB-4, advanced between the former service islands, exhibited PID readings of up to 440 ppm and strong petroleum odors. Other samples collected from the site explorations did not exhibit obvious signs of contaminant impacts, such as stains, odors, or significant PID readings.

Soil samples collected from the 10-foot depths from explorations SB-1 and SB-2, advanced in the area of the former USTs, exhibited gasoline-range TPH concentrations of 74 parts per million (ppm) and 75 ppm, respectively, and low level concentrations of BTEX compounds, all of which were below MTCA Method A cleanup levels. Soil samples collected from the 3-foot depth from explorations SB-3 and SB-4, advanced within the pump island area, exhibited gasoline-range TPH concentrations of 1,200 ppm and 2,600 ppm, both of which are in excess of the MTCA Method A cleanup level. Soil samples collected from the 5-foot and 7-foot depths from explorations SB-6 and SB-7 did not exhibit significant concentrations of gasoline-range TPH or BTEX compounds. A sample collected from the 5-foot depth from exploration SB-8, advanced near the northeast corner of the site, exhibited a diesel-range TPH concentration of 60 ppm, which was below the MTCA Method A cleanup level. Analytical results are summarized on Table 1, Appendix C.

According to the report, groundwater was encountered in six of the explorations at approximately 11 to 12 feet bgs. Water samples were collected from five of the explorations using Geoprobe micropurge technology. Groundwater quality is discussed in Section 6.0 of this report.

5.3 1998 Additional Phase II ESA

In February 1998, Flour Daniel GTI conducted an additional subsurface environmental assessment to further delineate the extent of gasoline-range petroleum hydrocarbons in the area of the former service station USTs and pump islands on the southern portion of the site. The assessment included advancing four soil borings to a depth of 20 feet, collection screening and analytical testing of selected soil samples, installation of 4-inch I.D. PVC wells in each boring, and analytical testing of water samples collected from each well. Two of the borings/wells were installed in the area of the former gasoline USTs (MW-1 and MW-2), one installed in the center of the former pump islands (MW-4), and the fourth installed adjacent to the eastern property boundary (MW-3). The boring/well locations are depicted on the Site and Exploration Plan. Figure 3, Appendix B. Soil samples were collected at regular intervals of 5 feet and soil samples were visually and olfactory classified and screened with a PID as a basis for sample selection for analyses.

A total of eight soil samples (two per each boring) were submitted to the analytical laboratory for analytical testing. All selected samples were analyzed for WTPH-G/BTEX and total lead, and one sample (MW3-C) was analyzed for diesel and motor oil-range organics using Ecology Method WTPH-Dx. Analytical results are summarized in Table 1, Appendix C.

None of the soils samples exhibited detectable concentrations of BTEX, and only one sample exhibited a detectable concentration of gasoline-range TPH that was below the MTCA Method A cleanup level. However, the soil sample collected from the 15-foot depth from MW-3, advanced near the eastern property boundary, exhibited diesel and motor oil-range TPH concentrations of 884 ppm and 4,420 ppm, respectively, that were in excess of the MTCA Method A cleanup level.

5.4 1999 Supplementary Phase II Assessment

As a follow up to the previous site work, Walker Subaru retained ADaPT in August 1999 to review the work conducted to date and to prepare a work plan to close the environmental files on the site. Based on ADaPT's review, the source, the type, and extent of petroleum impact had not been adequately defined to prepare a remedial action plan. A Supplementary Phase II Site Assessment for the site was designed to evaluate these areas, to close data gaps, and delineate the extent of any petroleum contamination. Based on GTI and Flour Daniel GTI's previous work, three separate areas of the site had been identified as having some petroleum presence. These included:

Pump Islands
The 1996 GTI Assessment indicated the presence of near surface gasoline range TPH and BTEX impacts associated with the former service islands associated with the 1970's era service station. This included the areas associated with explorations SB-3 and SB-4. However, the soils encountered in boring/well MW-4, advanced in the central portion of the service island did not exhibited detectable concentrations of gasoline-range TPH or BTEX compounds. Also, the soils appeared to limited to within 5 feet of the ground surface based upon the results of exploration SB-4.

Southeast Portion of Site
A soil sample collected from the 15 foot-depth from boring/well MW-3, as well as a groundwater sample collected from the well, advanced on the southeastern portion of the site, exhibited diesel and motor oil-range TPH concentrations in excess of the MTCA Method A cleanup level. The source of the TPH encountered at this location was not readily obvious based upon past site work, and may have resulted from an off-site source to the east.

Gasoline USTs
Soil samples collected explorations SB-1 and SB-2, associated with the 1996 GTI assessment, indicated detectable concentrations of gasoline-range TPH that were below the MTCA Method A cleanup level. In addition, water samples collected from Geoprobe exploration SB-2 and monitoring Well MW-1 exhibited gasoline-range TPH and BTEX concentrations in excess of MTCA Method A cleanup levels. Considering the former presence of three 10,000 gallon gasoline USTs, it was our opinion that a paucity of data points were present in this area, and additional explorations supplemented with analytical testing would offer a higher confidence level. The source of the hydrocarbon impacts in this area appeared to be related to a release from the gasoline UST system.

The report for this investigation by ADaPT was not previously prepared. Boring logs, sampling protocols, and laboratory reports have been attached to this VCP report.

5.4.1 Purpose and Scope

The objective of the supplementary site assessment was to provide information which would assist in closing the site, either by active remediation methods, or otherwise, and to determine appropriate cleanup goals if active remediation is necessary. ADaPT's scope of services for this assessment included:

- A limited (one day) geophysical survey including magnetometer and ground penetrating radar was conducted at the site. The purpose of the survey was to evaluate the possible presence of abandoned UST systems, and to help site Geoprobe exploration locations based upon the results.

- Advancing eleven Geoprobe explorations and submitting soil and water samples for analysis. The locations of the Geoprobe explorations were based on the inconclusive results of the previous investigations.

- Based upon the presence of near surface gasoline-impacted soils in the service island area, remedial overexcavation was performed. The excavated soils were transported to a local thermal treatment facility.

- Treat the existing on-site ground water wells that previously exhibited elevated contaminant concentrations with oxygen release compound (ORC^{R}).

- Purge and resample the onsite wells.

5.4.2 Rationale of Sampling and Analytical Methods

In order to adequately investigate each of these areas, exploration using a Geoprobe direct drive sampling technology was deemed as the best method which would allow for both visual inspection as to the nature of the problem area and collection of the most representative samples of the remnant soils. Each exploration was continuously screened for visual and olfactory indication of petroleum hydrocarbon presence. Soil samples were collected, handled and screened on-site with a photoionization detector (PID) using standard soil sampling protocols (a copy of ADaPT's procedures is presented in Appendix D). Geologic conditions, observations, and PID screen results are presented on the boring logs in Appendix E.

Sample recovery was variably difficult in the upper five feet across the site, due to the occasional presence of gravels and broken concrete or asphalt. In general, however, sample recovery was sufficient in most cases to collect representative samples in areas of interest for screening field logging and analytical testing purposes.

The soil samples were submitted to the OnSite Environmental of Redmond, Washington based on results of PID screen and field indications of the presence of constituents of concern. Where no detectable presence of petroleum hydrocarbons was observed, the sample collected from just above the groundwater surface, just below the groundwater table and/or the bottom sample was submitted for analytical testing.

Soil samples collected from the areas of the former service islands and the UST field were analyzed for WTPH-G extended/BTEX, and samples collected from explorations near the eastern portion of the property were additionally analyzed for diesel and motor oil-range TPH by Ecology Method WTPH-D extended. In addition, obviously impacted samples collected from explorations advanced on the southeastern portion of the site and in the pump island areas were analyzed using the Extractable Petroleum Hydrocarbon (EPH) and Volatile Petroleum Hydrocarbon (VPH) Interim TPH test methods, respectively.

5.4.3 Geophysical Investigation Summary

The geophysical survey was completed on August 17, 1999 by Geo-Recon International under the observation of a geologist from ADaPT. The survey was completed in three general areas across the site; in the vicinity of boring/well MW-3, where heavy-end TPH was previously encountered; in the area of the on-site, 1918 vintage service station on the southwestern portion of the site; and in the area of the former 10,000 gallon USTs. The survey in the area of the older on-site service station did not reveal the presence of USTs or other associated anomalies. The survey completed in the area of the former 10,000-gallon USTs revealed the presence of possible backfill materials in this area, but not the presence of the USTs. The results of the survey completed in the vicinity of boring/well MW-3 revealed the possible presence of a possible abandoned piping and fill material at a depth of approximately 4 feet bgs, but no geophysical signatures typical of USTs. A copy of Geo-Recon International Geophysics report appears in Appendix G.

5.4.4 Subsurface Soil & Groundwater Investigation Summary

Eleven (11) Geoprobe explorations were completed by Cascade Drilling on August 23, 1999 under the observation of a geologist from ADaPT. The explorations were advanced using Cascade's Truck-mounted Geoprobe rig. The explorations were advanced to a maximum of approximately 16 feet depth bgs in the three areas of interest as discussed in Section 5.4 of this report. The Geoprobe explorations, designated GP-1 through GP-11, are depicted on Figure 3, Appendix B. Sampling protocols used for the soil sampling from the Geoprobe explorations are included in Appendix D. Analytical test results are included on Table 1, Appendix C, unless otherwise specified.

Service Island
Six Geoprobe explorations (GP-2, GP-6, GP-7, GP-8, GP-9, and GP-10) were advanced in the area of the former pump islands to help quantify the amount of gasoline impacted soils in this area identified from the 1996 GTI work at the site. The explorations were advanced to depths of approximately 8 feet bgs, with a continuous sampling interval from 2 feet to 8 feet depth. Soil samples recovered from exploration GP-2, advanced near the northwest corner of the former service island, did not exhibit obvious signs of petroleum impacts. Samples recovered from the 3½ to 5-foot depths from explorations GP-6, GP-7, GP-8, advanced on the eastern portion of the service islands, exhibited evidence of minor petroleum impacts, exhibiting PID readings of up to 15 ppm. Selected soil samples collected from these explorations did not exhibit detectable concentrations of gasoline-range TPH, and exhibited non-detectable to low level concentrations of BTEX compounds that were below MTCA Method A cleanup levels. The soil sample recovered from the 3½ to 4-foot depth from exploration GP-9 and the 3 to 4 foot depth from exploration GP-10, advanced on the western portion of the service islands, exhibited signs of significant contaminant impacts and PID readings of up to 288 ppm. Sample GP-9/3.5-4 exhibited a gasoline-range TPH concentration of 1,800 ppm. Sample GP-10/3-4 was analyzed for Volatile Petroleum Hydrocarbons (VPH) for assessment of the soils relative to calculated Method B levels. Results of the VPH analysis are discussed in Section 5.5 of this report.

Southeast portion of the Site
Three Geoprobe explorations (GP-3, GP-4, and GP-5) were advanced in the general vicinity of well MW-3, where diesel and heavy-end TPH contamination was identified from the 1998 Flour Daniel GTI work at the site. The explorations were advanced to depths of approximately 13 to 16 feet bgs, with a continuous sampling interval from approximately 4 feet to 13/15 feet for explorations GP-3 and GP-4 and 11 feet to 16 feet depth for GP-5. The soil samples from just above the groundwater table for each exploration were submitted to the laboratory for analytical testing for petroleum hydrocarbons constituents using WTPH-Dx. Sample GP-4/12-13 did not exhibit detectable concentrations of diesel through motor oil-range TPH. Soil sample GP-3/13-15 was analyzed for Extractable Petroleum Hydrocarbons (EPH) for risk-based evaluation under Ecology's interim Method B method for assessing TPH. Results of the EPH analysis are discussed in Section 5.5 of this report.

UST Vicinity
Two Geoprobe explorations (GP-1 and GP-11) were advanced in the general vicinity of the former 10,000 gallon gasoline USTs to help fill data gaps in this area, and supplement previous site characterization work by GTI (1996) and Flour Daniel GTI (1998). The explorations were advanced to depths of

approximately 13 feet and 16 feet bgs, respectively, with a continuous sampling interval from 4 feet to total exploration depth. Soil samples recovered from exploration the 10-foot to 13-foot depth interval from each of these explorations did not exhibit signs of significant petroleum impacts. The soil samples collected from just above the groundwater table for each exploration were submitted to the laboratory for analytical testing for petroleum hydrocarbons constituents using WTPH-G/BTEX. These samples did not exhibit detectable concentrations of gasoline-range TPH or BTEX compounds.

5.5 Rationale Interim TPH Calculations

In order to evaluate whether the EPH concentration observed in sample GP-3/13'-15'would constitute an environmental risk and impact groundwater at concentrations above MTCA Method A cleanup levels for groundwater, Ecology's Interim TPH guidance was used. The calculations also assess the potential human health cancer risk. The calculations are shown in Table 2, Appendix C. Based on the soil to groundwater pathway, the petroleum concentration observed in the soil sample would not impact groundwater above the MTCA Method A cleanup level of 1.0 mg/l for TPH. In addition, human health cancer risk was calculated to be less that one in one million, and therefore ,based upon these calculations unlimited site usage is deemed acceptable.

In addition, the VPH concentration in sample GP-10/3-4 used to assess the environmental risk of these contaminants potentially impacting groundwater at the site. The calculations are shown in Table 3 Appendix C. Based on the soil to groundwater pathway, the petroleum concentration observed in the soil sample would impact groundwater above the MTCA Method A cleanup level of 1.0 mg/l for TPH. Therefore, the concentration was in excess of the Method B level with respect to the soil to groundwater pathway.

5.6 Soil Remediation-Pump Island

Site Assessment work completed by Groundwater Technology, Inc. in 1996 and ADaPT in 1999 indicated the presence of near surface soil contamination in the area of the former pump islands on the south-central portion of the property. Soil samples collected from this vicinity exhibited gasoline-range TPH concentrations of up to 2,600 ppm, and benzene of up to 4.6 ppm. In addition, sample analysis by Ecology Interim TPH methods indicated a VPH concentration was in excess of the Method B level with respect to the soil to groundwater pathway. Based upon these elevated concentrations, as well as the shallow nature of these soils, it was deemed most effective to remove these soils by overexcavation and transport the impacted materials to a suitable thermal desorption facility.

Over-excavation work was completed on October 11, 12, and 13, 1999. Initially, the concrete slab of the pump islands was demolished and removed from the property. After the concrete was removed, four test pits were completed in the area of the four former pumps. The purpose of the test pits were to observe and screen the soils in the area of identified contaminated soils. The test pit excavations advanced on the northwestern and southeastern portions of the pit generally disclosed gasoline-impacted soils from a depth of approximately 2 to 2½ feet bgs to 4 to 4½ feet bgs. The soils exposed in the pit advanced on the northeast corner of the pit only exhibited minor petroleum impacts and PID readings of up to 8 ppm. Soils encountered in a limited area on the southwest portion of the service island, at a depth of

approximately 3½ to 4 feet bgs, exhibited PID readings of up to 350 ppm. However, the significantly impacted soils in this area appeared very limited and approximately 3 to 4 tons of impacted material was removed from this location and stockpiled. One soil sample each was collected from a depth of approximately 4 to 4½ feet bgs from each location (samples SS-1 through SS-4). All of the samples exhibited gasoline-range TPH and BTEX concentrations that were below MTCA Method A cleanup levels. Samples SS-1, SS-2, and SS-3 did not exhibit detectable concentrations of total lead. However, sample SS-4 exhibited a total lead concentration of 425 ppm, which is in excess of the MTCA Method A cleanup level. Sample locations are depicted on Figure 4, Appendix B, and sample results are shown on Table 4, Appendix C.

Soil over-excavation activities were initiated on the southeast corner of the service island. In general, over-excavation was performed by removing the non-odorous over burden soils to a depth of approximately 2 feet below ground surface. The overburden soils were then reserved for later use as site backfill. Excavated soils deemed "clean" exhibited PID readings of 25 ppm or less, and deemed "contaminated" if they exhibited higher readings. An area of approximately 14 feet by 16 feet by 3½ to 4 feet deep was excavated. Two samples (SS-5 and SS-6) were collected from the excavation sidewalls. However, these samples exhibited gasoline-range TPH concentrations in excess of the MTCA Method A cleanup level. These areas were subsequently over-excavated and resampled. The subsequent samples (SS-11 and SS-12) did not exhibited TPH or BTEX concentrations in excess of MTCA Method A cleanup levels.

Over-excavation was subsequently completed on the northwest portion of the service island. The gasoline-impacted soils in this area were more extensive than anticipated, extending beyond the limits of the service island slab to the west. During excavation, several 2-inch steel product lines, as well as two one-inch steel electrical lines were encountered. Overexcavation of impacted soils was discontinued in this direction, due to the presence of the electrical lines, even though only a minor amount of impacted soils appeared to remain. The remaining impacted soils appeared to be in the immediate area of the service lines and electrical lines. The final excavation measured approximately 13 feet by 25 feet, with a depth of generally 3½ feet to 4½ feet. Soil samples SS-8 and SS-13, along the west and southwestern limits of the excavation, exhibited benzene concentrations of 5.9 ppm and 4 ppm, both of which were in excess of the MTCA Method A cleanup level, though the samples did not exhibit TPH concentrations in excess of the cleanup level. Soil sample SS-7, collected from the north side of the excavation, did not exhibit detectable concentrations of gasoline-range TPH or BTEX.

Excavated soils that were deemed impacted were excavated and directly loaded and hauled to TPS Technologies thermal treatment facility in Tacoma, Washington. A total of 100.47 tons of petroleum-impacted soil were excavated from the site and, loaded, transported to the facility for treatment. An approximate 20 cubic yard "clean" stockpile was used for backfill on the southeastern excavation. Two samples (SP-3 and SP-4) collected from the stockpile were composited and tested. The sample exhibited detectable concentrations of gasoline-range TPH and BTEX compound that were below MTCA Method A cleanup levels. The remaining portion of the excavation was backfilled with compacted gravelly sand from Lloyd's gravel pit in Federal Way, Washington. The area was then finished with a gravel base course and paved on October 14, 1999 with 2½ to 3 inches of asphalt-treated base (ATB).

5.7 Conclusions

Soil samples collected in all but the two areas on the site were in compliance with MTCA Method A cleanup levels;

- Soil samples collected from the northwestern limits of the service island excavation exhibited benzene concentrations that were in excess of the MTCA method A cleanup level. In addition, a soil sample collected from the 4-foot depth from the southwest corner of the service island exhibited a total lead concentration that was in excess of the MTCA Method A cleanup level.

- A soil sample previously collected from the 13-foot depth from well MW-3 on the southeast portion of the site exhibited diesel and motor oil-range TPH concentrations in excess of the MTCA Method A cleanup level.

The remedial excavation of the service island was discontinued due to the presence of shallow utilities in the area. In our opinion, approximately 10 tons of impacted soils remain in this vicinity. The elevated lead concentration may be due to the presence of debris within the fill soils, and may not be related to a petroleum release associated with the service islands. The heavy-end-impacted TPH soils on the southeastern portion of the site appeared to occur at a one to two foot-thick interval at depths of greater than 13 feet bgs. Also, risk-based EPH analysis indicated that based on the soil to groundwater pathway, the petroleum concentration observed in the soil sample would not impact groundwater above the MTCA Method A cleanup level of 1.0 mg/l for TPH. In addition, based upon the lack of an apparent on-site source, the assessed groundwater migration direction, and the former presence of a service station located offsite to the east (and hydrologically upgradient from) the subject site, it appears that these heavy-end hydrocarbons may have resulted from the release from an offsite source to the east (see Section 3.4.1). In our opinion, no additional active remedial effort is warranted for soils on these portions of the site, nor required to protect human health or the environment. As such, it is our belief that the site has met the requirements for a "No Further Action" status for soils for the previously reported incident for which a LUST No. was assigned.

6.0 GROUNDWATER INVESTIGATIONS

There here have been two groundwater investigations at the subject site prior to the current work by ADaPT:

- 1996 by Groundwater Technology, Inc. (GTI), and:
- 1998 by Flour Daniel GTI.

6.1 GTI 1996 Assessment

The GTI Assessment included advancing eight (8) Geoprobe explorations across the site. Groundwater seepage was encountered at depths ranging from 11½ feet to 12½ feet bgs. Groundwater samples were collected from five of the explorations by means of micropurge technology. Water samples collected from explorations GP-6 and GP-8, advanced on the northern portion of the site, did not exhibit detectable concentrations of gasoline through motor oil range TPH and BTEX compounds. Samples collected from explorations GP-1 and GP-2, advanced in the area of the gasoline USTs, exhibited benzene concentrations of that were in excess of the MTCA method A cleanup level. In addition, the sample collected from SB-1 exhibited a gasoline-range TPH concentration of 2,100 ppb. A water sample collected from exploration SB-5, advanced in the area of the 1918 vintage service station, did not exhibit detectable concentrations of diesel and motor oil-range TPH and BTEX compounds. Exploration locations are depicted on Figure 3, Appendix B, and analytical test results are summarized on Table 5, Appendix C.

6.2 Flour Daniel GTI Assessment

Flour Daniel GTI completed a subsurface assessment of the property in February and March, 1998. Their scope of work included advancing four soil borings to depths of approximately 20 feet bgs. Each boring was completed as a 4-inch I.D. PVC resource protection well. Two of the wells (MW-1 and MW-2) were installed in the vicinity of the 10,000 gallon gasoline USTs, one in the center of the service island (MW-4), and one on the southeastern portion of the parcel (MW-3). After completion, the wells were reportedly developed, and subsequently purged and sampled using standard bailing technique. In addition the well casings were surveyed relative to an arbitrary datum of 100 feet. Prior to sampling, groundwater depths measured on March 4, 1998. Groundwater depths ranged from 10.96 feet bgs (MW-2) to 12.53 (MW-3), with a preferred migration direction roughly to the west. The sample collected from well MW-1, located near the former 10,000 gallon gasoline USTs, exhibited a gasoline-range TPH concentration of 5,230 ppb, benzene of 10.2 ppb, ethylbenzene of 145 ppb, and xylenes of 502 ppb, all of which are in excess of the MTCA Method A cleanup level. This samples also exhibited a diesel-range TPH concentration of 553 ppb. The sample collected from well MW-2, located along the north side of the former gasoline USTs location, did not exhibit detectable concentrations of gasoline through motor oil-range TPH or BTEX. The sample collected from well MW-4, located in the center of the former service island, exhibited motor oil and diesel-range TPH concentrations of 564 ppb and 1,000 ppb, respectively. This sample did not exhibit detectable concentrations of gasoline-range TPH or BTEX. The sample collected from MW-3, located on the east side of the site, exhibited motor oil and diesel-range TPH concentrations of 3,510 ppb and 757 ppb, respectively. This sample did not exhibit detectable concentrations of gasoline-range TPH or BTEX concentrations. Exploration locations are depicted on Figure 3, Appendix B, and analytical test results are summarized on Table 6, Appendix C.

6.3 ADaPT 1999 Assessment

6.3.1 Geoprobe Assessment

The ADaPT Geoprobe assessment, completed on August 23, 1999, included advancing eleven Geoprobe explorations across the site. Groundwater seepage was encountered in the explorations at depths ranging from 10½ feet to 11½ feet bgs. Groundwater samples were collected from four (4) of the explorations by means of micropurge technology. Water samples collected from explorations GP-1 and GP-11, advanced on the southwestern portion of the site, did not exhibit detectable concentrations of gasoline range TPH and BTEX compounds. The sample collected from exploration GP-4, advanced approximately 30 feet to the northwest of MW-3, did not exhibit detectable concentrations of diesel and motor oil-range TPH. The sample collected from exploration GP-3, advanced approximately 30 feet to the west of well MW-4, exhibited a motor oil-range TPH concentration of 1,100 ppb. This sample did not exhibit a detectable concentration of diesel-range TPH. Exploration locations are depicted on Figure 3, Appendix B, and analytical test results are summarized on Table 5, Appendix C.

On September 10, 1999, ADaPT resurveyed the existing wells to an arbitrary datum of 100.00 feet. In addition, a well located by the espresso kiosk near the southeast corner of the property, was incorporated into the survey. This well, referred to here as well "MW-A", was well MW-1 from work performed by others (EPI) on the adjacent site to the east. Groundwater depths were also gaged at this time. Groundwater depths ranged from approximately 11.35 feet (MW-1) to 12.82 feet (MW-3) bgs, with an inferred migration direction to the west-southwest. The water table was again relatively flat, with a gradient of approximately 0.0009 Feet/foot. Fluid level measurements are summarized on Table 7, Appendix C, and groundwater gradient for this event is graphically depicted on Figure 6, Appendix B.

