NW 2932

Introduction and Overview

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This report presents the results of our Supplemental Phase II Subsurface Investigation (Phase II) conducted by The Riley Group, Inc. (Riley) at Four Corner Square Shopping Center (hereafter referred to as the Site) located in Maple Valley, Washington.

The Four Corner Square shopping center is approximately 6.3 acres and includes Do-It Best Hardware and Tool Rental Center, an existing and former dry cleaners, a Dairy Queen (former gasoline station) and other retail. A dry cleaners has been on-site since 1984. The former gasoline station was on-site from approximately 1934 to 1950.

Riley understands that KRG Four Corner Square, LLC of Indianapolis, Indiana (KRG) anticipates the purchase and redevelopment of the subject Site for commercial/retail use. This report was prepared on behalf of KRG and is a privileged and confidential work product.

The report provides a preliminary analysis of soil and groundwater environmental conditions for the Site. The report presents a regulatory analysis of the environmental data for the Site, and provides a determination of whether the environmental conditions at the Site meet compliance with the requirements of the Model Toxics Control Act (MTCA), the environmental cleanup regulations administered by the Toxic Cleanup Program of the Washington State Department of Ecology (Ecology, WAC 173-340).

Background Information

The Riley Group, Inc. (Riley) conducted a Phase I Environmental Site Assessment (ESA) for the Four Corner Shopping Center property located at 23800 to 23926 Southeast Kent-Kangley Road, Maple Valley, Washington (hereafter referred to as the Site), Figure 1. Our Phase I ESA findings, conclusions, and recommendations were presented in our Final Phase I ESA Report dated September 30, 2003. Based on our Phase I ESA (2003), the following **potential** recognized environmental conditions (RECs) or business environmental risks (BERs) were identified:

1. A former gasoline station on the southeast corner of the Site between about 1934 and 1950 was considered a potential REC or BER based on the following:
   - No written records were found documenting that the former gasoline station USTs or any other associated underground improvements were removed.
   - It was unknown whether or not the station included a garage for the repair and maintenance of cars. If it did, there may have been a waste oil UST, a heating oil UST and perhaps a dry well (historically used to dispose of various petroleum or parts cleaning wastes to the subsurface environment).
   - Previous subsurface investigations to address the former gasoline station were relatively limited in scope consisting of only one test boring to a depth of 10 to 15 feet.

2. A former dry cleaners (1984 to 1993) and/or the Do-it Best Rental Center was considered a potential REC or BER since:
   - Trace concentrations of 1,2, DCE were detected by others in soil approximately 20 feet west of a former septic system. 1,2 DCE is a breakdown product of PCE which is solvent typically used by dry cleaners or as a parts cleaning solvent.
   - The effluent from the former dry cleaners and Do-it Best Tool Rental Center were connected to septic.
   - The disposal of PCE or other petroleum wastes via septic disposal systems or stormwater drains can be a relatively common/historic occurrence.
3. Shallow soil and/or perched groundwater with detectable concentrations of petroleum hydrocarbons (diesel and oil range) previously reported in the vicinity of the shopping centers stormwater retention swale constituted a potential REC or BER.
4. The north adjoining Four Corner Wrecking Yard was identified as a potential threat to Site soil and/or groundwater quality. In 1989, three groundwater monitoring wells were installed by others along the Site and wrecking yard property boundary and intercepted shallow perched groundwater at 10 to 15 feet bgs. Various PCOC (particularly benzene and PCE) were detected in well B-1. Wells B-2 did not encounter perched groundwater (a dry well).

Our Phase I ESA concluded that to better determine and define the potential RECs or BER listed above, additional subsurface investigation sampling and/or research would be required.

On November 2, 2004, Riley was authorized by the KRG Development, LLC to perform a Phase II subsurface investigation to address the 2003 Phase I ESA findings, conclusions, and recommendations. Our Phase II scope of work was outlined in our Revised Supplemental Phase II Investigation Proposal, dated November 2, 2004.

Purpose of the Report

The purpose of this report is to present the findings of this Supplemental Phase II subsurface investigation completed for the Site by Riley. Our Phase II investigation was based on our Phase I ESA (September, 2003) and subsequent discussions with KRG.