6.3.2 ORC Treatment

On September 10, 1999, wells MW-1, MW-3 , and MW-4 were treated with oxygen release compound (ORC®). This product was purchased from Regenesis, and, according to the manufacturer, is a patented form of magnesium peroxide (MgO_2), which releases oxygen slowly to the water. The hydratred compound is magnesium hydroxide ($Mg(OH)_2$). Dependant upon site factors, ORC releases oxygen to the subsurface for 6 months to one year. Supplying oxygen to the subsurface can augment aerobic biodegradation. According to the manufacturer, the product is not harmful to the aquifer.

Two 5-gallon buckets of the product were applied equally to the above-mentioned on-site wells. The product was blended into a thin mixture with de-ionized water and slowly poured into each of the treated wells. Each well was then surged with a surge block to force the mixture through the sand pack and into the aquifer. This was performed until the dosage of the product was placed into the wells. All of the wells were then surged again after approximately 30 to 45 minutes to further help force the mixture into the aquifer.

6.3.3 Groundwater Gauging and Sampling

On December 14, 1999, ADaPT measured fluid levels in all five wells and purged and sampled wells MW-1 through MW-4. The wells were purged and sampled using micropurge technology (See Appendix D for a description of this technique). Groundwater depths were also gaged at this time. Groundwater depths ranged from approximately 8.87 feet (MW-1) to 10.17 feet (MW-3) bgs, with an inferred migration direction to the west-southwest. The water table was again relatively flat, with a gradient of approximately 0.0007 ft/ft. Fluid level measurements are summarized on Table 7, Appendix C, and groundwater gradient for this event is graphically depicted on Figure 7, Appendix B.

The samples collected from wells MW-1, MW-2, MW-3, and MW-4 did not exhibit detectable concentrations of gasoline-range TPH and BTEX compounds. The samples collected from MW-3 and MW-4 exhibited diesel-range TPH concentrations of 1,680 ppb and 716 ppb, respectively, and neither well exhibited detectable concentrations of motor oil-range TPH. Analytical test results are summarized on Table 6, Appendix C.

6.4 Site Hydrogeological Conditions

Groundwater contours inferred from static groundwater water levels measured in site wells from September 10 and December 14, 1999 are depicted on Figures 6 and 7, Appendix B, respectively. A summary of groundwater levels measured in wells has been included in Table 7, Appendix C. A description of the lithologic characteristics of the unconfined aquifer material underlying the site was provided in Section 3.7, and consists of Holocene alluvial deposits, along with fill soils in the area of the former Black River Channel on the site. The assessed groundwater migration direction for three groundwater monitoring events at three different seasons was generally to the west, which was generally the former channel alignment as well as the alignment of the deep sewer lines. In our opinion, these site features may have an influence on groundwater migration direction. Based upon groundwater sampling results from Geoprobe explorations completed downgradient from the former gasoline USTs, it does not appear that a large release had occurred from the former gasoline UST system. Also, given the general flat nature of the groundwater table, it does not appear likely that gasoline-impacted groundwater has migrated beyond the property boundaries to the west.

6.5 Summary of Groundwater Conditions

Previous groundwater sampling in the vicinity of the former on-site gasoline USTs has indicated gasoline-range TPH and benzene concentrations in excess of the MTCA Method A cleanup level. Results of water samples collected from both Geoprobe explorations and installed groundwater monitoring wells indicated that the original area of groundwater impacts were limited in nature, and did not extend beyond the property boundary. Recent groundwater sampling of the formerly impacted well (well MW-1) did not

indicate detectable concentrations of gasoline-range TPH or BTEX concentrations. Based upon the work completed to date, we request that Ecology grant "No Further Action " status for this portion of the property.

A groundwater sample collected from well MW-3, and Geoprobe exploration GP-3, located on the southeastern portion of the site, exhibited heavy-end TPH concentrations that were in excess of the MTCA Method A cleanup level. Recent sampling of well MW-3 indicated reduced concentration of diesel and motor oil-range petroleum constituents. Based upon the results of our geophysical survey in the immediate area, no obvious on-site sources for these petroleum constituents were identified. Also, our groundwater assessment indicates that the groundwater migration direction on the property in generally toward the west. This information suggests that the contaminants on this portion of the site may be the result of off-site contaminant migration from the east. We therefore recommend that this portion of the property be granted "No Further Action" status. This contention is further supported by the elevated heavy-end TPH concentration contained in a water sample collected from an off-site well to the east the subject site (see Section 3.4.1 of this report).

The triangular-shaped area located at the on the southeastern portion of the property that includes the espresso kiosk was recently sold to Walker Subaru by Safeway. Reports reviewed by others (Environmental Partners, Inc.) indicated that soil and water samples collected from well MW-1 (Shown as "MW-A" on Figures 3, 6 and 7 of this report) exhibited gasoline-range TPH and BTEX concentrations in excess of MTCA Method A cleanup levels. During a recent site visit, we observed two additional wells installed on this portion of the property, as well as other new wells installed on the adjacent property. However, test results from these borings and wells were not made available for our review at this time. Future monitoring of these wells may yield valuable information with respect to ADaPT's conclusions concerning this portion of the subject site. *

7.0 Other Required Information

7.1 Regulatory/Records/Permits

No permits were specifically required for ADaPT's work completed at the site.

7.2 Chemical Storage, Management, & Handling Practices

A discussion of the number, capacity, and contents of the former USTs in use at the site was provided in Sections 3.2 and 3.3. To our knowledge, no UST systems remain at the site, exclusive of some remaining steel product lines associated with the former pump islands. Current site activities include periodically car washing. Generally, the effluent collects into a catch basin with an oil-water separator, which, inturn, is directed into the sanitary system. Only minor amounts of non-hazardous car washing compounds are currently stored on the premises.

7.3 Closure

This summary report of voluntary cleanup activities at the subject property was prepared in general accordance with the "Guidance on Preparing Independent Remedial Action Reports Under the Model Toxics Control Act" using information provided by Walker Subaru and employing generally accepted environmental engineering practices. On behalf of Walker Subaru, we request that Ecology issue a letter granting No Further Action for the subject site, under Chapter 70.105D RCW, based on the information summarized in this report. We ask that the environmental files be closed regarding this facility and that the LUST database be updated to reflect the new status.

Should you have any further questions regarding this report, or desire additional information, please do not hesitate to contact the undersigned and/or Walker Subaru.

Respectfully submitted,

ADaPT Engineering, Inc.

Charles C. Cacek, M.Sc.
Senior Project Manager

Daryl S. Petrarca, R.E.A.,
VP Environmental Services

REFERENCES

Environmental Associates, Inc. "Phase I Environmental Audit, Sound Subaru, 240/250 Rainier Avenue South, Renton, Washington." EAI Job No. JN 6057, dated March 5, 1996.

Environmental Partners, Inc., "Report for Phase II Investigation, 100 and 108 South 3rd Street, Renton, Washington." EPI Project No. 08219.0, dated August 22, 1996.

Environmental Partners, Inc., "Additional Groundwater Investigation, 100 and 106 South 3rd Street, Renton, Washington." EPI Project No. 08222.0, dated December 6, 1996.

Flour Daniel GTI, "Site Assessment Report", Sound Subaru 240/250 Rainier Avenue South, Renton, Washington." Project No. 103562, dated March 25, 1998.

Groundwater Technology, Inc. (GTI), "Phase 2 Environmental Site Assessment, 240/250 Rainier Avenue South, Renton, Washington." Project No. 020600266, dated May 1, 1996.

Washington State Department of Ecology Toxics Cleanup Program, "*Guidance for Remediation of Petroleum Contaminated Soils.*" April 1994.

Washington State Department of Ecology Toxics Cleanup Program, "Interim Interpretative and Policy Statement, Cleanup of Total Petroleum Hydrocarbons (TPH)." January 1997.

APPENDIX A

VOLUNTARY CLEANUP PROGRAM SITE SUMMARY

Voluntary Cleanup Program

Washington State - Department of Ecology - Toxics Cleanup Program

Site Summary

This Summary is a required component of your request for assistance under the Voluntary Cleanup Program

Which of the following apply?

[ ]	Requesting assistance on a planned cleanup
[ ]	Requesting assistance on an ongoing cleanup.
[X]	Requesting review of a completed cleanup.

Note: If you submitted your Request for Assistance (ECY 020-74) previously without a Site Summary (this form) or this is a revised Site Summary, Please provide this completed form to Ecology at least five (5) working days prior to the meeting/site visit/documentation review (whichever comes first).

A) Site Identification:

Name of Site: Walker Subaru Used Car Lot

Alternate Name(s) for Site: Sound Subaru

Street Address of Site: 250 Rainier Avenue South

City: Renton State: Washington Zip: 98055

County: King UBI Number:

Mailing Address (if different from above): Walker Subaru 720 Rainier Avenue South

City: Renton State: Washington Zip: 98055

Township T23N Range R5W Section 18 Quarter-Quarter NE of SW

If Known:

Latitude: Degree 47 Minute 48 Second

Longitude: Degree 122 Minute 13 Second

Method used to calculate Latitude and Longitude: Delorme Map

How large (in acres) is the site? <1

Please attach two maps to this form. **INCLUDED WITHIN PROVIDED REPORT**

1) An area map, showing general location of the site in relation to surrounding bodies of water, cities, highways, and streets. (Please mark site location.)
2) A site diagram showing surrounding cross-streets, labeled building outlines, sampling and well locations, etc.

B) Person/Organization Making Request for Assistance/Review:

Name: Charles Cacek

Firm: ADaPT Engineering, Inc.

Street Address: 800 Maynard Avenue South, Suite 403

City: Seattle State: WA Zip: 98134

Telephone Number: 206-654-7045 Extension:

Fax Number: 206-654-7048 e-mail address:

Which best describes your involvement with the site? (Check as many as apply.)

Current Owner ☐ Former Owner ☐ Potential Purchaser ☐
Current Operator ☐ Former Operator ☐ Other (specify) ☐
* Environmental Consultant for Walker Subaru (the current owner)
Attorney for
Insurance Carrier for
Other (specify) for

C) Release Information:

Date of Release (if known): Date of Discovery: reported to Ecology April 8, 1998
Drinking Water: Number of Drinking Water Supply Wells within 1/2 mile - none
Are there any drinking water systems affected? ☐ yes ☒ no
If yes, has alternate drinking water been provided? ☐ yes ☐ no
If Drinking Water systems are affected, are the systems public, private, or both?
Aquatics: Are there an creeks, streams, ponds, wetlands, or shorelands...
on or adjacent to the site? ☐ yes ☒ no
Within 1/4 mile of the site? ☐ yes ☒ no
Where are they located?
Are they impacted by contamination from the site? ☐ yes ☒ no

General Hazardous Substance Categories: Please complete the chart below. List the contaminants known or suspected at the site prior to cleanup, and mark the appropriate medium (i.e. soil) with: **C** (confirmed and above MTCA); **B** (confirmed but below MTCA); **S** (suspected); N/A (not-applicable); **O** (tested and not present); or **U** (unknown).

Contaminant	Class *(for office Use*	Affected Soil	Media: Ground-Water	Surface Water	Air	Sediment	Date of Release *(if known)*
Example: Lead		C	O	S	U	S	1967-82
1) TPH		C	C				
2) BTEX		C	C				
3) Lead		C					
4)							
5)							
6)							

D) Report Information of Assessment or Remediation Work Done to Date

Assessment:

Has site assessment work been done at this site? yes ☒ no ☐ In-progress ☐
If yes, when? 1996 to 1999. Were results reported to Ecology? yes ☒ no ☐ Date April 8, 1998
Describe: (list reports in "E" below)

Remediation:

Has any site cleanup work been done at the site? yes ☒ no ☐ in-progress ☐
If yes, please continue to answer the remaining questions in this section to the best of your ability.

When was the cleanup work done? Octobe to December, 1999
Were results reported to Ecology? yes ☐ no ☒ date
Describe: (list reports in "E" below)

Does contamination remain on-site after cleanup activities? yes ☒ no ☐
If yes, describe: (list reports in "E" below)

For each contaminant listed in ***Part C) Release Information (above)***, please describe the quantity of the contaminant (in pounds) which was removed or treated as a result of the cleanup activities:

Contaminant	Class *(for office Use*	Pounds of Contaminant: Incinerated	Washed	Removed	Treated	*Contained)*
Example: Lead		10	20	40	10	60
1) TPH/BTEX		100.47 tons				
2)						
3)						
4)						
5)						
6)						
7)						
8)						
9)						
10)						
11)						
12)						

As a result of the cleanup:
How many acres of land were returned to ***unrestricted*** use?
How many acres of land were returned to ***restricted*** use?
How many tons of contaminated soil was remediated or contained? 100.47 tons
How many gallons of contaminated soil was remediated or contained?
How many people are now at reduced risk as a result of the cleanup action?
How many pounds of potential pollution was prevented as a result of the cleanup action?

Methods/Treatments Used	Soil	Groundwater	Surface Water	Drinking Water	Air	Wastes
Method A	X	X				
Method B	X					
Method C						
Have these levels been met through the site ? Y or N	N	N				
Destruction or Detoxification						
Carbon Adsorption[1]	N/A					N/A
Biological Treatment					N/A	
Chemical Destruction						
Incineration	X	N/A	N/A	N/A		
[1]Carbon followed by regeneration: use of granular activated carbon followed by landfilling would be classified in these tables as volume reduction and off-site landfill						
Media Transfer						
Air stripping/Air Sparging	N/A					N/A
Aeration/Vapor Extraction		N/A	N/A	N/A	N/A	
Thermal Desorption	X	N/A	N/A	N/A		N/A
Immobilization						
Vitrification		N/A	N/A	N/A		
Solidification/Stabilization		N/A	N/A	N/A		
Reuse/Recycling[2]						
Specify						
[2]For example, reuse of free petroleum product recovered in a pump and treat system.						
Separation/Volume Reduction						
Solvent Extraction		N/A	N/A	N/A		
Soil Washington		N/A	N/A	N/A		
Physical Separation[3]						
[3]For example, oil/water separators.						
Land Disposal/Containment						
Containment or On-site Landfill			N/A			
Off-site Landfill		N/A	N/A	N/A		
Institutional Controls						
Specify						
Others						
Specify Treatment Method -- oxygen release compound (ORC)		X				

E) Documentation:

Please list titles of all site reports below. Include name of consulting firm and year completed. (If there is not enough room for the entire list, please attach additional page(s) as necessary.)

Title:	By:	Date
Phase I Site Assessment	Environmental Associates, Inc.	March 5, 1996
Phase 2 Site Assessment	Groundwater Technology, Inc.	May 1, 1996
Site Assessment Report	Flour Daniel GTI	March 25, 1998
Voluntary Cleanup Report (current report)	ADaPT Engineering, Inc.	March 1, 2000

Is additional information concerning the contaminants treated or removed, or cleanup or remediation methods used available in a data base? yes ☐ no ☒ If yes, what programming software is use?
Is a copy included for our use? yes ☐ no ☒

F) Property Type: Commercial ☒ Industrial ☐ Residential ☐ Other ☐ (Please specify)
Property currently being used? yes ☒ no ☐
Plans for change in use? yes ☐ no ☒ If yes, please specify:

G) Standard Industrial Classification (SIC) Codes:

List all that apply. If none apply, or if you don't know your SIC code, list activities conducted at the site (i.e. automotive repair and maintenance, construction equipment storage, etc.).

Used auto sales and exterior car washing; auto repairs and other maintenance are not performed on the premises.

H) Dangerous Waste Facilities:

Does the facility have a dangerous waste identification number? yes ☐ no ☒
If yes, what is the number? WAD

I) Tank Information:

Complete this table for ALL tanks, whether underground (UST) or aboveground (AST), including unregulated tanks.
(*Unleaded, leaded diesel, bunker-C, waste oil, heating oil, aviation fuel, other (identify))
(** Tank status: Left in Place, Removed, Closed in Place)

Tank ID	AST/UST	Size	Was Free Product encountered?		In Excavation	**Tank Status
			*Product	On GW		
	UST	10K gal	no	no		Removed 1983
	UST	10K gal	no	no		Removed 1983
	UST	10K gal	no	no		Removed 1983

J) Owner/Operator History
(Please photocopy and attach copies if additional owners and/or operators are known.)

Type (code) of Owner/Operator (for below):
Private **(1)** Municipal **(2)** County **(3)** Federal **(4)** State **(5)** Tribal **(6)** Mixed **(7)** Other **(8)** Unknown **(9)**
Public Entitle Acquisition via Bankruptcy **(11)**

1) Current Site Owner: Walker Subaru			Type:
Street Address: 720 Rainier Avenue South			
City: Seattle	State: WA	ZIP: 98055	
Contact Persons (if different than owner, above): Mr. Dale Walker			
Street Address:			
City:	State:	ZIP:	
Telephone Number: 425-226-2775	Extension:		
Fax Number:	e-mail address:		
Dates of Ownership: to			

2) Current Facility Operator:			Type:
Street Address:			
City:	State:	ZIP:	
Contact Persons (if different than owner, above):			
Street Address:			
City:	State:	ZIP:	
Telephone Number:	Extension:		
Fax Number:	e-mail address:		
Dates of Operation: to			

3) Former Site Owner:			Type:
Street Address:			
City:	State:	ZIP:	
Contact Persons (if different than owner, above):			
Street Address:			
City:	State:	ZIP:	
Telephone Number:	Extension:		
Fax Number:	e-mail address:		
Dates of Ownership: to			

4) Former Facility Operator:			Type:
Street Address:			
City:	State:	ZIP:	
Contact Persons (if different than owner, above):			
Street Address:			
City:	State:	ZIP:	
Telephone Number:	Extension:		
Fax Number:	e-mail address:		
Dates of Operation: to			

K) Other Involved Parties:
(Please photocopy and attach copies if additional parties are involved)

1) Environmental Consultant: Charles Cacek / Daryl Petrarca		
Representing:		
Firm: ADaPT Engineering		
Street Address: 800 Maynard Avenue South, Suite 403		
City: Seattle	State: WA	ZIP: 98134
Telephone Number: 206-654-7045	Extension:	
Fax Number: 206-654-7048	e-mail address:	

2) Site Control Person if other than Owner/Operator. (This must be a person who is on-site during normal working hours and is authorized and qualified to answer questions about the site, or a person who is available during normal business hours and has knowledge about the site and the remediations.		
Name:		
Relation to site/owner/operator:		
Firm:		
Street Address:		
City:	State:	ZIP:
Telephone Number:	Extension:	
Fax Number:	e-mail address:	
Dates of involvement with site:	to:	

3) Name:		
Relation to site/owner/operator:		
Firm:		
Street Address:		
City:	State:	ZIP:
Telephone Number:	Extension:	
Fax Number:	e-mail address:	
Dates of involvement with site:	to:	

4) Name:		
Relation to site/owner/operator:		
Firm:		
Street Address:		
City:	State:	ZIP:
Telephone Number:	Extension:	
Fax Number:	e-mail address:	
Dates of involvement with site:	to:	

APPENDIX B

FIGURES

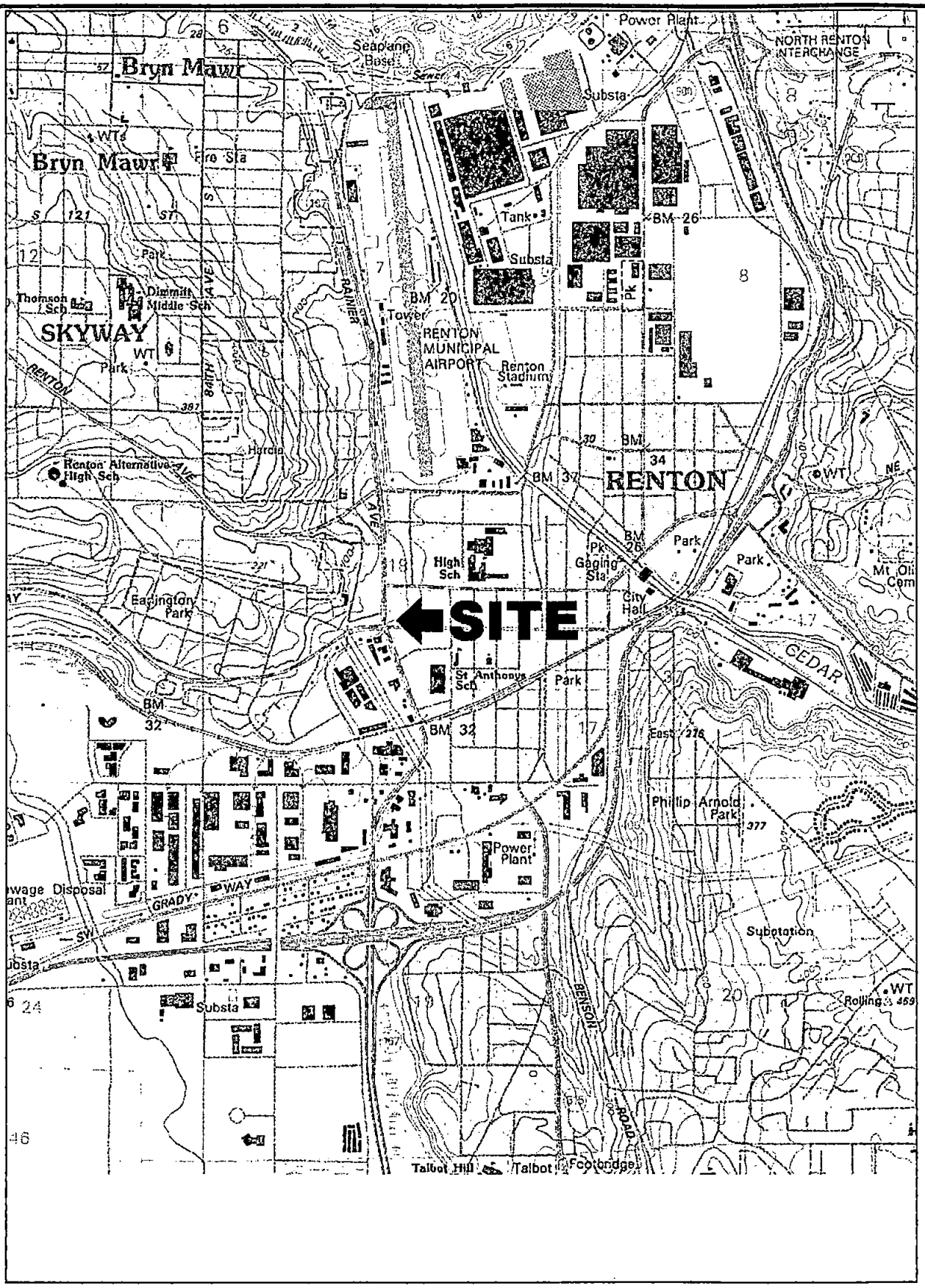

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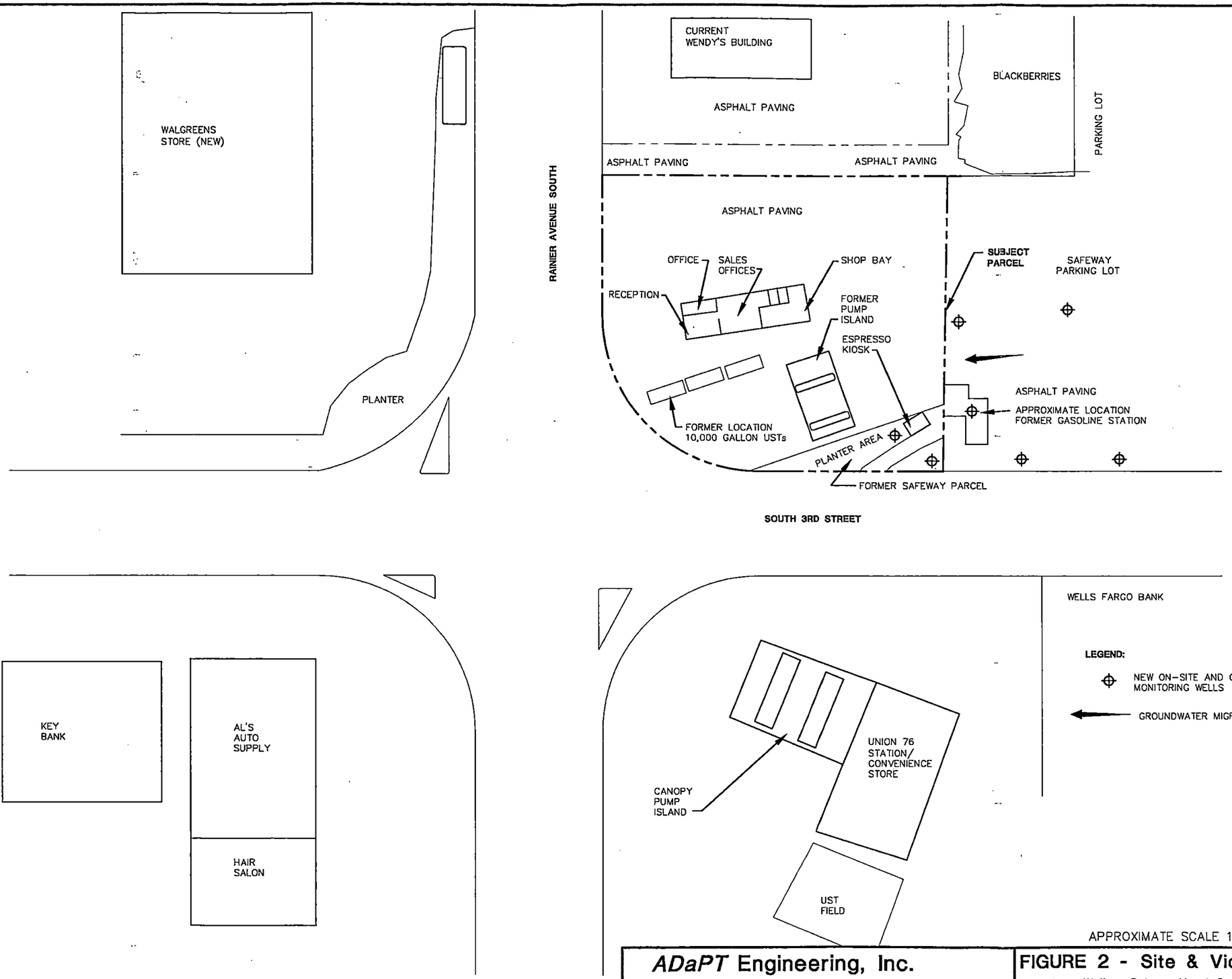
FIGURE 1 - Location/Topographic Map