Riley's scope of work for this project was performed in general accordance with our *Agreement for Environmental Engineering Services* executed by KRG on November 21, 2004.

Organization of the Report

This report is organized to initially present basic information on Site features, conditions of the property, and to provide a summary of the soil and groundwater data collected from the Site presented with a regulatory analysis to evaluate the compliance of the environmental conditions with the requirements for remedial cleanup under the applicable Washington State regulations. Additional supporting documentation and referenced information for the report such as regulatory worksheets, laboratory analytical reports and field logs are provided as Appendices A through C. Following this introduction, the main body of the report is organized into six primary report sections of information or data analysis and interpretation as follows:

- **Project Site Conditions;**
- **Regulatory Analysis of Site Conditions under the Model Toxics Control Act (MTCA);**
- **Soils Investigation – Soil Quality at the Property;**
- **Groundwater Investigation – Groundwater Quality at the Property; and**
- **Conclusions and Recommendations**

Property Description and Setting

The Four Corner Square Shopping Center is a relatively flat irregular-shaped, approximately 7.17-acre lot that contains a retail shopping center consisting of a total of six (6) buildings including: four retail/office buildings (buildings D, E, G and I), one restaurant (Dairy Queen) and a Do-It Center Hardware and Do-It Best Rental Center. In addition, a self-service car wash is located on-Site. The current site layout and configuration is shown in Figure 2. Based on the United States Geological Survey (USGS) Black Diamond, Washington 7.5-Minute Topographic Map. The Site is situated at an average elevation of 575 feet above mean sea level.

The Site consists of four tax parcels. The Site's King County tax parcel numbers and the recorded property owner are as follows:

- Tax parcel 2722069086 (0.77 acres, owned by Four Corner Square);
- Tax parcel 2722069096 (2.42 acres, owned by Four Corner Square);
- Tax parcel 2722069096 (3.68 acres, owned by Four Corner Square); and
- Tax parcel 2722069086 (0.3 acres, owned by Four Corner Square)

The bounds and means of the Site are the Southeast Quarter of Section 27, Township 22 North, and Range 6 East of the Willamette Meridian.

Effluent for the existing Site buildings was discharged to at least three (3) septic disposal systems on-site between about 1979 to 1993 (Figure 2). In 1993, most buildings were reportedly connected to a municipal sanitary sewer line. The Dairy Queen apparently is still connected to septic.

The Site contains asphalted parking throughout and a stormwater retention grass swale on the northwest corner. Reportedly all storm water and roof water run-off are tightlined and discharged to the stormwater retention grass swale.

Typical property use in the Site vicinity includes a mix of undeveloped, residential, commercial and light industrial properties.

Geophysical Survey

In November 2004 GeRecon performed a geophysical survey on the southeast portion of the Site to locate any abandoned USTs formerly associated with the former gasoline station. No abandoned USTs were found during the geophysical survey. A copy of the geophysical survey report is included in Appendix A.

Site Geology and Hydrogeology

The Site geology and hydrogeology is based on our review of soil boring and well log records for the area and conditions encountered during our drilling explorations on-Site.

Overview of the Project Area - Boring logs for the Site vicinity indicated gravel and sand with cobbles and boulders (glacial outwash) to a depth of at least 45 feet. Static groundwater was typically reported at depth of 35 to 38 feet bgs.

Project Site – In general, Site soils encountered during drilling exploration were similar to those reported for other nearby properties (i.e., consisting of gravel and sand with cobbles and boulders [glacial outwash] to a depth of at least 45 feet). However, up to seven feet of fill exist at the northwest portion of the site (in the vicinity of the bioswale).

Perched shallow groundwater was observed along the northern property boundary. Perched groundwater was not encountered elsewhere on the property by our or previous subsurface investigations. Static groundwater was also intercepted at the Site at depths of 20 to feet bgs with a groundwater flow direction to the north-northeast.