Location : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Client : Walker Subaru

Date : 12/15/99 **Job # :** S-WA-99-2641



APPROXIMATE SCALE 1" = 50'

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FIGURE 2 - Site & Vicinity Map

Location : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Client : Walker Subaru

Date : 12/15/99 **Job # :** S-WA-99-2641

SB-7
30
ASPHALT PAVED
SB-8
SB-6
CB
CB
CONCRETE SLAB
CONCRETE SLAB
SALES BUILDING
31.82
RAINIER AVENUE SOUTH
31
CB
S
S
GP-4
D
INSET SEE FIGURE 4
MW-2
FORMER 10,000 GALLON GASOILNE VSTS
SB-5
D
S
GP-6
GP-7
MW-1
S
GP-2
SB-2
A
MANHOLE
SB-3
SB-4
MW-4
GP-1
SB-1
GP-10
GP-8
MANHOLE
D
FORMER SERVICE ISLAND
GP-9
GP-11
31
D
D
32
ESPRESSO STAND
LANDSCAPED AREA
DRIVEWAY
FORMER SAFEWAY PARCEL
A'
GP-3
MW-A
MW-3
GP-5
PROPERTY LINE
LEGEND:
GEOPROBE EXPLORATION No. AND LOCATION (GROUNDWATER TECH, 1996)
GEOPROBE EXPLORATION No. AND APPROXIMATE LOCATION (ADAPT, 1999)
MONITORING WELL No. AND APPROXIMATE LOCATION (GROUNDWATER TECHNOLGY, 1998)
MONITORING WELL No. AND APPROXIMATE LOCATION (EPI, 1996)
S STORMDRAIN LINE SHOWING FLOW DIRECTION
D SANITARY SEWER LINE SHOWING FLOW DIRECTION
CB CATCH BASIN
A A' GEOLOGIC CROSS SECTION A–A' (SEE FIGURE 5)
0 20 40
SCALE IN FEET
3RD AVENUE SOUTH
NOT TO SCALE

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Seattle, Washington 98134
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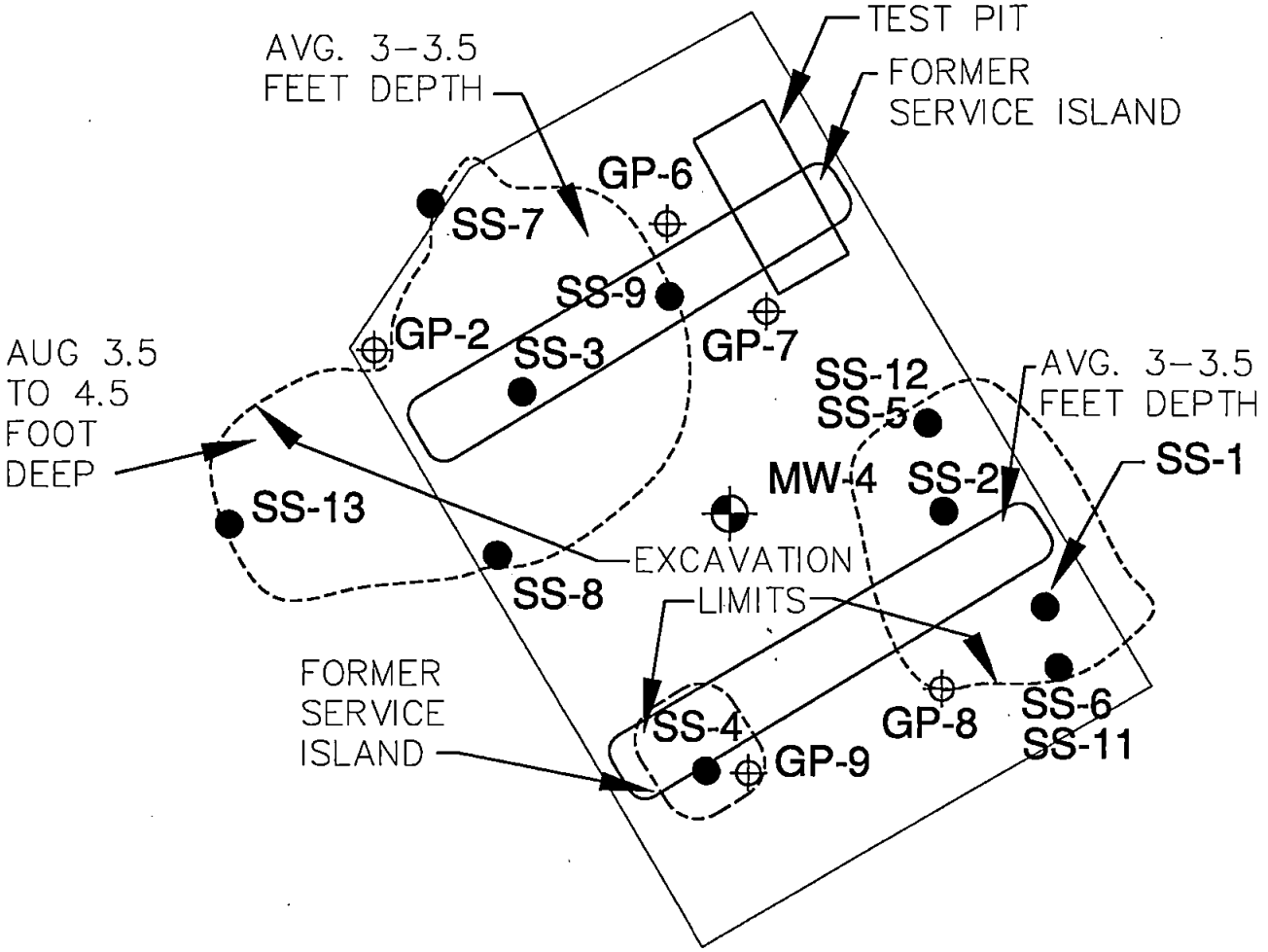
FIGURE 3 - Site Plan

Location : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055
Client : Walker Subaru
Date : 2/22/00 **Job # :** S–WA–99–2641



LEGEND:

- ⊕ GEOPROBE EXPLORATION No. & LOCATION
- ● SOIL SAMPLE No. & LOCATION
- ⊕ MONITORING WELL No. & LOCATION

NOT TO SCALE

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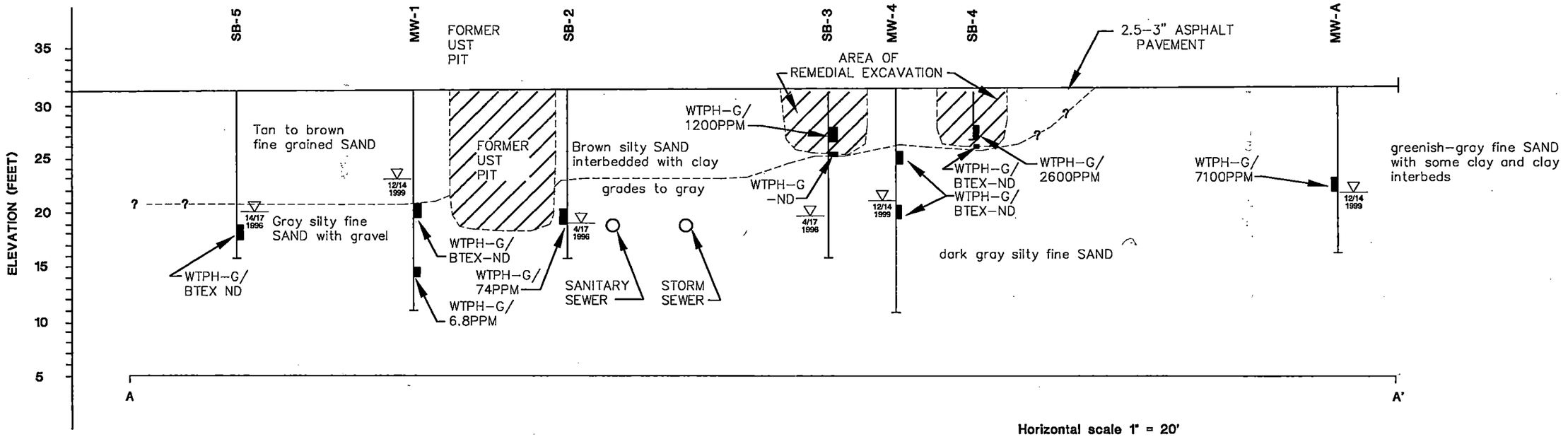
FIGURE 4 - Soil Excavation Map

Location : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Client : Walker Subaru

Date : 02/22/00 **Job # :** S-WA-99-2641



LEGEND:

14/17 1996 APPROXIMATE GROUNDWATER LEVEL AND DATE

Horizontal scale 1" = 20'
Vertical scale 1" = 10'

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FIG 5-Geologic Cross Section A-A'

Location : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055
Client : Walker Subaru
Date : 2/22/00 **Job # :** S–WA–99–2641

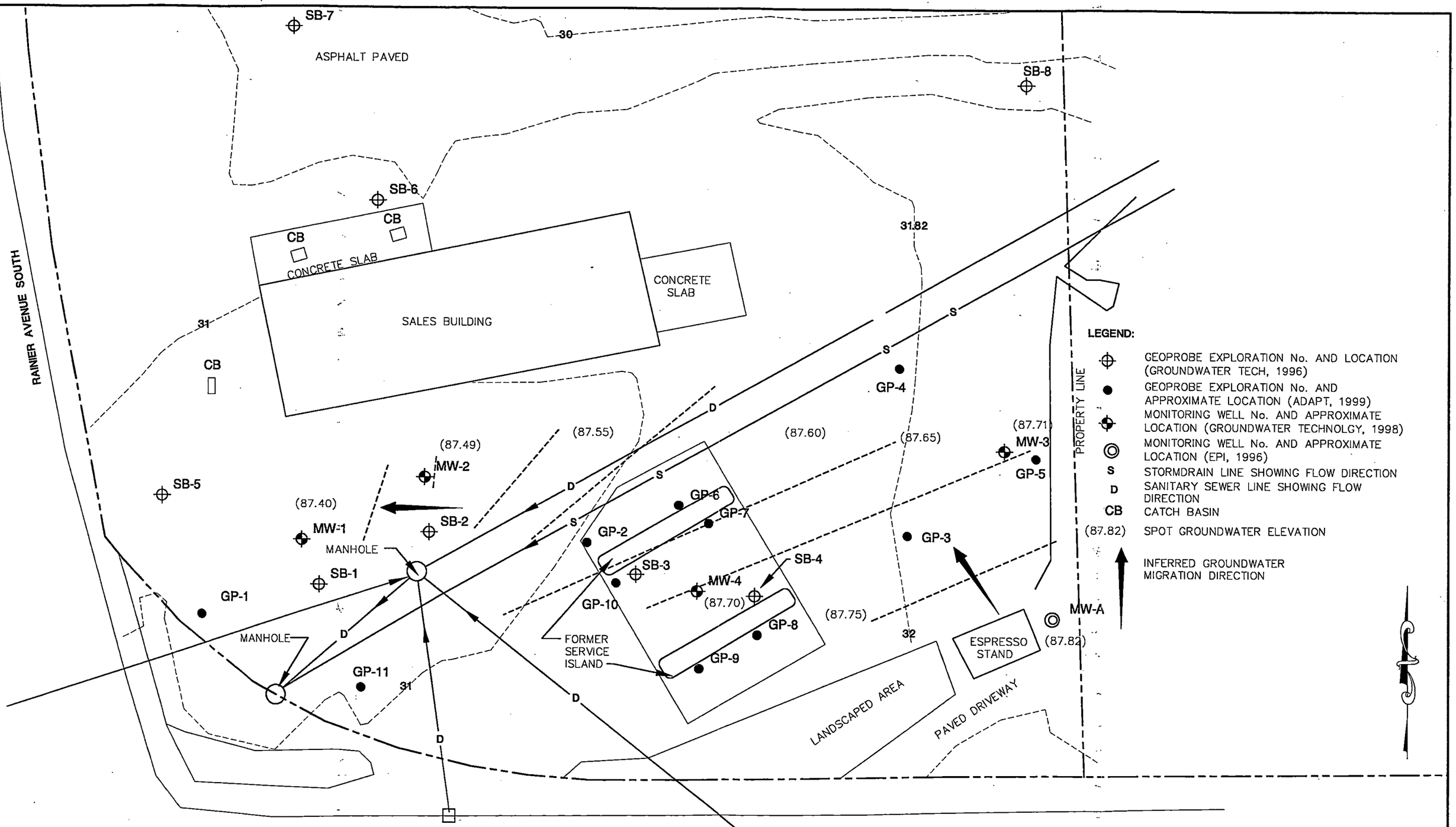

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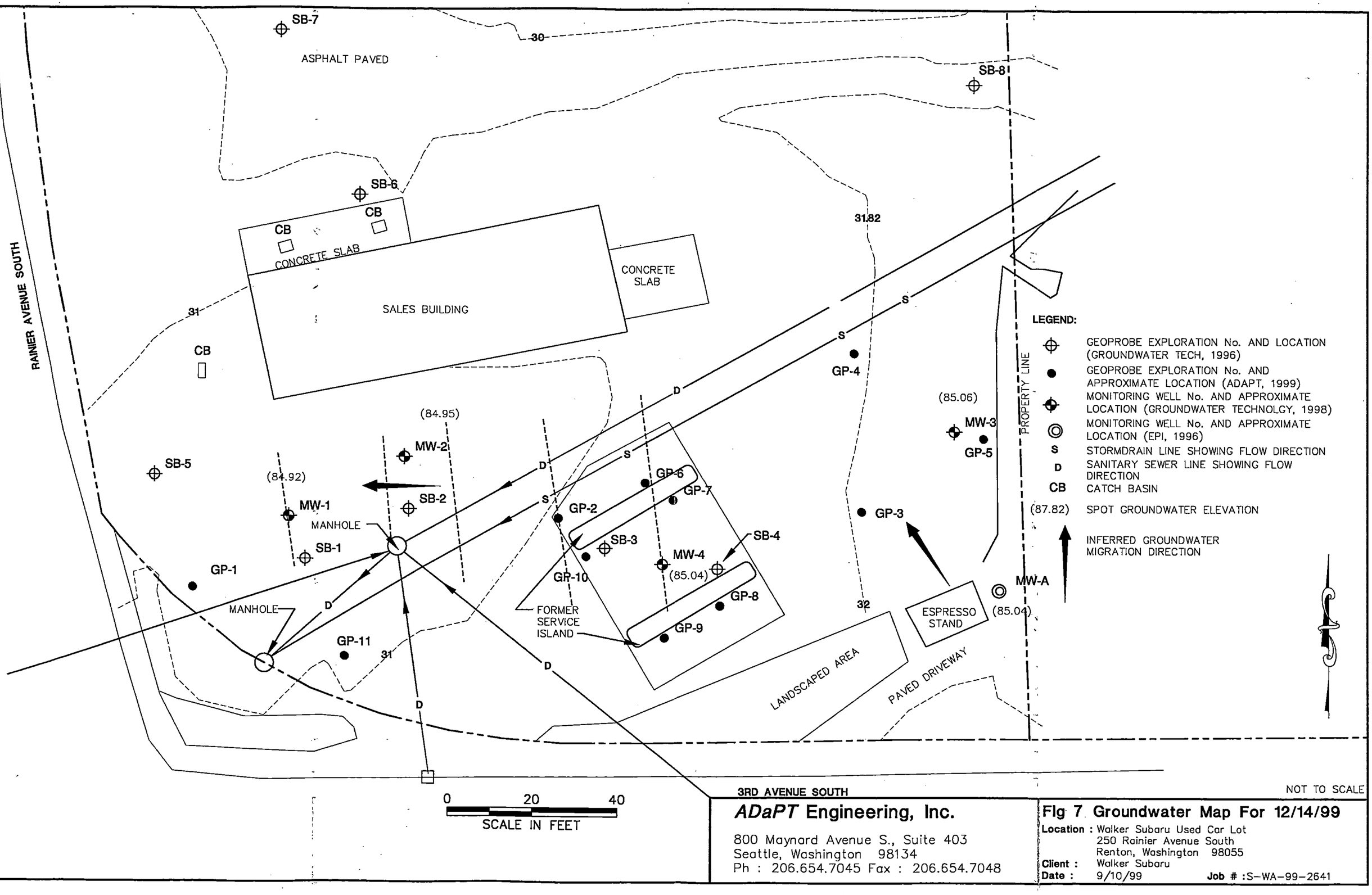
FIG 6 Groundwater Map 9/10/99

Location : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Client : Walker Subaru

Date : 12/15/99 **Job # :** S-WA-99-2641



***ADaPT* Engineering, Inc.**

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Seattle, Washington 98134
Ph : 206.654.7045 Fax : 206.654.7048

Fig 7 Groundwater Map For 12/14/99

Location : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Client : Walker Subaru

Date : 9/10/99 **Job # :**S-WA-99-2641

APPENDIX C

TABLES

TABLE 1: SUMMARY OF ANALYTICAL TEST RESULTS - SOIL
GEOPROBE EXPLORATIONS AND TEST BORINGS
SOUND SUBARU, 250 THIRD AVENUE SOUTH
RENTON, WASHINGTON
ADAPT JOB NO. S-WA99-2641

Sample Number	Depth (feet)	PID (ppm)	WTPH-DX (ppm)	WTPH-D (ppm)	WTPH-G (ppm)	B (ppm)	T (ppm)	E (ppm)	X (ppm)	Total Pb (ppm)
Groundwater Technology, samples collected on April 17, 1996										
SB1-B	10	NA	NT	NT	75	0.10	<0.5	0.15	3.4	NT
SB2-B	10	32	NT	NT	74	<0.05	0.1	0.24	0.37	NT
SB3-B	3	440	NT	NT	1,200	4.6	25	17	ND	NT
SB4-A	3	380	NT	NT	2,600	2.3	<0.4	31	100	NT
SB5-B	10	12	NT	NT	ND	ND	ND	ND	48	NT
SB6-A	5	6	NT	NT	<1.0	<0.05	<0.05	<0.05	<0.10	NT
SB7-A	7	10	NT	NT	2.1	<0.05	<0.05	<0.05	<0.10	NT
SB8-A	5	5	NT	60	NT	NT	NT	NT	NT	NT
Flour Daniel, samples collected on February 26 1998										
MW-1B	10-11.5	0	NT	NT	<5.0	<0.05	<0.05	<0.05	<0.10	27.4
MW-1C	15-16.5	0	NT	NT	<5.0	<0.05	<0.05	<0.05	<0.10	33.6
MW-2A	5 to 6	0	NT	NT	<5.0	<0.05	<0.05	<0.05	<0.10	77.7
MW-2B	10-11.5	0	NT	NT	<5.0	<0.05	<0.05	<0.05	<0.10	<25
MW-3B	10-11.5	0	NT	NT	<5.0	<0.05	<0.05	<0.05	<0.10	<25
MW-3C	15-16.5	0.1	4,420	884	30	<0.05	<0.05	<0.05	<0.10	232
MW-4A	5-6.5	0	NT	NT	<5.0	<0.05	<0.05	<0.05	<0.10	<25
MW-4B	10-11.5	0	NT	NT	<5.0	<0.05	<0.05	<0.05	<0.05	<25
ADaPT Engineering, samples collected on August 23, 1999										
GP-1/10-13	10 to 13	5.3	NT	NT	<30	<0.3	<0.3	<0.3	<0.3	NT
GP-6/3-4	3 to 4	5	NT	NT	<29	<0.29	<0.29	<0.29	<0.29	45
GP-7/3-4	3 to 4	3	NT	NT	<28	<0.28	<0.28	<0.28	<0.28	220
GP-8/4-4.5	4 to 4 1/2	2	NT	NT	<29	<0.29	<0.29	<0.29	<0.29	74
GP-9/3.5-4	3.5 to 4	1,030	NT	NT	1,800	0.97	0.34	12	51.1	240
GP-10/3-4	3 to 4	986	NT	NT	NT	NT	NT	NT	NT	36
GP-11/10-13	10 to 13	0	NT	NT	<28	<0.28	<0.28	<0.28	<0.28	<6.1
MTCA					100	0.5	40	20	20	250

Notes:
ppm: all concentrations reported in parts per million, which is equivalent to milligrams/kilogram
PID: Photoionization detector
WTPH-G: Washington Total Petroleum Hydrocarbons - Gasoline range
BTEX : benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020
MTCA: Model Toxics Control Act (Method A cleanup levels shown)
: exceeds MTCA cleanup level

TABLE 2 - VPH Calculations

Sample GP-10/3' to 4'

Worksheet:

Calculations for Using the TPH Interim Policy (Two Pathways: Human Health and Soil-to-Groundwater)*

1. As in "Calculations for Using the TPH Interim Policy" example put the soil concentrations in the "Soil Conc" column.
2. Examine the hazard index and risk for each land use you wish to use, for each chemical or fraction, and the "Conc. at the well."
3. Hazard quotients for individual substances or fractions cannot exceed 1.0
4. The hazard index (sum of the hazard quotients) cannot exceed 1.0
5. The risk for individual substance or fractions cannot exceed 1x10E-06 for residential land use or 1x10E-05 for commercial or industrial.
6. The risk for the total cannot exceed 1x10E-05 for any land use.
7. The "concentration at the well" cannot exceed 1.0 mg/L total TPH.
8. If any exceedence occurs in 3-7 above, then the cleanup level for TPH has not been met.

1	2	3	4	5	6	7	8	9	10	11	12	13
	Soil Conc.	RfD	OCPF	Residential		Commercial		Industrial		Mol. Frac.	Effect. Sol.	Conc.@ well
Compound	(mg/kg)	(mg/kg*day)	(kg*day/mg)	HQ	Risk	HQ	Risk	HQ	Risk	(percent)	(mg/l)	(mg/l)
Aliphatics												
EC 5 - 6	19									0.01	0.4	0.020
EC >6 - 8	350									0.21	0.89	0.044
EC >8 -10	100									0.05	0.015	0.0008
EC >10 -12	480									0.18	0.0047	0.00024
EC >12 -16												
EC >16 - 21												
Total aliphatic	949	0.06		0.20		0.05		0.00				
Aromatics												
EC >8 - 10	660									0.33	21.6	1.082
EC >10 - 12	370									0.17	4.3	0.215
EC >12 - 16	84									0.03	0.20	0.010
EC >16 - 21												
EC >21 - 35												
Total aromatic	1114	0.03										
Benzene	3.5		0.029		1.02E-07		2.54E-08		7.73E-09	0.00	4.8	0.24
c-PAHs	0		7.3		0.00E+00		0.00E+00		0.00E+00			
Ethylbenzene	28	0.10		0.00		0.00		0.00				
Toluene	6.1	0.20		0.00		0.00		0.00		0.00	2.1	0.104
Xylenes	146	2.00		0.00		0.00		0.00				
Total aromatic+B-E-X	944	0.03		0.39		0.10		0.01				
Total				0.60	1.02E-07	0.15	2.54E-08	0.01	7.73E-09	1.00000		1.7

*Note: This worksheet calculates Methods B and C soil cleanup levels for TPH for two pathways: "direct contact human health" and "soil-to-groundwater." Other possible pathways, such as vapor and surface water must be considered (see "Interim Policy"). In Addition to not exceeding a TPH level in the groundwater of 1.0 mg/L, there cannot be exceedance in the groundwater for individual substances such as the "BETX" compounds.

TABLE 3 - EPH Calculations

Sample GP-3/13'15'

Worksheet:												
Calculations for Using the TPH Interim Policy (Two Pathways: Human Health and Soil-to-Groundwater)*												
1. As in "Calculations for Using the TPH Interim Policy" example put the soil concentrations in the "Soil Conc" column.												
2. Examine the hazard index and risk for each land use you wish to use, for each chemical or fraction, and the "Conc. at the well."												
3. Hazard quotients for individual substances or fractions cannot exceed 1.0												
4. The hazard index (sum of the hazard quotients) cannot exceed 1.0												
5. The risk for individual substance or fractions cannot exceed 1x10E-06 for residential land use or 1x10E-05 for commercial or industrial.												
6. The risk for the total cannot exceed 1x10E-05 for any land use.												
7. The "concentration at the well" cannot exceed 1.0 mg/L total TPH.												
8. If any exceedence occurs in 3-7 above, then the cleanup level for TPH has not been met.												

1	2	3	4	5	6	7	8	9	10	11	12	13
	Soil Conc.	RfD	OCPF	Residential		Commercial		Industrial		Mol. Frac.	Effect. Sol.	Conc.@ well
Compound	(mg/kg)	(mg/kg*day)	(kg*day/mg)	HQ	Risk	HQ	Risk	HQ	Risk	(percent)	(mg/l)	(mg/l)
Aliphatics												
EC 5 - 6	0									0.00	0.0	0.000
EC >6 - 8	0									0.00	0.00	0.000
EC >8 -10	0									0.00	0.000	0.0000
EC >10 -12	0									0.00	0.0000	0.00000
EC >12 -16	14									0.05	0.00003	0.00000
EC >16 - 21	60									0.15	0.0000002	0.000000
Total aliphatic	74	0.06		0.02		0.00		0.00				
Aromatics												
EC >8 - 10	0									0.00	0.0	0.000
EC >10 - 12	0									0.00	0.0	0.000
EC >12 - 16	0									0.00	0.00	0.000
EC >16 - 21	36									0.13	0.066	0.0033
EC >21 - 35	236									0.67	0.00443	0.0002
Total aromatic	272	0.03										
Benzene	0		0.029		0.00E+00		0.00E+00		0.00E+00	0.00	0.0	0.00
c-PAHs	0		7.3		0.00E+00		0.00E+00		0.00E+00			
Ethylbenzene	0	0.10		0.00		0.00		0.00				
Toluene	0	0.20		0.00		0.00		0.00		0.00	0.0	0.000
Xylenes	0	2.00		0.00		0.00		0.00				
Total aromatic+B-E-X	272	0.03		0.11		0.03		0.00				
Total				0.13	0.00E+00	0.03	0.00E+00	0.00	0.00E+00	1.00000		0.0

*Note: This worksheet calculates Methods B and C soil cleanup levels for TPH for two pathways: "direct contact human health" and "soil-to-groundwater." Other possible pathways, such as vapor and surface water must be considered (see "Interim Policy"). In Addition to not exceeding a TPH level in the groundwater of 1.0 mg/L, there cannot be exceedance in the groundwater for individual substances such as the "BETX" compounds.

TABLE 4: SUMMARY OF ANALYTICAL TEST RESULTS - SOIL
PUMP ISLAND EXCAVATION
SOUND SUBARU, 250 THIRD AVENUE SOUTH
RENTON, WASHINGTON
ADAPT JOB NO. S-WA99-2641

Sample Number	Location	Depth (feet)	PID (ppm)	WTPH-G (ppm)	B (ppm)	T (ppm)	E (ppm)	X (ppm)	Total Pb (ppm)
SS-1	Southeast	4	1.2	<5.8	<0.058	<0.058	<0.058	<0.116	<5.8
SS-2	Southeast	4	8	<5	<0.058	<0.058	<0.058	<0.058	<5.6
SS-3	Northwest	4	4	<5.3	0.10	<0.53	<0.53	0.27	<5.3
SS-4	Southwest	3.5	20	48	0.13	<0.58	2.20	15.1	425
*SS-5	Southeast	3.5	88	330	<0.29	<0.29	2.00	4.21	NT
*SS-6	Southeast	3.5	49	250	<0.29	<0.29	1.50	2.6	NT
SS-7	Northwest	4	3	<30	<0.30	<0.30	<0.30	<0.60	NT
SS-8	Northwest	3	2.2	92	5.9	0.39	4.30	20.8	NT
SS-9	Northwest	3	4	NT	NT	NT	NT	NT	NT
*SS-10	Northwest	3	938	NT	NT	NT	NT	NT	NT
SS-11	Southeast	2.5	16.5	<6	<0.06	<0.06	0.06	0.36	NT
SS-12	Southeast	3.5	12.9	<6	0.071	<0.06	<0.06	<0.12	NT
SS-13	Northwest	2.5	67	100	4	0.15	2.80	14.5	NT
Soil Stockpile - used as backfill at site									
SP-3/SP-4				36	0.074	<0.057	0.63	3.91	NT
MTCA				100	0.5	40	20	20	250

Notes:
ppm: all concentrations reported in parts per million, which is equivalent to milligrams/kilogram
PID: Photoionization detector
WTPH-G: Washington Total Petroleum Hydrocarbons - Gasoline range
BTEX : benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020
MTCA: Model Toxics Control Act (Method A cleanup levels shown) .
: exceeds MTCA cleanup level

* = Areas susequently overexcavated and resampled

TABLE 5: SUMMARY OF ANALYTICAL TEST RESULTS - GROUNDWATER
GEOPROBE EXPLORATIONS
SOUND SUBARU
250 THIRD AVENUE SOUTH, SNOHOMISH, WASHINGTON
ADAPT JOB NO. S-WA99-2641

Well Number	WTPH-D Motor oil-range (ppb)	WTPH-D-X (Diesel-range) (ppb)	WTPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
Samples collected by Groundwater Technology on April 17, 1996							
SB-1	NT	NT	2,100	13	1.4	42	140
SB-3	NT	NT	560	4.3	8.1	8.6	54
SB-5	NT	NT	66	1.5	2.2	<0.5	2.9
SB-6	NT	<0.25	<50	<0.5	<0.5	<0.5	<1.0
SB-8	NT	NT	<50	<0.5	<0.5	<0.5	<1.0
Samples collected by ADaPT on August 23, 1999							
GP-1, W-1	NT	NT	<100	<1.0	<1.0	<1.0	<1.0
GP-3, W-1	1,100	<250	NT	NT	NT	NT	NT
GP-4, W-1	<500	<250	NT	NT	NT	NT	NT
GP-11,W-1	NT	NT	<100	<1	<1	<1	<1
MTCA	1,000	1,000	1,000	5	40	30	20

Notes

ppb:	All concentrations reported in parts per billion, which is equivalent to micrograms per liter (ug/l)
WTPH-G:	Washington Total Petroleum Hydrocarbons-Gasoline Range
BTEX:	Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020.
WTPH-D:	WTPH-Diesel Range
WTPH-D-X:	WTPH-Diesel Range extended (motor oil-range)
MTCA:	Model Toxics Control Act (Method A cleanup levels shown)

TABLE 6: SUMMARY OF ANALYTICAL TEST RESULTS - GROUNDWATER
GROUNDWATER MONITORING WELLS
SOUND SUBARU
250 THIRD AVENUE SOUTH, SNOHOMISH, WASHINGTON
ADAPT JOB NO. S-WA99-2641

Well Number	Date Collected	WTPH-DX (Motor oil-range) (ppb)	WTPH-D (Diesel-range) (ppb)	WTPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
MW-1	4-Mar-98	553	<750	5,230	10.2	6.06	145	502
	15-Dec-99	NT	NT	<50	<0.5	<0.5	<0.5	<1.0
MW-2	4-Mar-98	<250	<750	<50	<0.5	<1.0	<0.5	<1.0
	15-Dec-99	NT	NT	<50	<0.5	<0.5	<0.5	<1.0
MW-3	4-Mar-98	3,510	757	<50	<0.5	<0.5	<0.5	<1.0
	15-Dec-99	<750	1,680	<50	<0.5	<0.5	<0.5	<1.0
MW-4	4-Mar-98	1,000	564	<50	<0.5	<0.5	<0.5	<1.0
	15-Dec-99	<750	716	<50	<0.5	<0.5	<0.5	<1.0
MTCA		1,000	1,000	1,000	5	40	30	20

Notes

ppb:	All concentrations reported in parts per billion, which is equivalent to micrograms per liter (ug/l)
WTPH-G:	Washington Total Petroleum Hydrocarbons-Gasoline Range
BTEX:	Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020.
WTPH-D:	WTPH-Diesel Range
WTPH-D-X:	WTPH-Diesel Range extended (motor oil-range)
MTCA:	Model Toxics Control Act (Method A cleanup levels shown)

TABLE 7: SUMMARY OF FLUID LEVELS
WALKER SUBARU
250 THIRD AVENUE SOUTH, RENTON, WASHINGTON
ADAPT JOB NO. S-WA99-2641

Well No.	Top of Casing Elevation (feet)	Date Collected	Depth to Water (feet)	Groundwater Elevation (feet)
MW-1	*99.16	4-Mar-98	11.05	88.11
	**96.27	10-Sep-99	11.35	84.92
		14-Dec-99	8.87	87.40
MW-2	*99.14	4-Mar-98	10.96	88.18
	**96.24	10-Sep-99	11.29	84.95
		14-Dec-99	8.75	87.49
MW-3	*100.76	4-Mar-98	12.53	88.23
	**97.88	10-Sep-99	12.82	85.06
		14-Dec-99	10.17	87.71
MW-4	*100.08	4-Mar-98	11.87	88.21
	**97.22	10-Sep-99	12.18	85.04
		14-Dec-99	9.52	87.70
MW-A	**97.03	9-Oct-99	11.99	85.04
		14-Dec-99	9.21	87.82

Notes:
* = Casing elevation based on relative survey by Flour Daniel, utilizing a tempory benchmark of 100.00 feet.
** = Casing elevation based on relative survey by ADaPT on 9/10/99, utilizing a tempory benchmark of 100.00 feet.

APPENDIX D

ADAPT FIELD PROTOCOLS

ADAPT FIELD PROTOCOLS

ADAPT Field Screening Techniques/Sample Location Selection

The field screening techniques conducted by ADaPT and sample locations selected by ADAPT are discussed below.

Soil samples collected from the pump island excavations by ADaPT were, in general, collected in accordance with Ecology Guidance for Site Checks and Site Assessments for USTs (Publication #90-52. revised 10-92). ADaPT cannot comment on the sampling technique and protocols used by the other consultants who performed work at the site. Soil samples were collected from the sidewalls and base of each pump island excavation based on the Ecology criteria and field indications of petroleum hydrocarbon presence in the exposed soil. Field indications included visual and olfactory screening conducted within health and safety guidelines specified for the site and potential contaminants of concern. Field indications also included results of photoionization detector (PID) screening. PID screening was also completed on soil samples collected from borings completed ADAPT.

Geoprobe explorations completed at the site were positioned in areas deemed most likely to be affected by previous site activities. These areas included the locations of the former dispensers, gasoline USTs, and the southeastern portion of the site. Subsequent Geoprobe exploration locations were selected based on groundwater flow direction and other factors to delineate the lateral and vertical extent of petroleum hydrocarbon impacts.

SOIL SAMPLING

Soil sampling methods conducted by Groundwater Technology, Inc. and Flour Daniel GTI were not observed by ADaPT personnel and, therefore, ADaPT cannot comment on their methods. ADaPT soil sampling methods are described below.

Soil samples collected from excavations were obtained by digging soil from the desired locations using a backhoe. Samples were then collected from freshly exposed surfaces in the backhoe bucket using a clean steel spatula and placed directly into laboratory provided glass containers. The samples were collected from areas which were inferred to have not come into contact with the backhoe bucket.

Prior to initiation of Geoprobe exploration activities at each location, the downhole equipment (such as steel rods, casing and measuring equipment) were thoroughly cleaned using a high-pressure, hot-water washer. All cleaning water was contained for later disposal. Soil samples were collected during Geoprobe exploration procedures for lithologic description, field screening and laboratory analysis. Soil boring logs which present lithologic descriptions, field screen results and other relevant information are presented in Appendix B. Soil samples were collected during Geoprobe advancement utilizing direct drive sampling technology, which included advancing a 3-foot long, 2-inch diameter split spoon sampler. Prior to each sampling event, the split-barrel sampler was thoroughly cleaned using a mixture of non-phosphate detergent and a stiff brush. The sampler was then thoroughly rinsed with clean water and placed in a decontaminated location prior to use.

Soils recovered from the explorations were continuously monitored for lithologic description and PID, olfactory or visual indications of petroleum hydrocarbon presence. Soil samples were screened, on-site, using a hand held photoionization detector (PID) as described below.

Upon collection, each soil sample was evenly divided into field screen and laboratory splits. The laboratory split was immediately contained in labeled, laboratory provided, glass jars with teflon lined lids and placed in a cooler to maintain a storage and transport temperature of 4^0C. The field screen split was contained in a laboratory provided glass jar filled to approximately half of its total volume. The field screen jar was covered with aluminum foil secured to the top with the jar cap. The field split was then allowed to sit for approximately 15 minutes. The resulting headspace was screened by inserting a photoionization detector (PID) probe through the aluminum foil. The PID screen provided a qualitative assessment of total volatile organic constituent (VOC) concentration in the sample headspace and aided in selection of samples which were submitted for quantitative laboratory analysis. Soil samples were submitted under chain-of-custody documentation to the selected laboratory for quantitative analysis.

Approach Used to Select Number and Location of Samples for Analysis

Soil samples were selected for laboratory analysis on the basis of depth of collection, visual and olfactory observations, and PID field screening. Excavations sample locations were selected to characterize the distribution of contaminant concentrations at the limits of the excavation.

In general, samples were collected from areas which appeared most likely to be impacted based on field observations and field screening results, and were sampled in accordance with Ecology guidelines. In the absence of any field indications of petroleum constituents, samples collected from depths where contaminants were known to exist in other parts of the site were selected for laboratory testing. In soil borings performed by ADaPT, this was typically near the groundwater interface.

GROUNDWATER SAMPLING

Well Micro-Purging Procedures

Prior to sample collection, all wells were purged. Of approximately 3 well casing volumes of groundwater or until temperature, pH, conductivity, and dissolved oxygen readings do not vary by more than 10 percent for three consecutive readings whichever is less. Purging of the well(s) will be considered complete when these readings have stabilized within at least 10% of the two preceding measurement over a time period at least three minutes apart (USEPA,1992). If these readings are not being taken, ADaPT personnel will remove at least 3 well casing volumes of water to ensure that the amount of water removed was adequate. All readings and observations (turbidity, color, odors...) should be recorded in the field notebook/file and transposed in accordance with the documentation standards.

Purging of the wells was accomplished using a low flow peristaltic pump. A purge rates of approximately 0.2 liters/minute was utilized so that measurable drawdown of the well did not occur. All purge water was placed in containers as indicated in until it is properly characterized for disposal purposes. All equipment used for purging will be decontaminated accordingly to standard procedures. Purging of the wells was completed in order of increasing contamination to minimize the risk of cross contamination.

POST SAMPLING ACTIVITIES

Once the samples was collected, the sample bottles were then properly labeled, covering both the lid and the container so the seal has to be broken to open it. The sample were then placed in a plastic bag and preserved

at approximately 4°C in a cooler with ice. Associated paperwork (e.g. Chain of Custody forms, Sample Analysis Request forms) was then completed and stayed with the samples until they were delivered to the analytical testing laboratory. The samples are packaged in a manner that will allow the appropriate storage temperature to be maintained during shipment to the lab.

SURVEYING

In order to establish a groundwater gradient, or direction of groundwater migration, ADaPT completed a preliminary survey of the wells on the subject site. The survey included measuring relative elevations of the well casings for assessing the potentiometric gradient. When using the surveying equipment, ADaPT followed the procedures outlined below:

- Set up tripod and level. Adjust level until air bubble is in the center of the black circle. Rotate the level 90° -bubble should still be in the center of the circle. Rotate another 90° assure bubble is still in the center of the circle.

- Second person holding stadia rod should set the rod on the highest point of the well casing and mark this spot with a waterproof marker.

- Look through level viewfinder toward the stadia rod. Focus until numbers on rod are readable. Read the number on the engineering rod that coincides with the middle crosshair.

- When using the extendable engineering rod, the measurements can be read directly from the stadia rod and recorded in the field notebook for each well location. The markings on the rod are in Increments of 0.01 feet.

- Measurements are collected from the center of the well vault lid and from a marked location at the top of the casing.

- The first measurement is the obtained from the assigned datum location. All future measurements will be compared to the assigned datum.

- Proceed to obtain measurements from all wells with visual site of the assigned datum. If necessary the transit may need to be moved to obtain measurement from wells not visible from the first location.

- To move the transit identify a second (temporary) datum point. Obtain measurement of this point.

- Move transit to new location where additional wells can be measured. Obtain reading of second datum and primary datum and if possible one of the previous wells.

- Complete measurements of all wells and calculate the relative elevation using the following formula.

  Assign datum elevation + rod reading at assigned datum – rod reading at well = elevation

- Repeat calculation for vault elevation and top of casing elevation.

APPENDIX E

ADAPT GEOPROBE EXPLORATION LOGS

GEOPROBE LOG

ADaPT Engineering, Inc.
800 Maynard Avenue South, Suite 403
SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641

Boring No. : GP-1

Elevation Reference : N/A
Ground Surface Elevation : N/A

Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING
0								(Soil)
5	Moist to wet, brown, gravelly fine SAND, some silt, no odor (Fill)				0.0			
	Trace recovery				0.0			
10	Soft-loose, moist to wet, brown to gray, gravelly, silty, fine SAND (Fill)				2.0	▼	Temporary well screen installed at 10 to 14 feet depth	WTPH-G/BTEX
	Exploration terminated at 13 feet depth							
15								
20								
25								
30								

LEGEND

- 2-Inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- ▼ DATE — Static Water Level at Drilling
- ▽ DATE — Static Water Level
- ▼ — Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99

Drilling Completion Date : 8/23/99

Logged By : CCC

GEOPROBE LOG

ADaPT Engineering, Inc.
800 Maynard Avenue South, Suite 403
SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641

Boring No. : GP-2

Elevation Reference : N/A
Ground Surface Elevation : N/A

Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING (Soil)
0	Moist, brown, grading to grayish-black with green fine sandy, gravelly SILT, with some brick fragments (Fill)				0.0			
5	Moist to wet, brown to dark brown, silty fine SAND with some gravel and brick fragments				0.0			
	Exploration terminated at 8 feet depth							
10								
15								
20								
25								
30								

LEGEND

- 2-inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- DATE ▼ Static Water Level at Drilling
- DATE ▽ Static Water Level
- Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99

Drilling Completion Date : 8/23/99

Logged By : CCC

GEOPROBE LOG

ADaPT Engineering, Inc.
800 Maynard Avenue South, Suite 403
SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641 Boring No. : GP-3

Elevation Reference : N/A
Ground Surface Elevation : N/A
Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING (Soil)
0								
5	Moist, black with green, gravelly, silty, fine to medium SAND with minor brick and asphalt (Fill)				0.0			
	Moist, gray to dark gray, silty, gravelly fine SAND with minor brick fragments and silt-rich inclusions (Fill)				0.0			
10	Moist to saturated, gray to black, gravelly, silty fine SAND with silt-rich zones; 12.3'-13'- Petroleum odor				0.0			
	Grades to saturated dark gray to black, silty gravelly fine to coarse SAND over black silt with wood fragments, petroleum odor				3.3	▼	Temporary well screen installed at 12 to 16 feet depth	EPH
15	Exploration terminated at 15 feet depth				1.5			
20								
25								
30								

LEGEND

- 2-Inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- ▼ DATE — Static Water Level at Drilling
- ▽ DATE — Static Water Level
- ▼ — Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99 Drilling Completion Date : 8/23/99 Logged By : CCC

GEOPROBE LOG

ADaPT Engineering, Inc.
800 Maynard Avenue South, Suite 403
SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641

Boring No. : GP-4

Elevation Reference : N/A
Ground Surface Elevation : N/A

Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING (Soil)
0	3" Asphalt							
5	Moist, gray-black, silty fine SAND with brick fragments (Fill)				0.0			
					0.0			
10	Saturated, gray, silty, gravelly, fine to coarse SAND with brick fragments (Fill)				1.0			WTPH-DX
	Saturated, gray, fine sandy SILT - no odor					▼		
	Exploration terminated at 13 feet depth							
15								
20								
25								
30								

LEGEND

- 2-Inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- ▼ DATE — Static Water Level at Drilling
- ▽ DATE — Static Water Level
- Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99

Drilling Completion Date : 8/23/99

Logged By : CCC

GEOPROBE LOG

ADaPT Engineering, Inc.
800 Maynard Avenue South, Suite 403
SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641

Boring No. : GP-5

Elevation Reference : N/A
Ground Surface Elevation : N/A

Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING (Soil)
0	3" Asphalt							
5								
10	Minor recovery-moist to wet, gray-brown silty fine SAND, some gravel, with silt-rich zones and wood fragments, petroleum odor (Fill)				0.0	▽ 8/23 1999		
15					0.0			
	Exploration terminated at 16 feet depth							
20								
25								
30								

LEGEND

- 2-inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- ▼ DATE — Static Water Level at Drilling
- ▽ DATE — Static Water Level
- Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99

Drilling Completion Date : 8/23/99

Logged By : CCC

GEOPROBE LOG

ADaPT Engineering, Inc.
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SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641

Boring No. : GP-6

Elevation Reference : N/A
Ground Surface Elevation : N/A

Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING (Soil)
0	3" Asphalt							
	Moist, dark gray with brown, silty, gravelly fine SAND, varies to silt dominant; minor petroleum odor from 3 feet to 4 feet depth				15			WTPH-G/BTEX Total Pb
5	Moist, gray, silty, gravelly fine SAND, no odor (Fill)				0.0			
	Exploration terminated at 8 feet depth							
10								
15								
20								
25								
30								

LEGEND

- 2-inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- DATE ▼ Static Water Level at Drilling
- DATE ▽ Static Water Level
- Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99

Drilling Completion Date : 8/23/99

Logged By : CCC

GEOPROBE LOG

ADaPT Engineering, Inc.
800 Maynard Avenue South, Suite 403
SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641

Boring No. : GP-7

Elevation Reference : N/A
Ground Surface Elevation : N/A

Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING (Soil)
0	Concrete							
	Moist to damp, dark brown grading to dark gray, gravelly silty fine SAND to fine sandy SILT; minor petroleum odors at 3 to 4 feet depth				11			WTPH-G/BTEX Total Pb
					0			
5	Moist to damp, black, silty, gravelly fine SAND with silt-rich inclusions, no odor (Fill)				2			
					0			
	Exploration terminated at 8 feet depth							
10								
15								
20								
25								
30								

LEGEND

- 2-inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- DATE — Static Water Level at Drilling
- DATE — Static Water Level
- Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99

Drilling Completion Date : 8/23/99

Logged By : CCC

GEOPROBE LOG

ADaPT Engineering, Inc.
800 Maynard Avenue South, Suite 403
SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641

Boring No. : GP-8

Elevation Reference : N/A
Ground Surface Elevation : N/A

Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING (Soil)
0	Concrete							
	Moist to wet, gray / green / black, gravelly, silty fine SAND with organic-rich zones, wood and bricks fragments, trace petroleum odor				8			WTPH-G/BTEX
5								Total Pb
					6			
	Exploration terminated at 8 feet depth							
10								
15								
20								
25								
30								

LEGEND

- 2-inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- DATE ▼ Static Water Level at Drilling
- DATE ▽ Static Water Level
- Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99
Drilling Completion Date : 8/23/99
Logged By : CCC

GEOPROBE LOG

ADaPT Engineering, Inc.
800 Maynard Avenue South, Suite 403
SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641

Boring No. : GP-9

Elevation Reference : N/A
Ground Surface Elevation : N/A

Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING (Soil)
0	4" Concrete over							
	Moist, brown, silty, gravelly SAND over dark gray, gravelly fine sandy SILT with moderate petroleum odor over gray / green silty fine SAND, some gravel; grades to moist, gray / brown silty, gravelly fine SAND trace petroleum odor				140			WTPH-G/BTEX Total Pb
5					1.4			
	Exploration terminated at 8 feet depth							
10								
15								
20								
25								
30								

LEGEND

- 2-inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- DATE ▼ Static Water Level at Drilling
- DATE ▽ Static Water Level
- Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99

Drilling Completion Date : 8/23/99

Logged By : CCC

GEOPROBE LOG

ADaPT Engineering, Inc.
800 Maynard Avenue South, Suite 403
SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641