Regulatory Analysis of Site Conditions under the Model Toxics Control Act (MTCA)

Washington's hazardous substance cleanup law, the Model Toxics Control Act (RCW 70.105D) mandates that site cleanups protect human health and the environment. The MTCA Cleanup Regulation (WAC173-340) defines the approach for establishing cleanup requirements for individual sites, including the establishment of cleanup standards and selection of cleanup actions.

Current and Proposed Use of the Site

Current Use

The Site is currently zoned CB (Community Business). Given the current use of the Site as an shopping center and it's commercial zoning, the property qualifies as a commercial property according to MTCA Sections 740(1)(a) and 745(1)(a).

Proposed Use

Riley is not aware of KRG's intent or interest in rezoning the Site (if any).

Given the proposed commercial use, the Site qualifies as a commercial property according to MTCA Sections 740(1)(a) and 745(1)(a). Therefore, the MTCA Cleanup Levels (Method A or B) for Unrestricted Land use are considered most appropriate for the purpose of this investigation.

Contaminants of Potential Concern (COPCs)

Based on our observations of Site conditions, current and historic Site activities, findings from previous environmental studies, Riley determined that the primary contaminants of potential concern (COPCs) for the Site are:

- Gasoline total petroleum hydrocarbons (TPH) & Diesel and oil TPH & Benzene, toluene, ethylbenzene and total xylenes (BTEX) ;
- Halogenated volatile organic compounds (HVOCs).

Previous environmental studies performed by Earth Consultants (1989) analyzed soil and/or groundwater samples for other COPC including polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons (PAHs), and priority pollutant metals. Based on their findings PCBs, PAHs, or metals were either not detected at the analytical detection limit, or were detected at concentrations below the applicable cleanup level.

Applicable MTCA Cleanup Standards for the Site

For unrestricted land uses, the MTCA regulation provides two options for establishing soil and groundwater cleanup standards – Method A and Method B.

Method A cleanup standards have been adopted for specific purposes and are intended to provide conservative cleanup levels for sites undergoing routine site characterization or cleanup actions or those sites with relatively few hazardous substances.

Method B cleanup levels are set using a site risk assessment, which focus on the use of "reasonable maximum exposure" assumptions based on site-specific characteristics and toxicity of the contaminants of concern. The Method B cleanup approach uses the site-specific characteristics and toxicity of the COPC and calculates the human exposure risk via: (1) direct soil contact; and (2) the soil-to-groundwater pathway.

For purposes of comparison, analytical laboratory data for this project were compared to the MTCA Method A Soil and Groundwater Cleanup Levels (WAC 173-340-720 and 740). The MTCA Method A Cleanup Levels are summarized in Tables 1 and 2.

Soils Investigation – Soil Quality at the Property

On November 10, 11, and 12, 2004, a total of nine hollow stem auger borings (HA-1 through HA-9), four shallow hand auger borings (HA-1 through HA-4) and two direct push soil and soil gas sampling probes were advanced to evaluate soil and soil gas quality underlying the Site. Test locations are shown in Figure 2. Hollow stem auger borings were drilled using a Mobile B61 auger drill rig owned and operated by Holt Drilling of Puyallup, WA. Hand auger soil borings and test probes were advanced by Riley. Soil borings were located at follows:

- Former Gasoline Station SEC of Site: HS-1 through HS-4
- Former Septic Tank and Leach Field: HS-5 through HS-9
- Inside Former Dry Cleaners Tenant Space: JH-1 and JH-2
- Bioswale: HS-7 through HS-9; HA-1 through HA-4

In addition, Riley drilled and installed three groundwater monitoring wells (MW-1 through MW-3) at the Site using a truck mounted air rotary drill rig owned and operated by R&R Drilling of Puyallup, WA. Due to the very dense cobbles and boulders encountered during drilling, soil sample recovery or collection was not feasible during well installation.

Soil Sample Collection – A total of 29 soil samples were collected for this project. In general, soils samples were collected continually from borings HA-1 to HA-4 and JH-1 and JH-2; or at 2.5 to 5.0-foot sample depth intervals from hollow stem auger borings HS-1 through HS-9. All soil samples were screened in the field for the presence of the COPC using a water sheen test and a portable gas analyzer equipped with a photo-ionization detector (PID). Field screening results are summarized in Table 1.