Boring No. : **GP-10**

Elevation Reference : N/A
Ground Surface Elevation : N/A

Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING (Soil)
0	Concrete							
	Moist, stained gray, gravelly, silty fine SAND, strong petroleum odor from 3 to 4 feet depth (Fill)				288			VPH Total Pb
5	Grades to gray / brown gravelly silty fine SAND, trace petroleum odor				20			
					7			
	Exploration terminated at 8 feet depth							
10								
15								
20								
25								
30								

LEGEND

- 2-Inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- DATE ▼ Static Water Level at Drilling
- DATE ▽ Static Water Level
- Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99
Drilling Completion Date : 8/23/99
Logged By : CCC

GEOPROBE LOG

ADaPT Engineering, Inc.
800 Maynard Avenue South, Suite 403
SEATTLE, WASHINGTON 98134
TEL: 206.654.7045 FAX: 206.654.7048

PROJECT : Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington 98055

Job Number : WA99-2641

Boring No. : GP-11

Elevation Reference : N/A
Ground Surface Elevation : N/A

Well Completed : N/A
Casing Elevation : N/A

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	OVM READING	GROUND WATER	AS-BUILT DESIGN	TESTING (Soil)
0	3" Asphalt							
	Moist, dark gray-brown, silty, gravelly fine to coarse SAND over tan / brown, silty fine SAND, no odor				0.0			
5	No recovery 7 to 10 feet				0.0			
10					0.0			
	Trace petroleum odor				3.3	▽ 8/23 1999	Temporary well screen installed at 12 to 16 feet depth	WTPH-G/BTEX, Total Pb
	Saturated gray, silty very fine SAND and broken gravel; no odor							
15					0.0			
	Exploration terminated at 16 feet depth							
20								
25								
30								

LEGEND

- 2-Inch O. D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- ▼ DATE — Static Water Level at Drilling
- ▽ DATE — Static Water Level
- Perched Groundwater
- Grab Sample
- WTPH-D Ext. 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date : 8/23/99

Drilling Completion Date : 8/23/99

Logged By : CCC

APPENDIX F

ANALYTICAL TEST CERTIFICATES AND CHROMATOGRAMS

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

October 14, 1999

Charles Cacek
Adapt Engineering
800 Maynard Ave. S., Ste. 403
Seattle, WA 98134

Re: Analytical Data for Project WA99-2641
Laboratory Reference No. 9910-068

Dear Charles:

Enclosed are the analytical results and associated quality control data for samples submitted on October 11, 1999.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: October 14, 1999
Samples Submitted: October 11, 1999
Lab Traveler: 10-068
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 10-12-99
Date Analyzed: 10-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**SS-1/4.0**			**SS-2/4.0**		
Lab ID:	10-068-01			10-068-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.058	**ND**		0.056
Toluene	**ND**		0.058	**ND**		0.056
Ethyl Benzene	**ND**		0.058	**ND**		0.056
m,p-Xylene	**ND**		0.058	**0.11**		0.056
o-Xylene	**ND**		0.058	**ND**		0.056
TPH-Gas	**ND**		5.8	**ND**		5.6
Surrogate Recovery:						
Fluorobenzene	90%			92%		

Date of Report: October 14, 1999
Samples Submitted: October 11, 1999
Lab Traveler: 10-068
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 10-12-99
Date Analyzed: 10-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**SS-3/4.0**			**SS-4/3.5'**		
Lab ID:	10-068-03			10-068-04		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**0.10**		0.053	**0.13**		0.058
Toluene	**ND**		0.053	**ND**		0.058
Ethyl Benzene	**ND**		0.053	**2.2**		0.058
m,p-Xylene	**0.21**		0.053	**15**		0.29
o-Xylene	**0.056**		0.053	**0.094**		0.058
TPH-Gas	**ND**		5.3	**48**		5.8
Surrogate Recovery:						
Fluorobenzene	69%			91%		

Date of Report: October 14, 1999
Samples Submitted: October 11, 1999
Lab Traveler: 10-068
Project: WA99-2641

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 10-12-99
Date Analyzed: 10-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB1012S1

	Result	Flags	PQL
Benzene	**ND**		0.050
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0

Surrogate Recovery:
Fluorobenzene 106%

Date of Report: October 14, 1999
Samples Submitted: October 11, 1999
Lab Traveler: 10-068
Project: WA99-2641

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 10-12-99
Date Analyzed: 10-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	10-068-03 **Original**	10-068-03 **Duplicate**	**RPD**	**Flags**
Benzene	**0.0959**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**0.201**	**0.0807**	86	C
o-Xylene	**0.0537**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	69%	89%		

Date of Report: October 14, 1999
Samples Submitted: October 11, 1999
Lab Traveler: 10-068
Project: WA99-2641

NWTPH-G/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 10-12-99
Date Analyzed: 10-12-99

Matrix: Soil
Units: mg/Kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	10-068-03 **MS**	Percent Recovery	10-068-03 **MSD**	Percent Recovery	RPD	FLAG
Benzene	**0.913**	**82**	**0.718**	**62**	24	W
Toluene	**0.924**	**92**	**0.969**	**97**	4.8	
Ethyl Benzene	**1.03**	**103**	**0.987**	**99**	4.0	
m,p-Xylene	**1.19**	**98**	**1.06**	**86**	11	
o-Xylene	**1.03**	**97**	**0.991**	**94**	3.7	

Surrogate Recovery:

Fluorobenzene	91%	95%

Date of Report: October 14, 1999
Samples Submitted: October 11, 1999
Lab Traveler: 10-068
Project: WA99-2641

TOTAL LEAD
EPA 6010B

Date Extracted:	10-12-99
Date Analyzed:	10-12-99
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
SS-1/4.0	10-068-01	**ND**	5.8
SS-2/4.0	10-068-02	**ND**	5.6
SS-3/4.0	10-068-03	**ND**	5.3
SS-4/3.5'	10-068-04	**420**	5.8

Date of Report: October 14, 1999
Samples Submitted: October 11, 1999
Lab Traveler: 10-068
Project: WA99-2641

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-12-99
Date Analyzed:	10-12-99
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1012S1

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: October 14, 1999
Samples Submitted: October 11, 1999
Lab Traveler: 10-068
Project: WA99-2641

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 10-12-99
Date Analyzed: 10-12-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-057-05

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**5.75**	**6.95**	19		5.0

Date of Report: October 14, 1999
Samples Submitted: October 11, 1999
Lab Traveler: 10-068
Project: WA99-2641

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 10-12-99
Date Analyzed: 10-12-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-057-05

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**222**	87	**223**	87	0.22	

Date of Report: October 14, 1999
Samples Submitted: October 11, 1999
Lab Traveler: 10-068
Project: WA99-2641

Date Analyzed: 10-12-99

% MOISTURE

Client ID	Lab ID	% Moisture
SS-1 / 4.0	10-068-01	14
SS-2 / 4.0	10-068-02	11
SS-3 / 4.0	10-068-03	5.0
SS-4 / 3.5'	10-068-04	14

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range, and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

Z -

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page _____ of _____

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Turnaround Request (in working days)

(Check One)

- ☒ Same Day ASAP
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☐ Standard (Hydrocarbon analyses: 5 days, All other analyses: 7 days)
- ☐ 10/12 (other)

Project Chemist:

Laboratory No. 10-068

Company: ADaPT Engineering, Inc.

Project No.: WA99-2641

Project Name: Sound Subaru

Project Manager: Charles Cacek

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	Total Lead by 6020						% Moisture
1	SS-1/4.0	10/11/99	2:30				X												X						X
2	SS-2/4.0	↓	2:40				X												X						X
3	SS-3/4.0		3:00				X												X						X
4	SS-4/3.5'	↓	3:15				X												X						X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
	10/11/99		10/11/99
FIRM ADaPT	TIME 5:40 PM	FIRM OSE	TIME 5:40
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS: 24 hr. or ASAP Turnaround!

Chromatographs with final report ☒

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

October 15, 1999

Charles Cacek
Adapt Engineering
800 Maynard Ave. S., Ste. 403
Seattle, WA 98134

Re: Analytical Data for Project WA99-2641
Laboratory Reference No. 9910-078

Dear Charles:

Enclosed are the analytical results and associated quality control data for samples submitted on October 12, 1999.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: October 15, 1999
Samples Submitted: October 12, 1999
Lab Traveler: 10-078
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 10-13-99
Date Analyzed: 10-13-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**SS-6**			**SS-7**		
Lab ID:	10-078-05			10-078-06		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.29	**ND**		0.30
Toluene	**ND**		0.29	**ND**		0.30
Ethyl Benzene	**1.5**		0.29	**ND**		0.30
m,p-Xylene	**2.6**		0.29	**ND**		0.30
o-Xylene	**ND**		0.29	**ND**		0.30
TPH-Gas	**250**		29	**ND**		30
Surrogate Recovery:						
Fluorobenzene	79%			62%		

Date of Report: October 15, 1999
Samples Submitted: October 12, 1999
Lab Traveler: 10-078
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 10-13-99
Date Analyzed: 10-13-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**SS-8**			**SS-5**		
Lab ID:	10-078-07			10-078-10		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**5.9**		0.30	**ND**		0.29
Toluene	**0.39**		0.30	**ND**		0.29
Ethyl Benzene	**4.3**		0.30	**2.0**		0.29
m,p-Xylene	**18**		0.30	**3.7**		0.29
o-Xylene	**2.8**		0.30	**0.51**		0.29
TPH-Gas	**92**		30	**330**		29
Surrogate Recovery:						
Fluorobenzene	95%			80%		

Date of Report: October 15, 1999
Samples Submitted: October 12, 1999
Lab Traveler: 10-078
Project: WA99-2641

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 10-13-99
Date Analyzed: 10-13-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB1013S1

	Result	Flags	PQL
Benzene	**ND**		0.050
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0

Surrogate Recovery:
Fluorobenzene 99%

Date of Report: October 15, 1999
Samples Submitted: October 12, 1999
Lab Traveler: 10-078
Project: WA99-2641

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 10-13-99
Date Analyzed: 10-13-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	10-082-06 Original	10-082-06 Duplicate	RPD	Flags
Benzene	ND	ND	NA	
Toluene	ND	ND	NA	
Ethyl Benzene	ND	ND	NA	
m,p-Xylene	ND	ND	NA	
o-Xylene	ND	ND	NA	
TPH-Gas	ND	ND	NA	
Surrogate Recovery:				
Fluorobenzene	91%	60%		

Date of Report: October 15, 1999
Samples Submitted: October 12, 1999
Lab Traveler: 10-078
Project: WA99-2641

NWTPH-G/BTEX
SB/SBD QUALITY CONTROL

Date Extracted: 10-13-99
Date Analyzed: 10-13-99

Matrix: Soil
Units: mg/Kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB1013S1 **Spike Blank**	Percent Recovery	SB1013S1 DUP **Duplicate**	Percent Recovery	RPD
Benzene	**0.983**	**98**	**1.01**	**101**	2.4
Toluene	**0.957**	**96**	**1.00**	**100**	4.1
Ethyl Benzene	**0.991**	**99**	**1.03**	**103**	3.6
m,p-Xylene	**0.894**	**89**	**1.03**	**103**	14
o-Xylene	**0.916**	**92**	**1.03**	**103**	11

Surrogate Recovery:

Fluorobenzene	98%		102%

Date of Report: October 15, 1999
Samples Submitted: October 12, 1999
Lab Traveler: 10-078
Project: WA99-2641

Date Analyzed: 10-13-99

% MOISTURE

Client ID	Lab ID	% Moisture
SS-6	10-078-05	13
SS-7	10-078-06	18
SS-8	10-078-07	17
SS-5	10-078-10	14

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range, and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

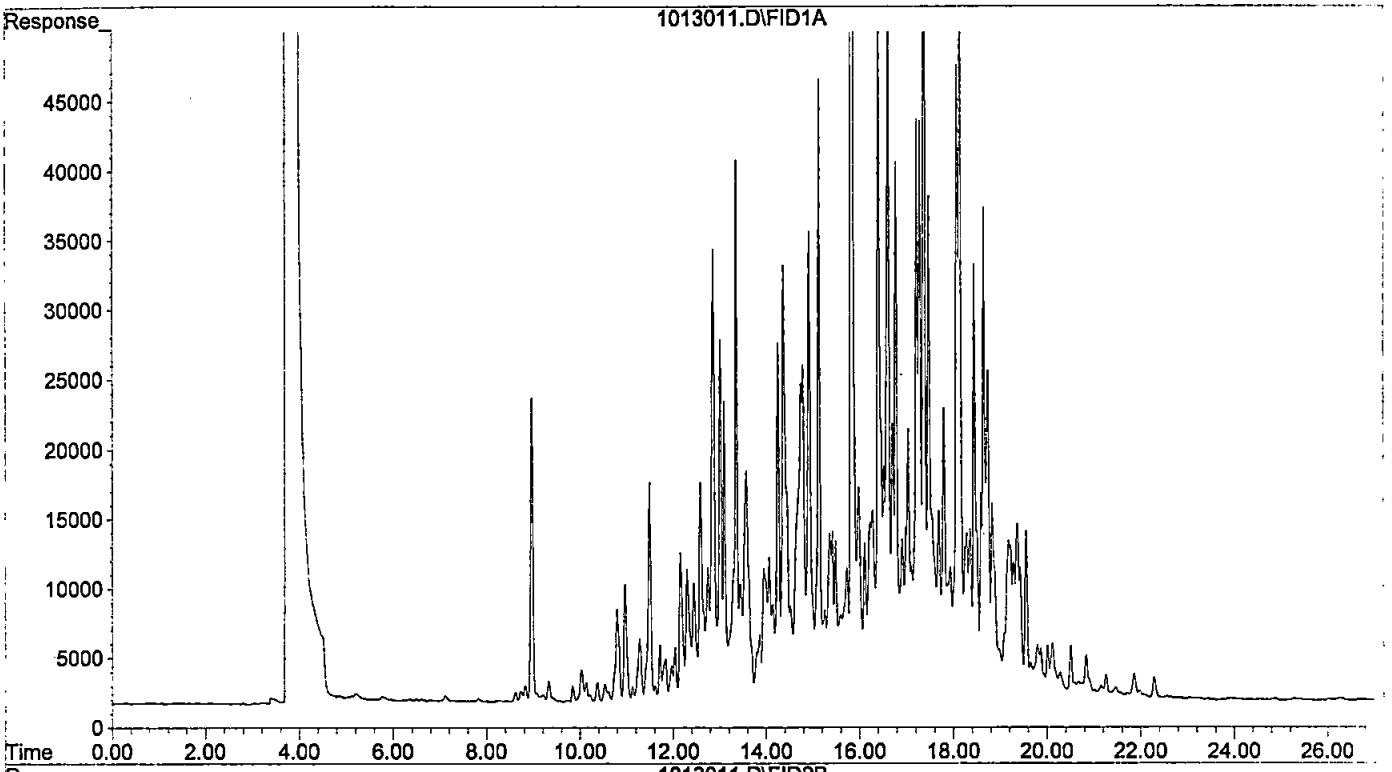
X - Sample extract treated with a silica gel cleanup procedure.

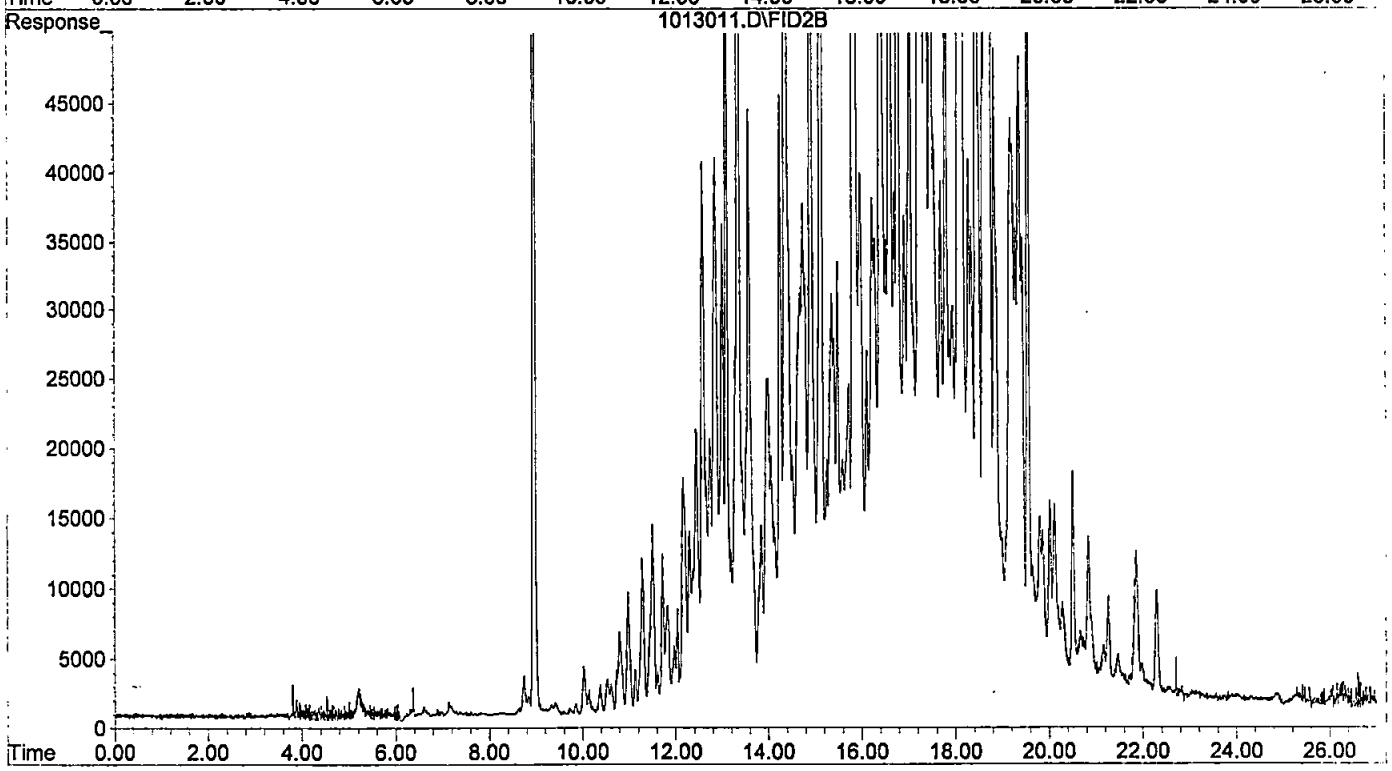
Y - Sample extract treated with an acid cleanup procedure.

Z -

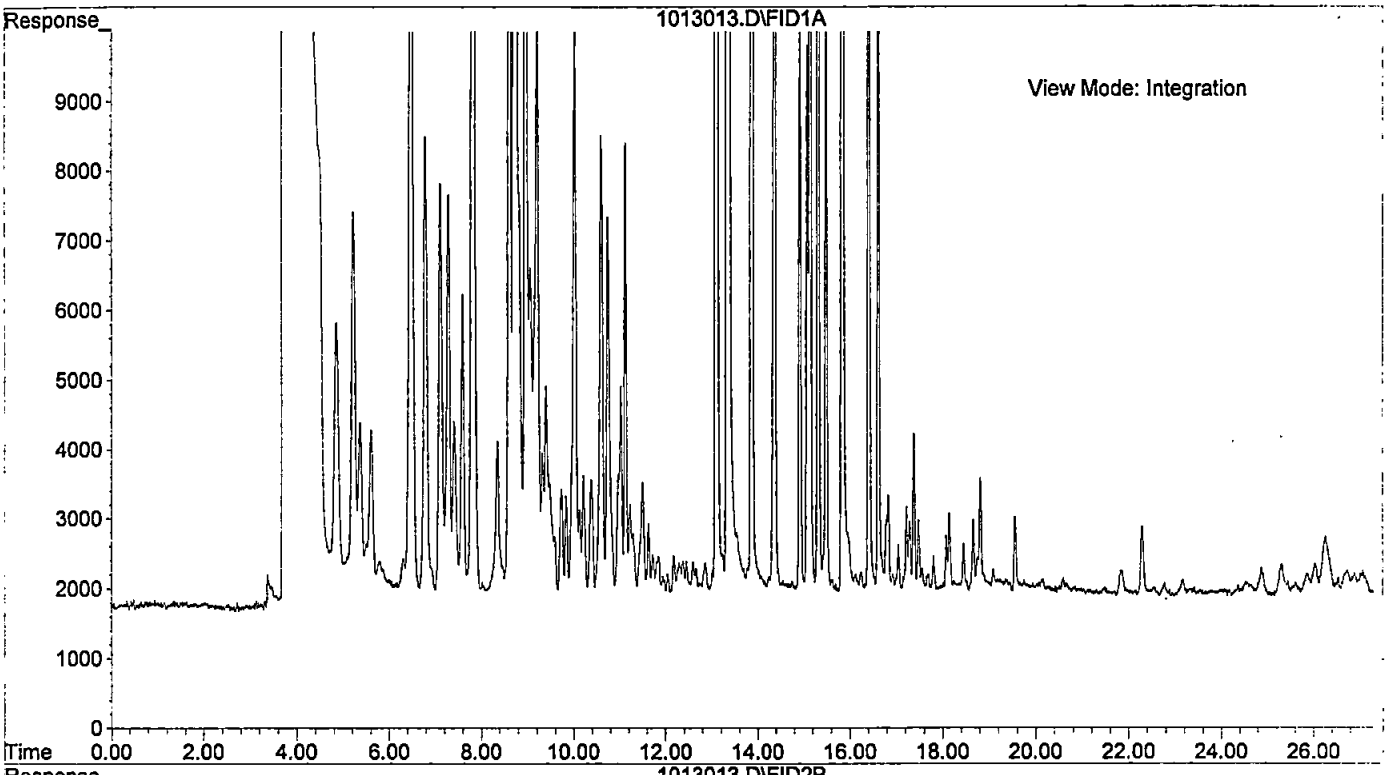
ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

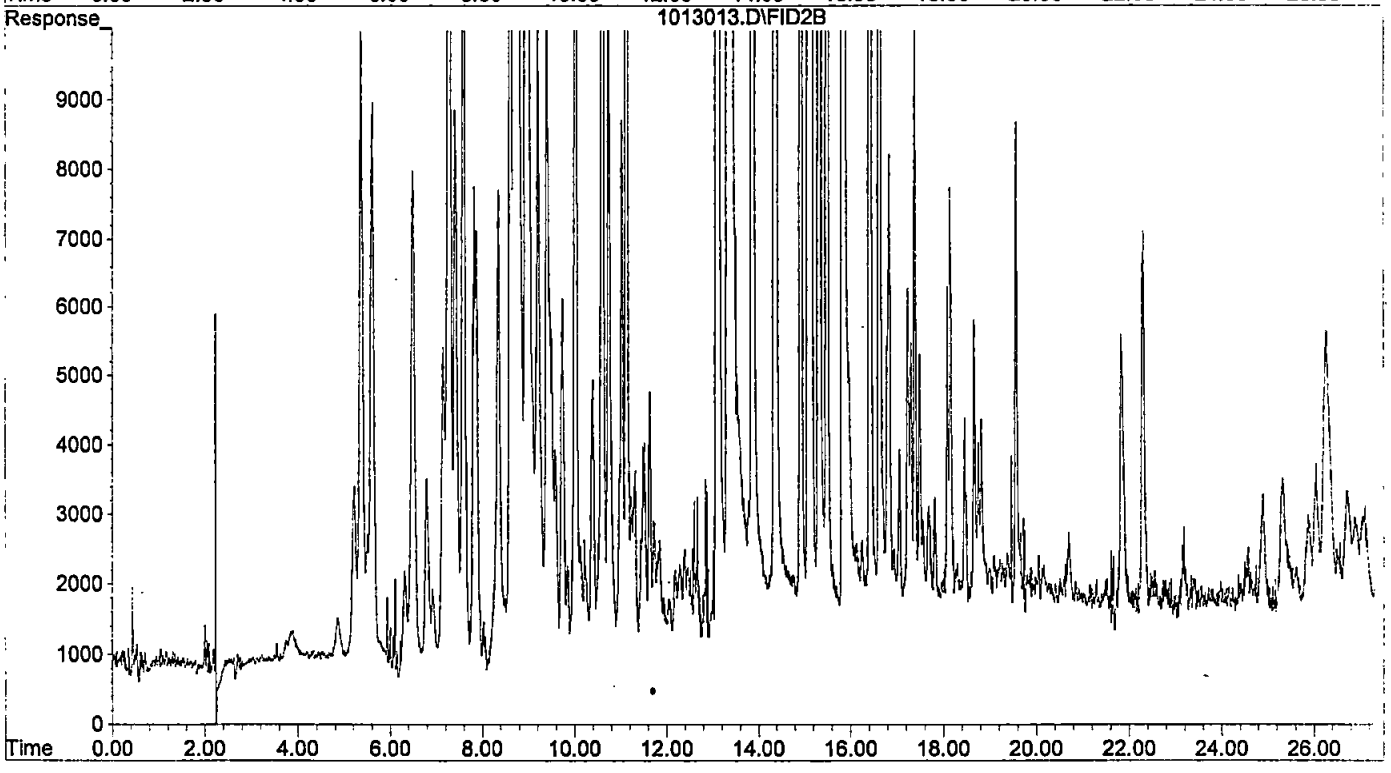
File : C:\HPCHEM\1\DATA\991013\1013011.D
Operator :
Acquired : 13 Oct 1999 17:42 using AcqMethod 0903BTEX.M
Instrument : GasBtex
Sample Name: 10-078-05 1:250
Misc Info :
Vial Number: 11