Based on field screening results, a total of 36 discrete soil samples were selected for laboratory analysis

Soil samples collected for this project were transferred to clean laboratory-provided glassware with Teflon-lined lids. The sample jars were labeled with date, time, site location (4C), soil boring number, and sample depth. For example, sample 4C-HS1-5-6 was collected from soil boring HS1 at the 5-6 foot bgs depth interval. All soil samples were placed in an ice-chilled cooler and transported to the laboratory under EPA-recommended chain-of-custody protocol.

Lab Analysis of Soil Samples - Soil samples were submitted to OnSite Laboratories of Redmond, WA and analyzed for one or more of the following COPC:

- Diesel and oil range total petroleum hydrocarbon (TPH) using Ecology Test Method NWTPH-Dx with silica gel cleanup[1];
- Gasoline TPH with BTEX (benzene, toluene, ethylbenzene and total xylenes) using Ecology Test Method NWTPH-G/BTEX;
- Halogenated volatile organic compounds (HVOCs) by EPA Method 8260;

Soil samples collected for HVOC and Gas TPH/BTEX analysis were collected and preserved in accordance with EPA's method 5035A protocols.

Subsurface Soil Quality Results - The analytical data for the soil samples collected at the Site and the corresponding MTCA Method A Soil Cleanup Levels are summarized in Table 1 and below.

Former Gasoline Station

Five of the five soil samples selected for laboratory analysis had non-detectable concentrations of gasoline, diesel and oil range TPH.

Former Dry Cleaners Location

Two soil samples collected at depths of 3 feet bgs (samples 4C-JH1-3 and JH2-3) had a PCE concentration of 0.047 km/kg (ppm) and 0.017 mg/kg. Trace concentrations of cis-1,2Dicchloroethane and trichloroethene were also detected in both samples (Table 1).

PCE is a common dry cleaning solvent. Cis-1,2Dichloroethane and trichloroethene are common or naturally occurring breakdown, or degradation, products of PCE.

Soil gas samples collected from JH1-3 and JH2-3 had a PCE soil gas concentration of 1.2 and 7.1 parts per billion (ppb).

[1] Silica gel cleanup is performed prior to laboratory analysis to remove any naturally occurring biogenic material that interfere with TPH results.

Interpretation of Findings

Former Gasoline Station

Site soils and groundwater intercepted in the vicinity of the former gasoline station are in full compliance with the MTCA Method A Soil Cleanup Levels. Based on the results of our Supplemental Phase II Investigation and previous investigations performed by others, the former gasoline station (USTs, pump islands, etc.) has not adversely affected soil and/or groundwater.

Former Dry Cleaners Location

Soil samples collected beneath the former dry cleaning machine location and along the drain line had PCE concentrations (ranging from 0.017 mg/kg to 0.047 mg/kg) below the MTCA Method A Soil Cleanup Level for Unrestricted Land Use (0.05 mg/kg). Based on the locations of the samples collected, it is our opinion that our sampling and results reflects a worse case condition.

PCE is a common dry cleaning solvent. Cis-1,2Dichloroethane and trichloroethene are common or naturally occurring breakdown, or degradation, products of PCE.

Soil gas samples collected from JH1-3 and JH2-3 had a PCE soil gas concentration of 1.2 and 7.1 parts per billion (ppb).

Groundwater Investigation – Groundwater Quality at the Property

This section summarizes and interprets the findings associated with the installation and sampling of 3 permanent groundwater monitoring wells and sampling of 2 existing wells across the project site

Installation and Sampling of Groundwater Monitoring Wells

The field work for this study involved the installation and sampling of 3 permanent 2-inch diameter PVC monitoring wells (MW1, MW2, and MW3) by Riley in November 2004. The wells were installed using an air rotary (ODEX) drill rig and completed with traffic-rated flush mount monuments and lockable well caps. Static groundwater was intercepted at all wells, at depths of 20 to 25 feet below ground surface. Drilling auger and sampling equipment were steam cleaned in between sampling events and/or well locations. Soil cuttings and decon and well development water was drummed in 55-gallon drums, labeled and left on-site. Soil cuttings generated during drilling were stockpiled on-site on, and covered with, plastic sheeting.