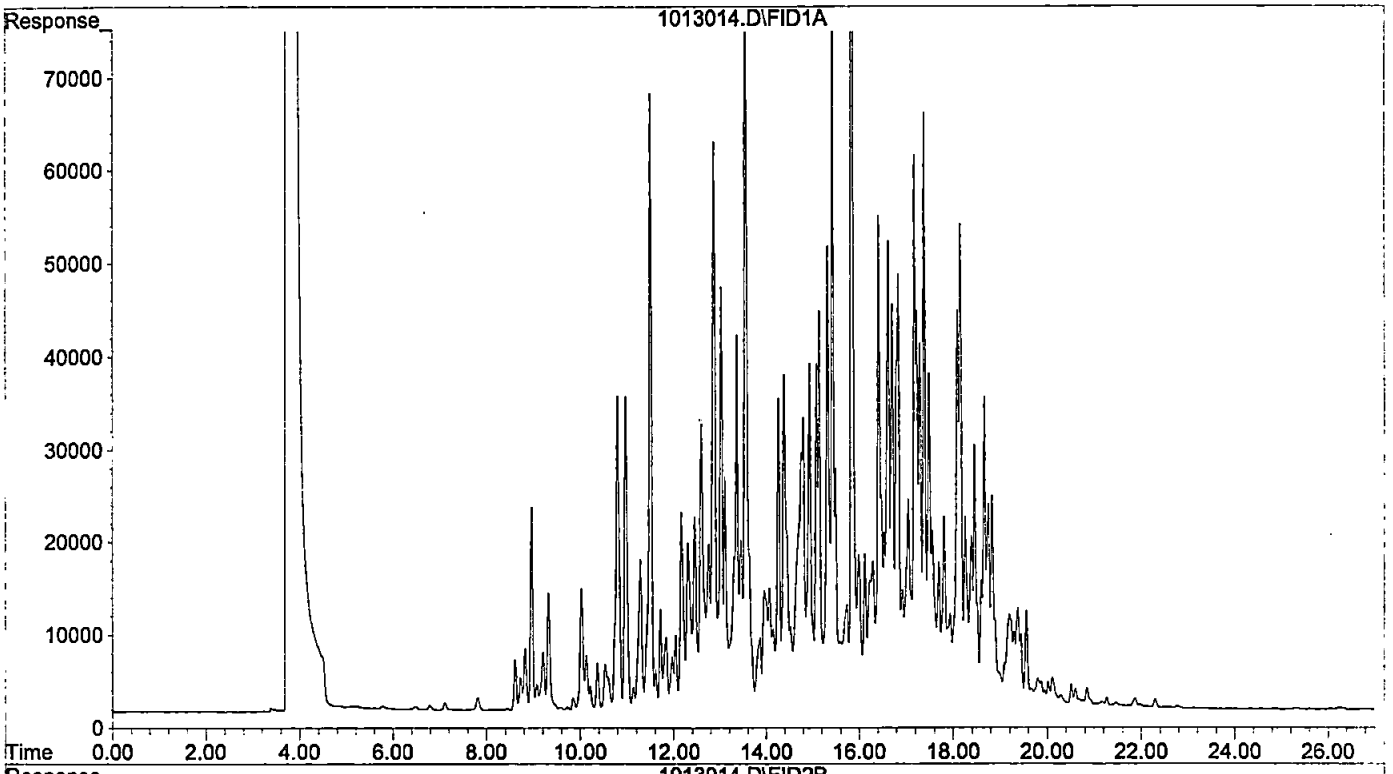


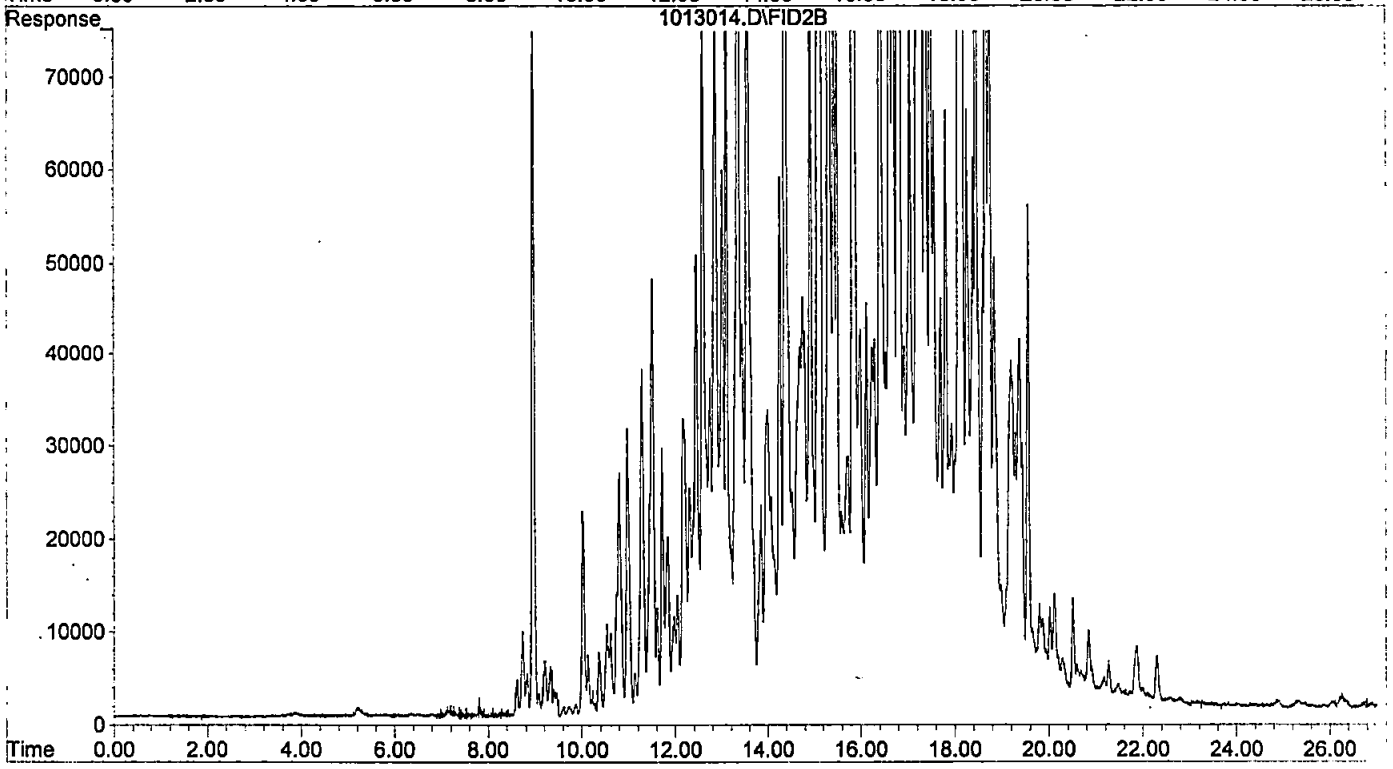
File : C:\HPCHEM\1\DATA\991013\1013013.D
Operator :
Acquired : 13 Oct 1999 18:49 using AcqMethod 0903BTEX.M
Instrument : GasBtex
Sample Name: 10-078-07 1:250
Misc Info :
Vial Number: 13





File : C:\HPCHEM\1\DATA\991013\1013014.D
Operator :
Acquired : 13 Oct 1999 19:23 using AcqMethod 0903BTEX.M
Instrument : GasBtex
Sample Name: 10-078-10 1:250
Misc Info :
Vial Number: 14





Chain of Custody

Page _____ of _____

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☐ Standard (Hydrocarbon analyses: 5 days, All other analyses: 7 days)
☐ _____ (other)

Company: ADaPT Engineering, Inc.
Project No.: WA99-2641
Project Name: Sound Subaru
Project Manager: Charles Carey

Project Chemist: DAB

Laboratory No.

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
-1	SP-1	11/12/99	11:30																
-2	SP-2		11:35																
-3	SP-3		3:30																
-4	SP-4		3:35																
-5	SS-6		2:52				X												X
-6	SS-7		3:00				X												X
-7	SS-8		3:05				X												X
-8	SS-9		3:12																
-9	SS-10		3:20																
-10	SS-5		2:45				X												X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
C.L.C.	11/12/99		11/12/99
FIRM: ADaPT	TIME: 5:55	FIRM: OnSite Env.	TIME: 5:55
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME

REVIEWED BY

DATE REVIEWED

COMMENTS:
24 hr rush -
Hold remaining samples for additional testing

Chromatographs with final report ☒

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OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

October 22, 1999

Charles Cacek
Adapt Engineering
800 Maynard Ave. S., Ste. 403
Seattle, WA 98134

Re: Analytical Data for Project WA99-2641
Laboratory Reference No. 9910-078

Dear Charles:

Enclosed are the analytical results and associated quality control data for samples submitted on October 12, 1999.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881 • Fax (425) 885-4603

Date of Report: October 22, 1999
Samples Submitted: October 12, 1999
Lab Traveler: 10-078
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 10-18-99
Date Analyzed: 10-18-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID: **SP-3/SP-4**
Lab ID: 10-078-03/04

	Result	Flags	PQL
Benzene	**0.074**		0.057
Toluene	**ND**		0.057
Ethyl Benzene	**0.63**		0.057
m,p-Xylene	**3.0**		0.057
o-Xylene	**0.91**		0.057
TPH-Gas	**36**		5.7
Surrogate Recovery:			
Fluorobenzene	91%		

Date of Report: October 22, 1999
Samples Submitted: October 12, 1999
Lab Traveler: 10-078
Project: WA99-2641

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 10-18-99
Date Analyzed: 10-18-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB1018S1

	Result	Flags	PQL
Benzene	ND		0.050
Toluene	ND		0.050
Ethyl Benzene	ND		0.050
m,p-Xylene	ND		0.050
o-Xylene	ND		0.050
TPH-Gas	ND		5.0

Surrogate Recovery:
Fluorobenzene 99%

Date of Report: October 22, 1999
Samples Submitted: October 12, 1999
Lab Traveler: 10-078
Project: WA99-2641

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 10-18-99
Date Analyzed: 10-18-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	10-107-01 **Original**	10-107-01 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**0.0535**	**0.0580**	8.1	
m,p-Xylene	**0.244**	**0.265**	8.1	
o-Xylene	**0.0545**	**0.0550**	0.91	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	79%	86%		

Date of Report: October 22, 1999
Samples Submitted: October 12, 1999
Lab Traveler: 10-078
Project: WA99-2641

NWTPH-G/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 10-18-99
Date Analyzed: 10-18-99

Matrix: Soil
Units: mg/Kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB1018S1 **SB**	Percent Recovery	SB1018S1 **SBD**	Percent Recovery	RPD
Benzene	**0.960**	**96**	**0.935**	**94**	2.6
Toluene	**0.985**	**99**	**0.825**	**83**	18
Ethyl Benzene	**0.920**	**92**	**0.930**	**93**	1.1
m,p-Xylene	**1.00**	**100**	**0.895**	**90**	11
o-Xylene	**1.00**	**100**	**0.840**	**84**	17

Surrogate Recovery:

Fluorobenzene	101%	95%

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range, and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

Z -

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page _____ of _____

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☐ Standard (Hydrocarbon analyses: 5 days, All other analyses: 7 days)
☐ _____ (other)

Project Chemist: DAB

Laboratory No. 10 - 078

Company: ADaPT Engineering, Inc.
Project No.: WA99 - 2641
Project Name: Sound Subaru
Project Manager: Charles Caseo

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	No. Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
-1	SP-1	11/12/99	11:30																
-2	SP-2		11:35																
-3	SP-3		3:30				X												
-4	SP-4		3:35																
-5	SS-6		2:52				X												X
-6	SS-7		3:00				X												X
-7	SS-8		3:05				X												X
-8	SS-9		3:12																
-9	SS-10	↓	3:20																
-10	SS-5	↓	2:45				X												X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Charles C. Caseo	11/12/99	[signature]	11/12/99
FIRM ADaPT	TIME 5:55	FIRM OnSite Env.	TIME 5:55
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:
24 hr rush -
Hold remaining samples for additional testing
X - Added 10/15/99 - DB

Chromatographs with final report X

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OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

October 26, 1999

Charles Cacek
Adapt Engineering
800 Maynard Ave. S., Ste. 403
Seattle, WA 98134

Re: Analytical Data for Project WA99-2641
Laboratory Reference No. 9910-107

Dear Charles:

Enclosed are the analytical results and associated quality control data for samples submitted on October 15, 1999.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: October 26, 1999
Samples Submitted: October 15, 1999
Lab Traveler: 10-107
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 10-18-99
Date Analyzed: 10-18-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**SS-11/2.5'**			**SS-12/3.5'**		
Lab ID:	10-107-01			10-107-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.060	**0.071**		0.059
Toluene	**ND**		0.060	**ND**		0.059
Ethyl Benzene	**0.064**		0.060	**ND**		0.059
m,p-Xylene	**0.29**		0.060	**ND**		0.059
o-Xylene	**0.065**		0.060	**ND**		0.059
TPH-Gas	**ND**		6.0	**ND**		5.9
Surrogate Recovery:						
Fluorobenzene	79%			87%		

Date of Report: October 26, 1999
Samples Submitted: October 15, 1999
Lab Traveler: 10-107
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 10-18-99
Date Analyzed: 10-18-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID: **SS-13/2.5'**
Lab ID: 10-107-03

	Result	Flags	PQL
Benzene	**4.0**		0.057
Toluene	**0.15**		0.057
Ethyl Benzene	**2.8**		0.057
m,p-Xylene	**9.8**		0.057
o-Xylene	**4.7**		0.057
TPH-Gas	**100**		5.7

Surrogate Recovery:
Fluorobenzene 86%

Date of Report: October 26, 1999
Samples Submitted: October 15, 1999
Lab Traveler: 10-107
Project: WA99-2641

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 10-18-99
Date Analyzed: 10-18-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB1018S1

	Result	Flags	PQL
Benzene	ND		0.050
Toluene	ND		0.050
Ethyl Benzene	ND		0.050
m,p-Xylene	ND		0.050
o-Xylene	ND		0.050
TPH-Gas	ND		5.0

Surrogate Recovery:
Fluorobenzene 99%

Date of Report: October 26, 1999
Samples Submitted: October 15, 1999
Lab Traveler: 10-107
Project: WA99-2641

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 10-18-99
Date Analyzed: 10-18-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	10-107-01 **Original**	10-107-01 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**0.0535**	**0.0580**	8.1	
m,p-Xylene	**0.244**	**0.265**	8.1	
o-Xylene	**0.0545**	**0.0550**	0.91	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	79%	86%		

Date of Report: October 26, 1999
Samples Submitted: October 15, 1999
Lab Traveler: 10-107
Project: WA99-2641

NWTPH-G/BTEX
SB/SBD QUALITY CONTROL

Date Extracted: 10-18-99
Date Analyzed: 10-18-99

Matrix: Soil
Units: mg/Kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB1018S1 **SB**	Percent Recovery	SB1018S1 **SBD**	Percent Recovery	RPD
Benzene	**0.960**	**96**	**0.935**	**94**	2.6
Toluene	**0.985**	**99**	**0.825**	**83**	18
Ethyl Benzene	**0.920**	**92**	**0.930**	**93**	1.1
m,p-Xylene	**1.00**	**100**	**0.895**	**90**	11
o-Xylene	**1.00**	**100**	**0.840**	**84**	17

Surrogate Recovery:

Fluorobenzene	101%	95%

Date of Report: October 26, 1999
Samples Submitted: October 15, 1999
Lab Traveler: 10-107
Project: WA99-2641

Date Analyzed: 10-18-99

% MOISTURE

Client ID	Lab ID	% Moisture
SS-11/2.5'	10-107-01	16
SS-12/3.5'	10-107-02	15
SS-13/2.5'	10-107-03	13

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range, and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

Z -

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page _____ of _____

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Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☒ Standard (Hydrocarbon analyses: 5 days, All other analyses: 7 days)
☐ 10/22 (other)

Project Chemist: DP

Laboratory No. 10-107

Company: ADaPT Engineering, Inc.
Project No.: WA99-2641
Project Name: Sound Subaru
Project Manager: Charles Caccy

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
1	SS-11/2.5'	11/14/99	2:45				X												X
2	SS-12/3.5'	"	3:00				X												X
3	SS-13/2.5'	"	2:30				X												X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
[signature]	11/15/99	[signature]	11/15/99
FIRM ADaPT	TIME 2:35	FIRM OSE	TIME 2:35
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

Chromatographs with final report ☒

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503.906.9200 fax 503.906 9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

22 December, 1999

Charles Cacek
ADaPT Engineering, Inc. - Seattle
800 Maynard Avenue South, Suite 403
Seattle, WA 98134

RE: Sound Subaru

Enclosed are the results of analyses for samples received by the laboratory on 12/15/99 08:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kirk Gendron
Project Manager

www.ncalabs.com

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541.383.9310 fax 541.382.7588

ADaPT Engineering, Inc. - Seattle	Project: Sound Subaru	
800 Maynard Avenue South, Suite 403	Project Number: WA99-2641	**Reported:**
Seattle WA, 98134	Project Manager: Charles Cacek	12/23/99 13:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	B9L0297-01	Water	12/14/99 13:45	12/15/99 08:45
MW-2	B9L0297-02	Water	12/14/99 11:45	12/15/99 08:45
MW-3	B9L0297-03	Water	12/14/99 15:40	12/15/99 08:45
MW-4	B9L0297-04	Water	12/14/99 09:30	12/15/99 08:45

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Laura Dutton for
Kirk Gendron, Project Manager

www.ncalabs.com

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541.383.9310 fax 541.382.7588

ADaPT Engineering, Inc. - Seattle	Project: Sound Subaru	
800 Maynard Avenue South, Suite 403	Project Number: WA99-2641	**Reported:**
Seattle WA, 98134	Project Manager: Charles Cacek	12/23/99 13:37

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (B9L0297-01) Water Sampled: 12/14/99 13:45 Received: 12/15/99 08:45									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	9L16026	12/16/99	12/17/99	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)		*105 %*	*50-150*		"	"	"	"	
Surrogate: 4-BFB (PID)		*96.7 %*	*50-150*		"	"	"	"	
MW-2 (B9L0297-02) Water Sampled: 12/14/99 11:45 Received: 12/15/99 08:45									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	9L16026	12/16/99	12/17/99	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)		*101 %*	*50-150*		"	"	"	"	
Surrogate: 4-BFB (PID)		*94.6 %*	*50-150*		"	"	"	"	
MW-3 (B9L0297-03) Water Sampled: 12/14/99 15:40 Received: 12/15/99 08:45									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	9L16026	12/16/99	12/17/99	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)		*101 %*	*50-150*		"	"	"	"	
Surrogate: 4-BFB (PID)		*96.5 %*	*50-150*		"	"	"	"	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Laura Dattmsfa

Kirk Gendron, Project Manager

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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

ADaPT Engineering, Inc. - Seattle	Project: Sound Subaru	
800 Maynard Avenue South, Suite 403	Project Number: WA99-2641	**Reported:**
Seattle WA, 98134	Project Manager: Charles Cacek	12/23/99 13:37

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (B9L0297-04) Water Sampled: 12/14/99 09:30 Received: 12/15/99 08:45									
Gasoline Range Hydrocarbons	ND	50.0	ug/l	1	9L16026	12/16/99	12/17/99	WTPH-G/8021B	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)		*97.7 %*	*50-150*		"	"	"	"	
Surrogate: 4-BFB (PID)		*94.4 %*	*50-150*		"	"	"	"	

North Creek Analytical - Bothell

Laura Dutton for

Kirk Gendron, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541 383.9310 fax 541.382.7588

ADaPT Engineering, Inc. - Seattle	Project: Sound Subaru	
800 Maynard Avenue South, Suite 403	Project Number: WA99-2641	**Reported:**
Seattle WA, 98134	Project Manager: Charles Cacek	12/23/99 13:37

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (B9L0297-03) Water Sampled: 12/14/99 15:40 Received: 12/15/99 08:45									
Diesel Range Hydrocarbons	**1.68**	0.250	mg/l	1	9L18001	12/18/99	12/20/99	WTPH-D	
Heavy Oil Range Hydrocarbons	ND	0.750	"	"	"	"	"	"	
Surrogate: 2-FBP		*82.0 %*	*50-150*		"	"	"	"	
MW-4 (B9L0297-04) Water Sampled: 12/14/99 09:30 Received: 12/15/99 08:45									
Diesel Range Hydrocarbons	**0.716**	0.250	mg/l	1	9L18001	12/18/99	12/20/99	WTPH-D	
Heavy Oil Range Hydrocarbons	ND	0.750	"	"	"	"	"	"	
Surrogate: 2-FBP		*83.1 %*	*50-150*		"	"	"	"	

North Creek Analytical - Bothell

Laura Dutton for

Kirk Gendron, Project Manager

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ADaPT Engineering, Inc. - Seattle	Project: Sound Subaru	
800 Maynard Avenue South, Suite 403	Project Number: WA99-2641	**Reported:**
Seattle WA, 98134	Project Manager: Charles Cacek	12/23/99 13:37

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9L16026: Prepared 12/16/99 Using EPA 5030B (P/T)										
Blank (9L16026-BLK1)										
Gasoline Range Hydrocarbons	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surrogate: 4-BFB (FID)	*42.1*		"	*48.0*		*87.7*	*50-150*			
Surrogate: 4-BFB (PID)	*44.0*		"	*48.0*		*91.7*	*50-150*			
Blank (9L16026-BLK2)										
Gasoline Range Hydrocarbons	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Surrogate: 4-BFB (FID)	*47.2*		"	*48.0*		*98.3*	*50-150*			
Surrogate: 4-BFB (PID)	*45.6*		"	*48.0*		*95.0*	*50-150*			
LCS (9L16026-BS1)										
Gasoline Range Hydrocarbons	514	50.0	ug/l	500		103	70-130			
Surrogate: 4-BFB (FID)	*52.9*		"	*48.0*		*110*	*50-150*			
Duplicate (9L16026-DUP1)					**Source: B9L0292-04**					
Gasoline Range Hydrocarbons	12100	500	ug/l		11800			2.51	25	
Surrogate: 4-BFB (FID)	*67.0*		"	*48.0*		*140*	*50-150*			
Duplicate (9L16026-DUP2)					**Source: B9L0315-07**					
Gasoline Range Hydrocarbons	ND	50.0	ug/l		ND				25	
Surrogate: 4-BFB (FID)	*48.7*		"	*48.0*		*101*	*50-150*			

North Creek Analytical - Bothell

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Laura Dutton for

Kirk Gendron, Project Manager

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ADaPT Engineering, Inc. - Seattle	Project: Sound Subaru	
800 Maynard Avenue South, Suite 403	Project Number: WA99-2641	**Reported:**
Seattle WA, 98134	Project Manager: Charles Cacek	12/23/99 13:37

Gasoline Range Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8021B - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9L16026: Prepared 12/16/99 Using EPA 5030B (P/T)										
Matrix Spike (9L16026-MS1)					**Source: B9L0294-04**					
Benzene	9.94	0.500	ug/l	10.0	ND	99.4	70-130			
Toluene	10.3	0.500	"	10.0	ND	103	70-130			
Ethylbenzene	10.2	0.500	"	10.0	ND	102	70-130			
Xylenes (total)	30.5	1.00	"	30.0	ND	102	70-130			
Surrogate: 4-BFB (PID)	*49.7*		*"*	*48.0*		*104*	*50-150*			
Matrix Spike Dup (9L16026-MSD1)					**Source: B9L0294-04**					
Benzene	9.97	0.500	ug/l	10.0	ND	99.7	70-130	0.301	15	
Toluene	10.4	0.500	"	10.0	ND	104	70-130	0.966	15	
Ethylbenzene	10.3	0.500	"	10.0	ND	103	70-130	0.976	15	
Xylenes (total)	30.5	1.00	"	30.0	ND	102	70-130	0	15	
Surrogate: 4-BFB (PID)	*50.0*		*"*	*48.0*		*104*	*50-150*			

North Creek Analytical - Bothell

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Laura Dattinsta

Kirk Gendron, Project Manager

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ADaPT Engineering, Inc. - Seattle	Project: Sound Subaru	
800 Maynard Avenue South, Suite 403	Project Number: WA99-2641	**Reported:**
Seattle WA, 98134	Project Manager: Charles Cacek	12/23/99 13:37

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9L18001: Prepared 12/18/99 Using EPA 3520C/600 Series										
Blank (9L18001-BLK1)										
Diesel Range Hydrocarbons	ND	0.250	mg/l							
Heavy Oil Range Hydrocarbons	ND	0.750	"							
Surrogate: 2-FBP	*0.266*		"	*0.320*		*83.1*	*50-150*			
LCS (9L18001-BS1)										
Diesel Range Hydrocarbons	1.81	0.250	mg/l	2.00		90.5	60-140			
Surrogate: 2-FBP	*0.266*		"	*0.320*		*83.1*	*50-150*			
Duplicate (9L18001-DUP1)					**Source: B9L0297-04**					
Diesel Range Hydrocarbons	0.659	0.502	mg/l		0.716			8.29	44	
Heavy Oil Range Hydrocarbons	ND	1.51	"		0.658			17.5	44	
Surrogate: 2-FBP	*0.501*		"	*0.643*		*77.9*	*50-150*			

North Creek Analytical - Bothell

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Laura Dutton for

Kirk Gendron, Project Manager

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ADaPT Engineering, Inc. - Seattle	Project: Sound Subaru	
800 Maynard Avenue South, Suite 403	Project Number: WA99-2641	**Reported:**
Seattle WA, 98134	Project Manager: Charles Cacek	12/23/99 13:37

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Laura Dutton for

Kirk Gendron, Project Manager

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20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 FAX 382-7588

CHAIN OF CUSTODY REPORT

Work Order #: B9L0297

CLIENT: ADaPT Engineering, Inc.
REPORT TO: Charles Cacek
ADDRESS: 800 Maynard Avenue South, Suite 403 Seattle WA 98134
PHONE: 206 654 7045 FAX: 206 654 7048

INVOICE TO:

P.O. NUMBER:

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: 10 7 5 4 3 2 1 <1 (STD.)
Petroleum Hydrocarbon Analyses: ~~5~~ 4 3 2 1 <1 (STD.)
OTHER Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

PROJECT NAME: Sound Subaru
PROJECT NUMBER: WA99-2641
SAMPLED BY: Charles Cacek

REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	WTPH-G/BTEX	WTPH-D-Extended		MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1.	MW-1	12/14/99 1:45	X		B9L0297-01	W	4	2-500ml amber 2-VOA	
2.	MW-2	11:45	↓		-02	↓	↓	↓	
3.	MW-3	3:40	↓	X	-03	↓	↓	↓	
4.	MW-4	9:30 AM	↓	X	-04	↓	↓	↓	
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									

RELINQUISHED BY: [signature] DATE: 12/15/99
PRINT NAME: Charles Cacek FIRM: ADaPT TIME: 7:30
RECEIVED BY: Laura Dutton
PRINT NAME: Laura Dutton FIRM: NCA DATE: 12/15/99 TIME: 7:50A

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY: S. Wideen
PRINT NAME: S. Wideen FIRM: NCA DATE: 12-15-99 TIME: 845

ADDITIONAL REMARKS: All samples preserved w/ HCl

W/O TEMP:

COC REV 3/99

OnSite
Environmental Inc.
Analytical Testing and Mobile Laboratory Services

September 2, 1999

Charles Cacek
Adapt Engineering
800 Maynard Ave. S., Ste. 403
Seattle, WA 98134

Re: Analytical Data for Project WA99-2641
Laboratory Reference No. 9908-184

Dear Charles:

Enclosed are the analytical results and associated quality control data for samples submitted on August 25, 1999. **Please note that additional data will follow as it becomes available.**

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 8-30-99
Date Analyzed: 8-31-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**GP-1/10'-13'**			**GP-6/3'-4'**		
Lab ID:	08-184-03			08-184-15		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.30	**0.43**		0.29
Toluene	**ND**		0.30	**ND**		0.29
Ethyl Benzene	**ND**		0.30	**ND**		0.29
m,p-Xylene	**ND**		0.30	**2.8**		0.29
o-Xylene	**ND**		0.30	**ND**		0.29
TPH-Gas	**ND**		30	**ND**		29
Surrogate Recovery:						
Fluorobenzene	73%			78%		

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 8-30-99
Date Analyzed: 8-31-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**GP-7/3'-4'**			**GP-8/4'-4.5'**		
Lab ID:	08-184-17			08-184-18		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.28	**ND**		0.29
Toluene	**ND**		0.28	**ND**		0.29
Ethyl Benzene	**ND**		0.28	**0.35**		0.29
m,p-Xylene	**ND**		0.28	**1.1**		0.29
o-Xylene	**ND**		0.28	**ND**		0.29
TPH-Gas	**ND**		28	**ND**		29
Surrogate Recovery:						
Fluorobenzene	88%			79%		

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 8-30-99
Date Analyzed: 8-31&9-1-99

Matrix: Soil
Units: mg/Kg (ppm)

Client ID:	**GP-9/3.5'-4'**			**GP-11/10'-13'**		
Lab ID:	08-184-20			08-184-22		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**0.97**		0.29	**ND**		0.061
Toluene	**0.34**		0.29	**ND**		0.061
Ethyl Benzene	**12**		0.29	**ND**		0.061
m,p-Xylene	**50**		1.2	**ND**		0.061
o-Xylene	**1.1**		0.29	**ND**		0.061
TPH-Gas	**1800**		29	**ND**		6.1
Surrogate Recovery:						
Fluorobenzene	88%			69%		

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-30-99
Date Analyzed: 8-30-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB0830S2

	Result	Flags	PQL
Benzene	**ND**		0.050
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0

Surrogate Recovery:
Fluorobenzene 85%

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 8-30-99
Date Analyzed: 8-30-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	08-175-05 **Original**	08-175-05 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	79%	70%		

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-G/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 8-30-99
Date Analyzed: 8-31-99

Matrix: Soil
Units: mg/Kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	08-175-05 **MS**	Percent Recovery	08-175-05 **MSD**	Percent Recovery	RPD
Benzene	**0.796**	**80**	**0.915**	**92**	14
Toluene	**0.754**	**75**	**0.803**	**80**	6.3
Ethyl Benzene	**0.815**	**82**	**0.889**	**89**	8.7
m,p-Xylene	**0.826**	**83**	**0.919**	**92**	11
o-Xylene	**0.831**	**83**	**0.899**	**90**	7.8

Surrogate Recovery:

Fluorobenzene	79%	87%

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-G/BTEX

Date Extracted: 8-25-99
Date Analyzed: 8-25-99

Matrix: Water
Units: ug/L (ppb)

Client ID:	**GP-1, W-1**			**GP-11, W-1**		
Lab ID:	08-184-24			08-184-27		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		1.0	**ND**		1.0
Toluene	**ND**		1.0	**ND**		1.0
Ethyl Benzene	**ND**		1.0	**ND**		1.0
m,p-Xylene	**ND**		1.0	**ND**		1.0
o-Xylene	**ND**		1.0	**ND**		1.0
TPH-Gas	**ND**		100	**ND**		100
Surrogate Recovery: Fluorobenzene	87%			89%		

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-25-99
Date Analyzed: 8-25-99

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0825W2

	Result	Flags	PQL
Benzene	**ND**		1.0
Toluene	**ND**		1.0
Ethyl Benzene	**ND**		1.0
m,p-Xylene	**ND**		1.0
o-Xylene	**ND**		1.0
TPH-Gas	**ND**		100

Surrogate Recovery:
Fluorobenzene 88%

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 8-25-99
Date Analyzed: 8-25-99

Matrix: Water
Units: ug/L (ppb)

Lab ID:	08-184-27 **Original**	08-184-27 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	89%	85%		

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-G/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 8-25-99
Date Analyzed: 8-26-99

Matrix: Water
Units: ug/L (ppb)
Spike Level: 50.0 ppb

Lab ID:	08-158-01 **MS**	Percent Recovery	08-158-01 **MSD**	Percent Recovery	RPD
Benzene	**52.4**	**105**	**50.1**	**100**	4.5
Toluene	**50.7**	**97**	**49.6**	**95**	2.2
Ethyl Benzene	**72.3**	**100**	**72.3**	**100**	0.0
m,p-Xylene	**169**	**116**	**168**	**113**	0.83
o-Xylene	**76.4**	**101**	**76.8**	**101**	0.50

Surrogate Recovery:

Fluorobenzene	92%		95%

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-Dx

Date Extracted:	8-26-99
Date Analyzed:	8-26-&27-99
Matrix:	Water
Units:	mg/L (ppm)

Client ID:	GP-3,W-1	GP-4,W-1
Lab ID:	08-184-25	08-184-26
Diesel Fuel:	ND	ND
PQL:	0.25	0.25
Heavy Oil:	1.1	ND
PQL:	0.50	0.50
Surrogate Recovery:		
o-Terphenyl	83%	73%

Flags:

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-26-99
Date Analyzed:	8-26-99
Matrix:	Water
Units:	mg/L (ppm)
Lab ID:	MB0826W1
Diesel Fuel:	ND
PQL:	0.25
Heavy Oil:	ND
PQL:	0.50
Surrogate Recovery:	
o-Terphenyl	70%

Flags:

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	8-26-99
Date Analyzed:	8-26-99
Matrix:	Water
Units:	mg/L (ppm)

Lab ID:	08-191-05	08-191-05 DUP
Diesel Fuel:	0.277	0.271
PQL:	0.25	0.25
RPD:	2.2	
Surrogate Recovery:		
o-Terphenyl	81%	78%

Flags:

Date of Report: September 2, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

Date Analyzed: 8-26-99

% MOISTURE

Client ID	Lab ID	% Moisture
GP-1 / 4'-7'	08-184-03	17
GP-3 / 13'-15'	08-184-10	17
GP-6 / 3'-4'	08-184-15	14
GP-7 / 3'-4'	08-184-17	12
GP-8 / 4'-4.5'	08-184-18	14
GP-9 / 3.5'-4'	08-184-20	14
GP-10 / 3'-4'	08-184-21	14
GP-11 / 10'-13'	08-184-22	18

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range, and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

Z -

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

1

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210

9/11

CHAIN OF CUSTODY REPORT

DB **Work Order #** 08-184

REPORT TO:	ADaPT Engineering, Inc.
ATTENTION:	Charles Cacek
ADDRESS:	800 Maynard Ave. S., Su. 403 Seattle WA 98134
PHONE:	206 654 7045 FAX: 206 654 7048
PROJECT NAME:	Sound Sobaro
PROJECT NUMBER:	WA99-2641
SAMPLED BY:	Charles Cacek

INVOICE TO:
ATTENTION:
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 (Standard) 7 5 4 3 2 1 Same Day

Fuels & Hydrocarbon Analyses: 5 (Standard) 3-4 2 1 Same Day

OTHER Specify:

** Turnaround Requests less than standard may incur Rush Charges.*

Analysis Request:

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	WTPH-G/BTEX	WTPH-D/extended	EPH		Dry Weight						MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1	1. GP-1/4'-7'	9:10 Am 8/23/99												Soil	1-4oz	
2	2. GP-1/7'-10'	9:20												↓	↓	
3	3. GP-1/10'-13'	9:30		X				X								
4	4. GP-2/2.5'-3.5'	10:55														
5	5. GP-2/4.5'-5'	10:59														
6	6. GP-2/7.5'-8'	11:05														
7	7. GP-3/4'-6'	11:25														
8	8. GP-3/8'-10'	11:40														
9	9. GP-3/12'-13'	11:55													↓	
10	10. GP-3/13'-15'	11:56 ↓				X		X						↓	1-8oz	

RELINQUISHED BY (Signature): [signature]	DATE: 8/25/99	RECEIVED BY (Signature): [signature]	DATE: 8/25/99
PRINT NAME: Charles C. Cacek FIRM: ADaPT	TIME:	PRINT NAME: DENNIS ROGERS FIRM: SPEEDY	TIME: 11:30
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature): [signature]	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: UWARD FIRM: OSE	TIME:

ADDITIONAL REMARKS: Standard Turnaround ⓧadded 8/31/99. DB.

2

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

9/1

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East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210

CHAIN OF CUSTODY REPORT

DB

Work Order # 08-184

REPORT TO:	ADaPT Engineering, Inc.
ATTENTION:	Charles Cacek
ADDRESS:	800 Maynard Ave. S. Su. 403, Seattle WA 98134
PHONE:	206 654 7045
FAX:	206 654 7048
PROJECT NAME:	Sound Subaru
PROJECT NUMBER:	WA99-2641
SAMPLED BY:	Charles Cacek

INVOICE TO:
ATTENTION:
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day

OTHER Specify:

** Turnaround Requests less than standard may incur Rush Charges.*

Analysis Request: WTPH-G/BTEX; WTPH-D/extended; total lead; ⊗ TPH-(HCID)

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	WTPH-G/BTEX	WTPH-D/extended	total lead	⊗ TPH-(HCID)						MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. GP-4/5'-6'	8/23/99 12:55												1-4oz	
2. GP-4/9'-10'	1:10												↓	
3. GP-4/12'-13'	1:20			⊗									↓	
4. GP-5/14'-16'	2:05												1-8oz	
5. GP-6/3'-4'	2:35		X		⊗	X							1-4oz	
6. GP-6/7'-8'	2:50												↓	
7. GP-7/3'-4'	3:00		X		⊗	X							↓	
8. GP-8/4'-4.5'	3:35		X		⊗	X							↓	
9. GP-8/7'-7.5'	3:50												↓	
10. GP-9/3.5'-4'	4:05 ↓		X		⊗	X							↓	

RELINQUISHED BY (Signature): [signature]	DATE: 8/25/99	RECEIVED BY (Signature): [signature]	DATE: 8/25/99
PRINT NAME: Charles C. Cacek FIRM: ADaPT	TIME:	PRINT NAME: DENNIS ROGERS FIRM: SPEEDY	TIME: 11:20
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature): [signature]	DATE: 8/25/99
PRINT NAME: FIRM:	TIME:	PRINT NAME: U. WARD FIRM: OSE	TIME: 1:00

ADDITIONAL REMARKS: Standard Turnaround ⊗ Added 8/31/99. DB.

PAGE 2 OF 2

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9/1

DB

CHAIN OF CUSTODY REPORT

Work Order # 08-184

REPORT TO:	ADaPT Engineering, Inc.
ATTENTION:	Charles Cacek
ADDRESS:	800 Maynard Ave S., So. 403 Seattle WA 98134
PHONE:	206 654 7045 FAX: 206 654 7048
PROJECT NAME:	Sound Soban
PROJECT NUMBER:	WA99-2641
SAMPLED BY:	Charles Cacek
INVOICE TO:	
ATTENTION:	
ADDRESS:	
P.O. NUMBER:	NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 Standard | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: NWTPH-G/BTEX; NWTPH-D- extended; VPH; total lead; TCLP Pb

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	GP-10/3'-4'	8/23/99 5:00pm		Soil	1-8oz	
2.	GP-11/10'-13	5:51			1-4oz	
3.	GP-11/13-16	6:00			1-8oz	
4.	GP-1, W-1	9:35 Am		Water	1-500ml Amber	3-VOAs
5.	GP-3, W-1	12:15 Pm			2-500ml Amber	3 VOAs
6.	GP-4, W-1	1:30 Pm			2-500ml Amber	2 VOAs
7.	GP-11, W-1	6:15 Pm			2-500ml Amber	2 VOAs / 3 DB 8/25/99
8.						
9.						
10.						

RELINQUISHED BY (Signature):	Charles C. Cacek	DATE: 8/25/99	RECEIVED BY (Signature): Dennis Rogers DATE: 8/25/99
PRINT NAME:	Charles C. Cacek	FIRM: ADaPT TIME:	PRINT NAME: Dennis Rogers FIRM: SPEEDY TIME: 1130
RELINQUISHED BY (Signature):		DATE:	RECEIVED BY (Signature): DATE: 8/25/99
PRINT NAME:		FIRM: TIME:	PRINT NAME: V. WARD FIRM: OSE TIME: 1:00pm

ADDITIONAL REMARKS: Standard Turnaround ⊗Added 8/31/99 - DB.

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

September 29, 1999

Charles Cacek
Adapt Engineering
800 Maynard Ave. S., Ste. 403
Seattle, WA 98134

Re: Analytical Data for Project WA99-2641
Laboratory Reference No. 9908-184

Dear Charles:

Enclosed are the analytical results and associated quality control data for samples submitted on August 25, 1999.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-Dx

Date Extracted:	9-1-99
Date Analyzed:	9-1-99
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	GP-4/12'-13'
Lab ID:	08-184-13
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	92%

Flags:

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-1-99
Date Analyzed:	9-1-99
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB0901S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	128%
Flags:	

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	9-1-99
Date Analyzed:	9-1-99
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	08-218-02	08-218-02 DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	101%	112%

Flags:

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

VOLATILE PETROLEUM HYDROCARBONS

Date Extracted: 8-31-99
Date Analyzed: 9-8&9-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: 08-184-21
Client ID: GP-10/3'-4'

VPH:	Results	PQL
Aliphatic C5-C6	19	5.0
Aliphatic C6-C8	350	5.0
Aliphatic C8-C10	100	5.0
Aliphatic C10-C12	480	5.0
Total Aliphatic:	950	
Aromatic C8-C10	660	5.0
Aromatic C10-C12	370	5.0
Aromatic C12-C13	84	5.0
Total Aromatic:	1100	
Target Analytes:		
Methyl t-butylether	1.1	0.50
Benzene	3.5	0.50
Toluene	6.1	0.50
Ethylbenzene	28	0.50
m , p - Xylene	110	0.50
o -Xylene	36	0.50

Surrogate:	Percent Recovery	Control Limits
Fluorobenzene	107	60%-140%

Flags:

	Result
VPH	2050

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

VOLATILE PETROLEUM HYDROCARBONS
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-31-99
Date Analyzed:	9-08-99
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB0831S4

VPH:	**Results**	**PQL**
Aliphatic C5-C6	ND	5.0
Aliphatic C6-C8	ND	5.0
Aliphatic C8-C10	ND	5.0
Aliphatic C10-C12	ND	5.0
Total Aliphatic:	NA	
Aromatic C8-C10	ND	5.0
Aromatic C10-C12	ND	5.0
Aromatic C12-C13	ND	5.0
Total Aromatic:	NA	
Target Analytes:		
Methyl t-butylether	ND	0.50
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m , p - Xylene	ND	0.50
o -Xylene	ND	0.50

Surrogate:	Percent Recovery	Control Limits
Fluorobenzene	110	60%-140%

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

VOLATILE PETROLEUM HYDROCARBONS
DUPLICATE QUALITY CONTROL

Date Extracted: 8-31-99
Date Analyzed: 9-15-99

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID:	08-155-19	08-155-19 DUP		
VPH:	**Results**	**Results**	**PQL**	**RPD**
Aliphatic C5-C6	ND	ND	5.0	NA
Aliphatic C6-C8	ND	ND	5.0	NA
Aliphatic C8-C10	ND	ND	5.0	NA
Aliphatic C10-C12	ND	ND	5.0	NA
Aromatic C8-C10	ND	ND	5.0	NA
Aromatic C10-C12	ND	ND	5.0	NA
Aromatic C12-C13	ND	ND	5.0	NA
Target Analytes:				
Methyl t-butylether	ND	ND	0.50	NA
Benzene	ND	ND	0.50	NA
Toluene	ND	ND	0.50	NA
Ethylbenzene	ND	ND	0.50	NA
m , p - Xylene	ND	ND	0.50	NA
o -Xylene	ND	ND	0.50	NA
Surrogate:	Percent Recovery	Percent Recovery	Control Limits	
Fluorobenzene	93	84	60%-140%	

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

VOLATILE PETROLEUM HYDROCARBONS
SPIKE BLANK QUALITY CONTROL

Date Extracted: 8-31-99
Date Analyzed: 9-09-99

Matrix: Soil
Units: mg/Kg (ppm)

Spiking Level: 1.00 ppm

Lab ID:	SB0831S2		SB0831S2 DUP			
	Result	**Percent Recovery**	**Result**	**Percent Recovery**	**PQL**	**RPD**
Methyl t-butylether:	0.980	98	0.965	97	0.50	1.5
Benzene:	1.10	110	1.09	109	0.50	0.91
Toluene:	1.18	118	1.12	112	0.50	5.2
Ethylbenzene:	1.13	113	1.12	112	0.50	0.89
m , p - Xylene:	1.18	118	1.13	113	0.50	4.3
o -Xylene:	1.11	111	1.09	109	0.50	1.8
Surrogate:					Control Limits	
Fluorobenzene		79		78	60%-140%	

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

EXTRACTABLE PETROLEUM HYDROCARBONS

Date Extracted:	8-26-99
Date Analyzed:	9-29-99
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	08-184-10
Client ID:	**GP-3/13'-15'**

	Results	PQL
Aliphatic C10-C12	ND	6.0
Aliphatic C12-C16	14	6.0
Aliphatic C16-C18	12	6.0
Aliphatic C18-C21	48	6.0
Aliphatic C21-C28	430	6.0
Aliphatic C28-C36	440	6.0
Total Aliphatic	940	
Aromatic C10-C12	ND	6.0
Aromatic C12-C16	ND	6.0
Aromatic C16-C18	ND	6.0
Aromatic C18-C21	36	6.0
Aromatic C21-C28	86	6.0
Aromatic C28-C36	150	6.0
Total Aromatic	270	

Surrogate	Percent Recovery	Control Limits
o-Terphenyl	105	50 - 150
1-Chlorooctadecane	79	50 - 150

Flags:

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

EXTRACTABLE PETROLEUM HYDROCARBONS
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-26-99
Date Analyzed:	9-29-99
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB0826S1

	Results	PQL
Aliphatic C10-C12	ND	5.0
Aliphatic C12-C16	ND	5.0
Aliphatic C16-C18	ND	5.0
Aliphatic C18-C21	ND	5.0
Aliphatic C21-C28	ND	5.0
Aliphatic C28-C36	ND	5.0
Total Aliphatic	NA	
Aromatic C10-C12	ND	5.0
Aromatic C12-C16	ND	5.0
Aromatic C16-C18	ND	5.0
Aromatic C18-C21	ND	5.0
Aromatic C21-C28	ND	5.0
Aromatic C28-C36	ND	5.0
Total Aromatic	NA	

Surrogate	Percent Recovery	Control Limits
o-Terphenyl	99	50 - 150
1-Chlorooctadecane	84	50 - 150

Flags:

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

EXTRACTABLE PETROLEUM HYDROCARBONS
SB/SBD QUALITY CONTROL

Date Extracted: 8-26-99
Date Analyzed: 9-29-99

Matrix: Soil
Units: mg/Kg (ppm)

Spike Level: 100 ppm

Lab ID: SB0826S1 SB0826S1DUP

	Results	Results	PQL	RPD
Aliphatic C10-C12	6.23	5.75	5.0	8.0
Aliphatic C12-C16	25.3	24.4	5.0	3.8
Aliphatic C16-C18	15.9	15.4	5.0	2.8
Aliphatic C18-C21	14.2	13.7	5.0	3.8
Aliphatic C21-C28	ND	ND	5.0	NA
Aliphatic C28-C36	ND	ND	5.0	NA
Aromatic C10-C12	ND	ND	5.0	NA
Aromatic C12-C16	ND	ND	5.0	NA
Aromatic C16-C18	ND	ND	5.0	NA
Aromatic C18-C21	8.99	5.47	5.0	49
Aromatic C21-C28	ND	ND	5.0	NA
Aromatic C28-C36	ND	ND	5.0	NA
Percent Recovery	64	59		8.8

Surrogate	Percent Recovery		Control Limits
o-Terphenyl	107	107	50 - 150
1-Chlorooctadecane	92	95	50 - 150

Flags:

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

TOTAL LEAD
EPA 6010B

Date Extracted:	9-1-99
Date Analyzed:	9-1-99
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
GP6/3'-4'	08-184-15	**45**	5.8
GP-7/3'-4'	08-184-17	**220**	5.7
GP8/4'-4.5'	08-184-18	**74**	5.8
GP9/3.5'-4'	08-184-20	**240**	5.8
GP-10/3'-4'	08-184-21	**36**	5.8
GP11/10'-13'	08-184-22	**ND**	6.1

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	9-1-99
Date Analyzed:	9-1-99
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0901S1

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 9-1-99
Date Analyzed: 9-1-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-219-01

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**ND**	**ND**	NA		5.0

Date of Report: September 29, 1999
Samples Submitted: August 25, 1999
Lab Traveler: 08-184
Project: WA99-2641

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 9-1-99
Date Analyzed: 9-1-99

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-219-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**240**	96	**245**	98	2.1	

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range, and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

Z -

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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9/1 DB

CHAIN OF CUSTODY REPORT

Work Order # 08-184

REPORT TO: ADaPT Engineering, Inc.
ATTENTION: Charles Cacer
ADDRESS: 800 Maynard Ave. S., Su. 403, Seattle WA 98134
PHONE: 206 654 7045 FAX: 206 654 7048
PROJECT NAME: Sound Sobavo
PROJECT NUMBER: WA99-2641
SAMPLED BY: Charles Cacer