In addition, Riley developed and sampled the existing 2-inch groundwater monitoring wells B-1 and B-4. Riley searched for, but was unable to locate the former well B-2.

MW-1 is located hydrogeologically downgradient of the former gasoline station location. Wells MW-2 and MW-3 are located downgradient of the former dry cleaners location, former septic tank location(s), and the Best Do-It Rental Center. In addition, well MW-3 is located close to the existing well B-1 (well B-1 was installed in 1989 and intercepts the shallow perched groundwater).

Lab Analysis of Groundwater Samples - Groundwater samples were submitted to Friedman and Bruya Analytical Laboratories of Seattle, Washington, and analyzed for one or more of the following COPC:

- Diesel and oil range TPH using Ecology Test Method NWTPH-Dx and silica gel cleanup (to remove any naturally occurring biogenic materials that interfere with TPH results);
- Gasoline TPH with BTEX using Ecology Test Method NWTPH-G/BTEX; and
- Halogenated volatile organic compounds (HVOCs) by EPA Method 8260.

Lab Results for COPC in Groundwater – No COPCs were detected in groundwater collected from wells MW-1, MW-2, MW-3, and B-4. Wells MW-1, MW-2, and MW-3 are screened in the static (deeper) water table. Well B-4 was screened in the shallow perched groundwater near the retention bioswale.

Groundwater samples collected from shallow well B-1 had non-detectable VOC concentrations but a diesel and oil TPH concentration of 4,100 ppb and 4,500 ppb, respectively. The diesel and oil TPH concentrations exceed the MTCA Method A Groundwater Cleanup Level of 500 ppb.

Groundwater Flow at the Site – Riley measured top of well casing (TOC) elevations using a survey level and stadia rod based on an arbitrary selected reference datum. Groundwater flow is presumed to be to the north.

Highest Beneficial Use of Site Groundwater – Potential Drinking Water Source

In accordance with the provisions of WAC 173-340-720, the groundwater cleanup standards, the interpretation of site conditions in this report has assumed the potential use of the site groundwater as a drinking water source, and that the highest beneficial use and the reasonable maximum exposure under current and future conditions would be through ingestion of drinking water and other domestic uses. Thus the environmental quality standards from MTCA Table 720-1, Method A Cleanup Levels for Groundwater have been applied to the analysis of site groundwater. Consequently, the interpretation has focused on the need for protection of the groundwater quality at the site in terms of its potential for use as a source of drinking water.

Protection of Groundwater - Based on the soils data for the site and our groundwater quality findings, it could be interpreted that Site soils are protective of groundwater. This interpretation could be made due to the following facts:

- Soils meet compliance with the Method A soil cleanup standards. The soils standards under Method A are established to be protective of the environmental quality of site groundwater;

- COPC were not detected in our groundwater investigation and in full compliance with the applicable Method A Groundwater Cleanup Standards, with the exception of shallow well B-1.

Conclusions & Recommendations

This report section presents a summary of the findings and the conclusions of the investigation. In addition, this section provides some recommendations for future contingencies and action regarding the potential ownership or development of the property.

Former Gasoline Station (Existing Dairy Queen)

Based on the areas evaluated by Riley and by previous investigations by others, the former gasoline station has not adversely affected Site soil or groundwater quality and is in full compliance with the MTCA Method A Cleanup Levels for Unrestricted Land Use. In addition, no USTs or other buried metallic objects (such as drums) were identified in areas surveyed by our geophysical subcontractor.

As with redevelopment of all former gasoline station property, and regardless of the level of subsurface investigations performed, the Client and Contractor should be prepared to encounter some petroleum contaminated soils and/or abandoned subsurface improvements (including but not limited to USTs, buried concrete slabs, debris, etc.) during site grading or earthwork.

Former Dry Cleaners & Septic Tank/Leach Field

Shallow soils beneath the former dry cleaning machine location, sewer drain line, and septic field had relatively low PCE concentrations (ranging from 0.0031 mg/kg to 0.047 mg/kg) below the MTCA Method A Soil Cleanup Levels For Unrestricted Land Use. The MTCA Method A Soil Cleanup Level for PCE in soil is 0.05 mg/kg.