INVOICE TO:
ATTENTION:
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* *Turnaround Requests less than standard may incur Rush Charges.*

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: WTPH-G/ BTEX / WTPH-D/ extended / EPH / VOCs by 8260	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
GP-1/4'-7'	9:10 AM 8/23/99			Soil	1-402	
GP-1/7'-10'	9:20					
GP-1/10'-13'	9:30		X X			
GP-2/2.5'-3.5'	10:55					
GP-2/4.5'-5'	10:59					
GP-2/7.5'-8'	11:05					
GP-3/4'-6'	11:25					
GP-3/8'-10'	11:40					
GP-3/12'-13'	11:55					
GP-3/13'-15'	11:56		X X		1-802	

RELINQUISHED BY (Signature): Charles C. Cacer DATE: 8/25/99
PRINT NAME: Charles C. Cacer FIRM: ADaPT TIME:

RECEIVED BY (Signature): Dennis Rogers DATE: 8/25/99
PRINT NAME: DENNIS ROGERS FIRM: SPEEDY TIME: 1120

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE:
PRINT NAME: UWARD FIRM: OSE TIME:

ADDITIONAL REMARKS: Standard Turnaround @Added 8/31/99. DB

2

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

9/1

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210

CHAIN OF CUSTODY REPORT

DB

Work Order # 08-184

REPORT TO: ADaPT Engineering, Inc.
ATTENTION: Charles Cacek
ADDRESS: 800 Maynard Ave. S. Su. 403, Seattle WA 98134
PHONE: 206 654 7045 FAX: 206 654 7048
PROJECT NAME: Sound Subaru
PROJECT NUMBER: WA99-2641
SAMPLED BY: Charles Cacek

INVOICE TO:
ATTENTION:
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

Analysis Request: WTPH-G/BTEX, WTPH-D/extended, total lead, PCBs(?) / [illegible]

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard), 7, 5, 4, 3, 2, 1, Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard), 3-4, 2, 1, Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	WTPH-G/BTEX	WTPH-D/extended	total lead	[illegible]							MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
GP-4/5'-6'	8/23/99 12:55													1-4oz	
GP-4/9'-10'	1:10													↓	
GP-4/12'-13'	1:20			⊗										↓	
GP-5/14'-16'	2:05													1-8oz	
GP-6/3'-4'	2:35		X		⊗	X								1-4oz	
GP-6/7'-8'	2:50													↓	
GP-7/3'-4'	3:00		X		⊗	X								↓	
GP-8/4'-4.5'	3:35		X		⊗	X								↓	
GP-8/7'-7.5'	3:50													↓	
GP-9/3.5'-4'	4:05 ↓		X		⊗	X								↓	

RELINQUISHED BY (Signature): [signature] DATE: 8/25/99
PRINT NAME: Charles C. Cacek FIRM: ADaPT TIME:
RECEIVED BY (Signature): [signature] DATE: 8/25/99
PRINT NAME: Dennis Rogers FIRM: Speedy TIME: 1:30

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY (Signature): [signature] DATE: 8/25/99
PRINT NAME: U. Ward FIRM: OSE TIME: 2:00

ADDITIONAL REMARKS: Standard Turnaround ⊗ Added 8/31/99. DB.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (425) 420-9200 FAX 420-9210
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 906-9200 FAX 906-9210

9/1

DB

CHAIN OF CUSTODY REPORT

Work Order # 08-184

REPORT TO: ADaPT Engineering, Inc.
ATTENTION: Charles Cacek
ADDRESS: 800 Maynard Ave S., Ste. 403
Seattle WA 98134
PHONE: 206 654 7045 FAX: 206 654 7048
PROJECT NAME: Sound Soban
PROJECT NUMBER: WA99-2641
SAMPLED BY: Charles Cacek

INVOICE TO:
ATTENTION:
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 Standard | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 Standard | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: WTPH-G/ BTEX	WTPH-D-extended	VPH	total lead	Dissolved Pb	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
GP-10/3'-4'	8/23/99 5:00pm			X	⊗	X		Soil	1-8oz	
GP-11/10'-13	5:51		X		⊗	X			1-4oz	
GP-11/13'-16	6:00								1-8oz	
GP-1, W-1	9:35 am		X					Water	1-500ml Amber 3-VOAs	
GP-3, W-1	12:15 Pm		X	X					2-500ml Amber-3 VOAs	
GP-4, W-1	1:30 Pm		X	X					2-500ml Amber-2 VOAs	
GP-11, W-1	6:15 Pm		X						2-500ml Amber 2 VOAs / 3 DB 8/25/99	

RELINQUISHED BY (Signature): Charles C. Cacek DATE: 8/25/99
PRINT NAME: Charles C. Cacek FIRM: ADaPT TIME:

RECEIVED BY (Signature): Dennis Rogers DATE: 8/25/99
PRINT NAME: DENNIS ROGERS FIRM: SPEEDY TIME: 11:30

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY (Signature): DATE: 8/25/99
PRINT NAME: V. WARD FIRM: OSE TIME: 1:00pm

ADDITIONAL REMARKS: Standard Turnaround

⊗ Added 8/31/99. DB.

APPENDIX G

GEO-RECON INTERNATIONAL REPORT

GEO RECON INTERNATIONAL

applied geophysics

February 23, 2000
J99-683/AH

Adapt Engineering, Inc.
800 Maynard Avenue South
Seattle, WA 98134

RE: Ground Penetrating Radar Survey at the Walker Subaru Used Car Lot
250 Rainier Avenue South
Renton, Washington

This letter reports the results of a Ground Penetrating Radar Survey (GPR) at the site of a former gasoline service station that occupied the corner of 3rd Avenue South and Rainier Avenue South, Renton Washington. The site is presently utilized as a Used Car Lot for Walker Subaru. The work was completed on August 17, 1999.

Results of the Survey

No evidence for orphan Underground Storage Tanks (UST) was found during the survey. The survey covered 3 areas within the property boundaries. The survey located drilling hazards to avoid for additional exploration efforts.

The interpretation of the GPR data for the three areas is shown in the attached three figures.

Area 1

Area 1 is shown in Figure 1 attached to this report and is located on the East Side of the property, adjacent to the property line, beginning 20 feet North of the Espresso Stand on the corner of the area. A main sewer line crosses the area. There appears to be an abandoned side sewer connection to the main line from a former structure (?) on the area or possible former surface sump. Possible buried debris is as shown. The possible debris is from 4 to 5 feet in depth, and may be an accumulation of boulders or gravel in the subsurface. Some near surface reflections on the GPR records show evidence of abandoned piping and possible foundation remains. The area is presently covered by an asphalt surface. The GPR lines were run at a 1-metre spacing across the area.

Area 2

Area 2 is shown in Figure 2 and is adjacent to the sidewalk along Rainer Avenue South, on the West Side of the property. The water line, from the meter box on the sidewalk crosses the area to the structure on the site. Some utilities are located near the eastern edge of the sidewalk. The area was crossed with lines at 1-metre spacings.

Area 3

Area 3 is shown in Figure 3, and lies in front of the structure on the site, North of South 3rd Street. The area is largely disturbed ground; the North sewer trench line was clearly visible on the GPR records. The sewer lines cross the area.

Methods

The Ground Penetrating Radar (a GSSI, SIR System 3) utilized a 500 Mega-Hertz antenna. The GPR antenna used for this investigation transmits a 2 nano-second (ns) pulse at a frequency of 500 Mega-Hertz for the selected scan rate of 8 times per second. When the signal encounters a change in electrical properties (a change in electrical permittivity), a portion of the signal energy is reflected back to the surface. The reflected signal received by the antenna, is digitally processed and recorded on a chart recorder in an amplitude-threshold format. The character of the reflection is used to interpret the source of the reflection.

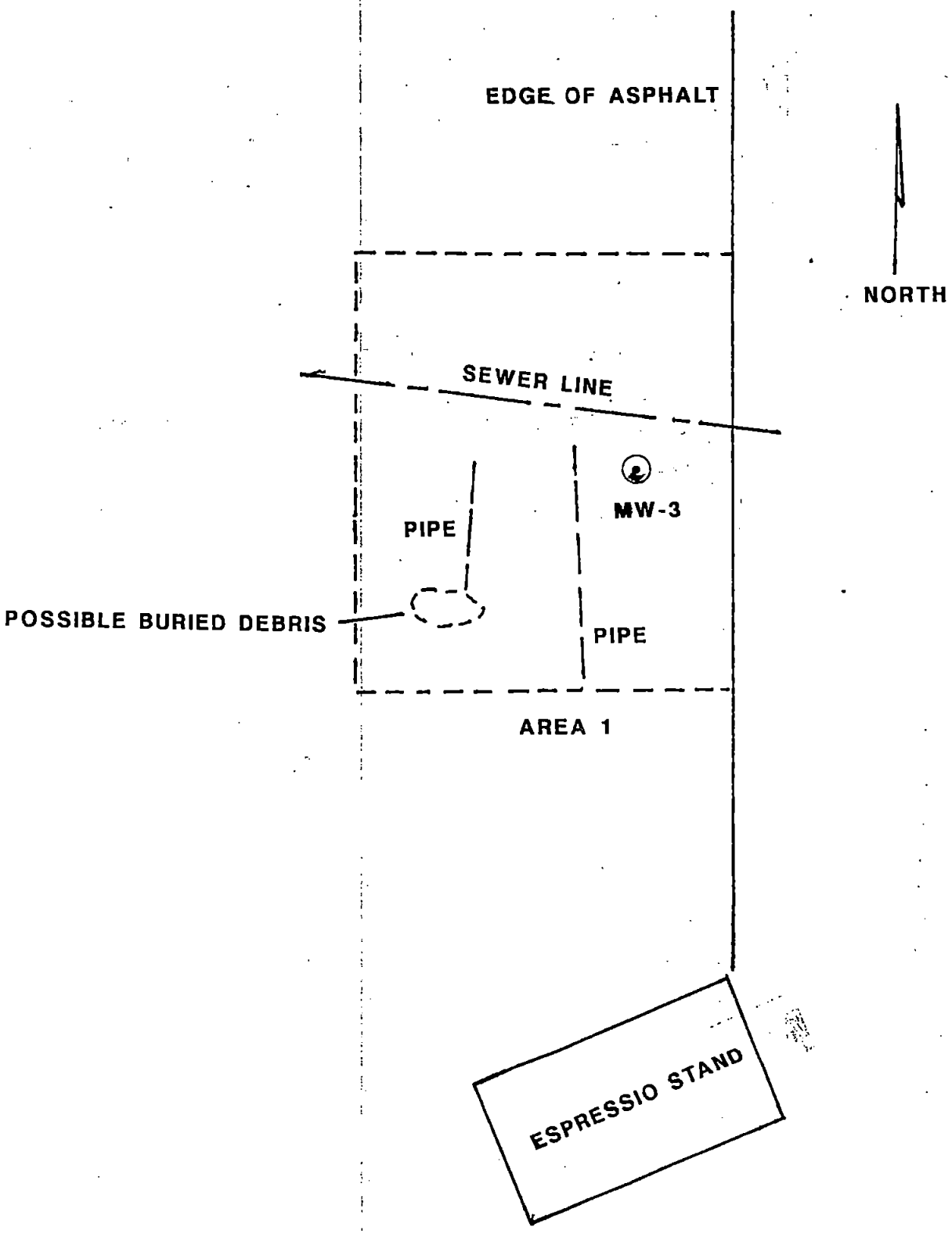
The GPR records were recorded at a full-scale sweep of 80 nano-seconds, and have 8 nano-seconds between horizontal time marks. The top of the recording is marked at one metre (3.28 ft) intervals. The depth of an object is determined by the electro-magnetic wave propagation rate (inverse of wave velocity) of the site materials. The recorded time is two-way time, that is the time down to the surface and then back to the antenna. The two-way time is estimated to be between 5 to 6 nano-seconds per foot, or an estimated 1.3 to 1.6 feet between the horizontal time lines. The electro-magnetic velocity may vary across the site, both horizontally and vertically.

We trust that the above is sufficient for your requirements. Please let us know if you have any questions or if we may be of further assistance.

For Geo-Recon International

John M Musser

John M Musser
Principal Geophysicist



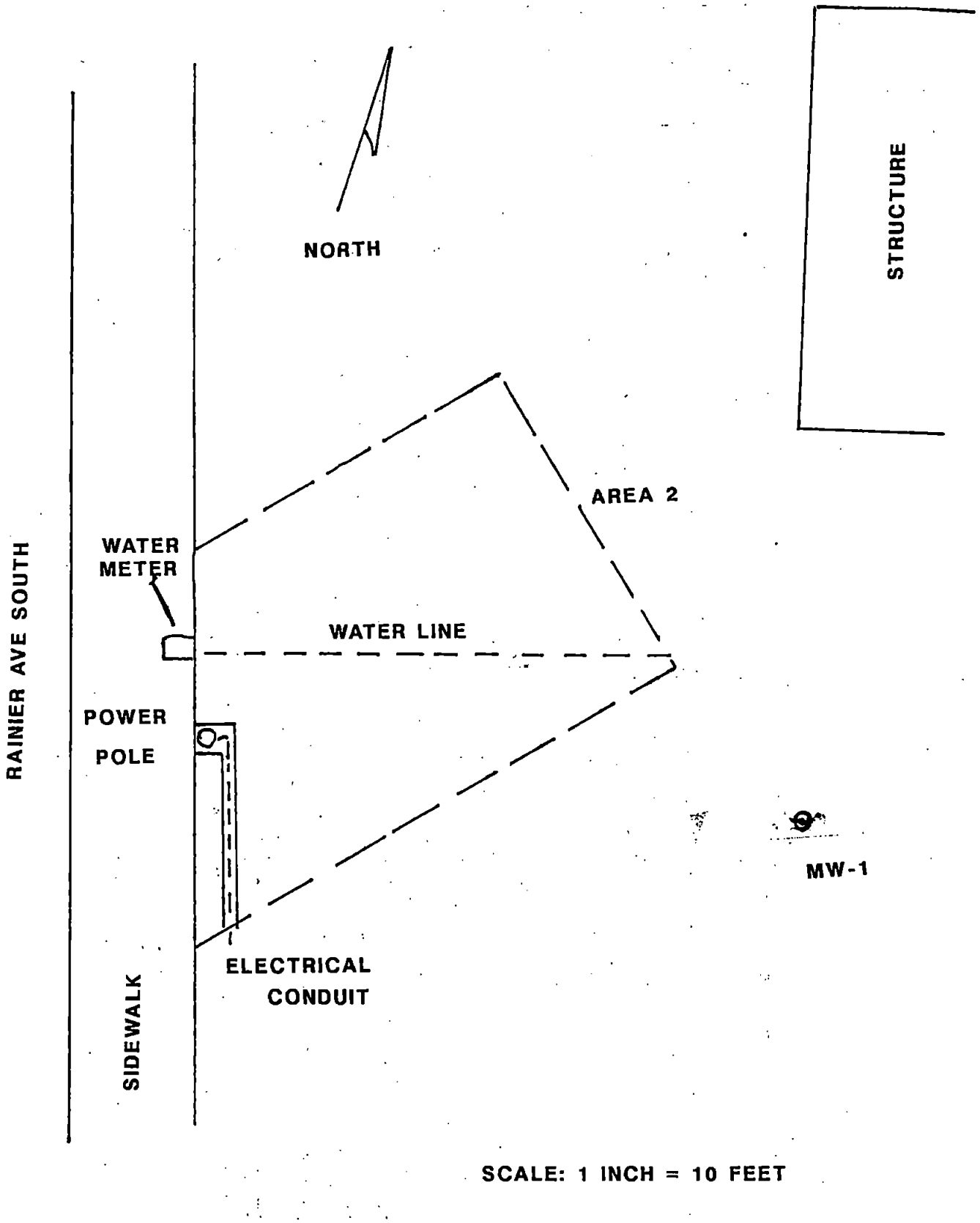
SCALE 1 INCH = 10 FEET

LOCATION PLAN	Area 1, Walker Subaru Used Car Lot, Renton, Washington

GPR Survey
J99-683/AH

GEO-RECON INTERNATIONAL

FIG. 1

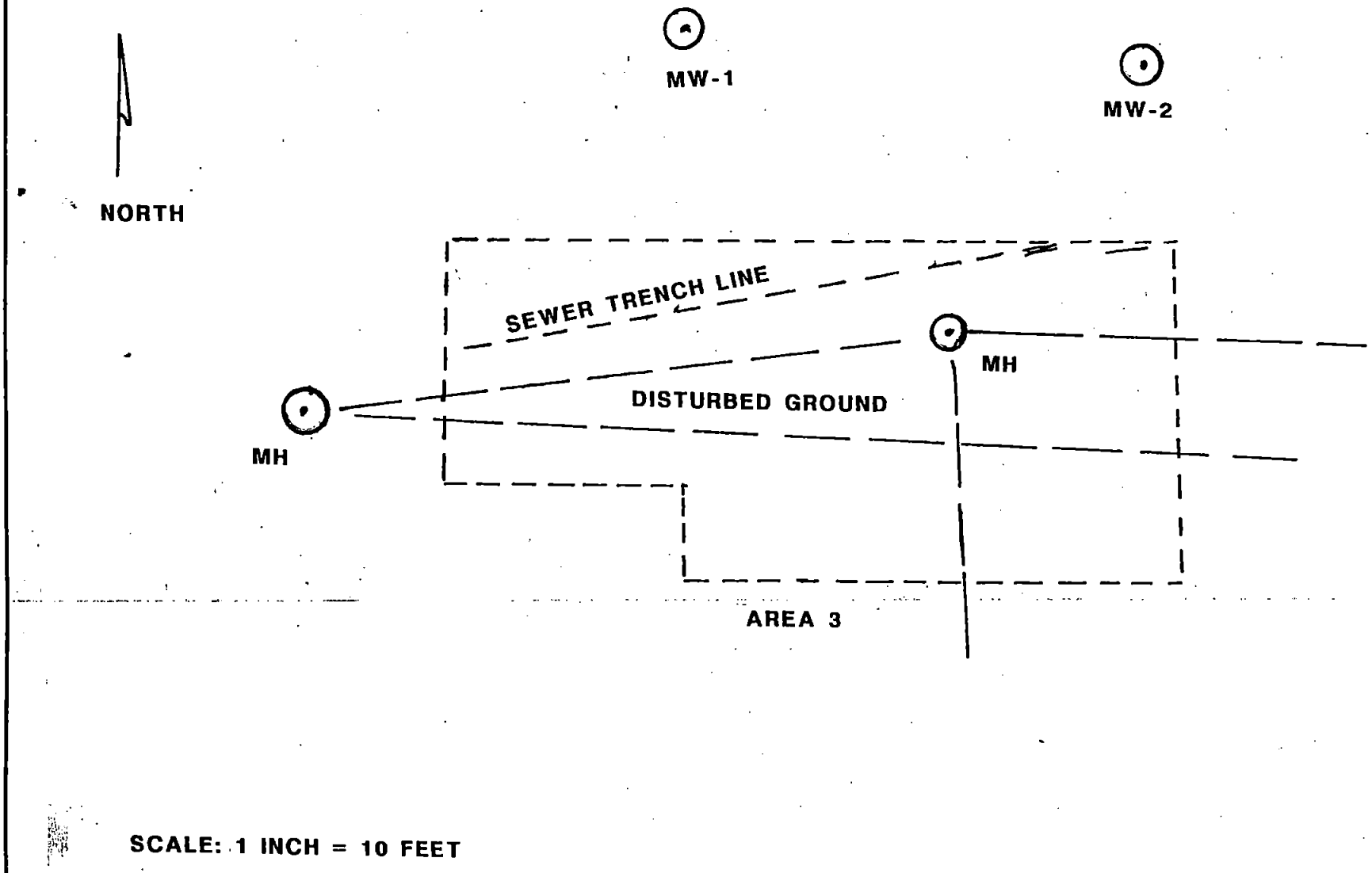


LOCATION PLAN	Area 2, Walker Subaru Used Car Lot, Renton, Washington

GPR Survey
J99-683/AH

GEO-RECON INTERNATIONAL

FIG. 2



SCALE: 1 INCH = 10 FEET

LOCATION PLAN	Area 3, Walker Subaru Used Car Lot, Renton, Washington

GPR Survey
J99-683/AH

Geo-Recon International

FIG. 3

APPENDIX H

TPS TECHNOLOGIES, INC. SOIL TREATMENT RECIEPT

Woodworth & Company, Inc.

GENERAL CONTRACTORS

1200 East D Street / Tacoma, Washington 98421
Telephone (253) 383-3585

LAKEVIEW PIT TICKET

Contractors Lic. # WOODW 377NO

Ticket # 417886
Wmaster REBA

CAUTION: HOT ASPHALT WILL BURN YOU!

ROBERT

RECEIVED *

CUSTOMER:	PURCHASE ORDER:	JOB LOAD	JOB TONS
T.P.S. 81384	T.P.S.	TOTAL	
		DAILY 2	57.93

DATE	PLANT	SILO #	JOB	PLANT	TRUCK	SEQUENCE	REFERENCE
10/12/93							
TIME 12:51			61-		2146T		

MIXTURE	GROSS	TARE	NET WT. TONS	PRICE	TOTAL
200 CONT. SOIL	106680	42260	32.21		

SPECIAL INSTRUCTIONS

64420 Net LB 2

Net Metric Tons
29.22

TAX %
PAY THIS AMOUNT

PIT B160

CUBIC YDS

REMARKS

X

SCALE OPERATOR

VISA MasterCard

Woodworth & Company, Inc.

GENERAL CONTRACTORS

1200 East D Street / Tacoma, Washington 98421
Telephone (253) 383-3585

LAKEVIEW PIT TICKET

Contractors Lic. # WOODW 377NO

Ticket # 417951
Wmaster REBA

CAUTION: HOT ASPHALT WILL BURN YOU!

ROBERT

RECEIVED *

CUSTOMER:	PURCHASE ORDER:	JOB LOAD	JOB TONS
T.P.S. 81384	T.P.S.	TOTAL	
		DAILY 3	87.75

DATE	PLANT	SILO #	JOB	PLANT	TRUCK	SEQUENCE	REFERENCE
10/12/93							
TIME 4:03			61-		2146T		

MIXTURE	GROSS	TARE	NET WT. TONS	PRICE	TOTAL
200 CONT. SOIL	101900	42260	29.82		

SPECIAL INSTRUCTIONS

59640 Net LB 2

Net Metric Tons
27.05

TAX %
PAY THIS AMOUNT

PIT B160-

CUBIC YDS

REMARKS

X

SCALE OPERATOR

VISA MasterCard

Woodworth & Company, Inc.

GENERAL CONTRACTORS

1200 East D Street / Tacoma, Washington 98421
Telephone (253) 383-3585

LAKEVIEW PIT TICKET

Contractors Lic. # WOODW 377NO

Ticket # 418139
Wmaster REBA

CAUTION: HOT ASPHALT WILL BURN YOU!

ROBERT
RECEIVED *

CUSTOMER:	PURCHASE ORDER:	JOB LOAD	JOB TONS
T.P.S. 81384	T.P.S.	TOTAL	
		DAILY 1	12.72

DATE	PLANT	SILO #	JOB	PLANT	TRUCK	SEQUENCE	REFERENCE
~~10/13/99~~							
TIME 3:51			66-		2146T		

MIXTURE	GROSS	TARE	NET WT. TONS	PRICE	TOTAL
200 CONT. SOIL	67700	42260	12.72		

SPECIAL INSTRUCTIONS

25440 Net LB 2

Net Metric Tons
11.54

TAX %
PAY THIS AMOUNT

PIT B160

REMARKS

X SCALE OPERATOR

Woodworth & Company, Inc.

GENERAL CONTRACTORS

1200 East D Street / Tacoma, Washington 98421
Telephone (253) 383-3585

LAKEVIEW PIT TICKET

Contractors Lic. # WOODW 377NO

Ticket # 417828
Wmaster REBA

CAUTION: HOT ASPHALT WILL BURN YOU!

ROBERT
RECEIVED *

CUSTOMER:	PURCHASE ORDER:	JOB LOAD	JOB TONS
T.P.S. 81384	T.P.S.	TOTAL	
		DAILY 1	25.72

DATE	PLANT	SILO #	JOB	PLANT	TRUCK	SEQUENCE	REFERENCE
10/12/99							
TIME 9:56			61-		2146T		

MIXTURE	GROSS	TARE	NET WT. TONS	PRICE	TOTAL
200 CONT. SOIL	93700	42260	25.72		

SPECIAL INSTRUCTIONS

51440 Net LB 2

Net Metric Tons
23.33

TAX %
PAY THIS AMOUNT

PIT B160

REMARKS

X SCALE OPERATOR