Shallow soil gas samples collected beneath and inside the former dry cleaner tenant space had trace concentrations of PCE. The Washington State Department of Ecology MTCA Cleanup Regulation currently does not list cleanup levels for soil vapor. However, the soil vapor concentrations obtained during this project are below the generic risk based concentrations (RBCs) as calculated by Oregon Department of Environmental Quality (ODEQ)[2] for the vapor intrusion into building pathway.

[2] ODEQ Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites, 2003.

Static groundwater intercepted by wells MW2 and MW3, located downgradient of the former dry cleaners and former septic field, had non-detectable concentrations of HVOCs (including dry cleaning solvents and their degradation products). Based on our findings, the former dry cleaners and septic field and the Do-it Center Tool Rental has not adversely affected Site groundwater.

Based on our findings, a cleanup action of shallow soils with trace PCE concentrations beneath the former dry cleaners or septic field is not required under MTCA. However, if marginally impacted shallow soils in these documented areas are excavated, graded, and/or transported off-site they will require special handling, disposal and/or treatment as a contaminated solid waste.

Stormwater Retention Swale Fill Soils

Shallow soils intercepted in the vicinity of the stormwater bioswale had trace concentrations of diesel and/or oil range TPH (ranging from non-detect to 77 mg/kg to 210 mg/kg) below the MTCA Method A Soil Cleanup Level for Unrestricted Land Use (which is 2,000 mg/kg).

In addition, perched groundwater collected from well B-4 had non-detectable concentrations of gasoline TPH/BTEX, diesel TPH, oil TPH and HVOCs (chlorinated solvents).

Based on our findings, a cleanup action of shallow soils with trace TPH concentrations is not required under MTCA. However, if shallow soils in areas of documented TPH impacted soils are excavated, graded, and/or transported off-site they will require special handling, disposal or treatment as a contaminated solid waste.

North Adjoining Wrecking Yard

Shallow perched groundwater sampled from well B-1 had a diesel and oil TPH concentration of 4,100 ppb and 4,500 ppb, respectively. These TPH concentrations exceed the MTCA Method A Groundwater Cleanup Levels for diesel and oil range TPH in groundwater of 500 ppb. The origin of this perched groundwater contamination is likely from the north adjoining wrecking yard and is associated with the previously documented discharge line emanating from the wrecking yard.

This groundwater contamination seems limited to the shallow perched water zone since groundwater samples collected from the nearby and deeper groundwater monitoring well MW-3 had non-detectable concentrations of TPH (as gasoline, diesel and oil), as well as HVOCs.

Since groundwater concentrations at well B-1 exceed the MTCA Method A Groundwater Cleanup Levels, additional investigation and/or cleanup may be required, which may in the interim include continued groundwater monitoring.

References

Washington State Department of Ecology, Toxics Cleanup Program, Guidance for Remediation of Petroleum Contaminated Soils Pub. No. 91-30, Revised Nov. 1995.

Chapter 173-340 Washington Administrative Code (WAC), *Model Toxics Control Act (MTCA)*, Amended 2-12-01.

Chapter 173-303 Washington Administrative Code (WAC), *Dangerous Waste Regulations* Amended 04-03.

Limitations

Work for this project was performed and this report prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of Client for specific application to the referenced property. This report does not represent a legal opinion. No other warranty, expressed or implied, is made.

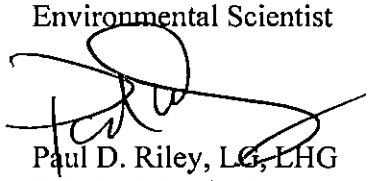
As previously stated in this report, our interpretations and conclusions are based on visual observations of accessible areas at the time of our investigation and are not meant to pertain to other areas not inspected or evaluated during our investigation.

Signatures of Environmental Professionals

Any questions regarding the work within this report, the presentation of the information, or the interpretation of the data are welcome and should be referred to the undersigned.

Sincerely,

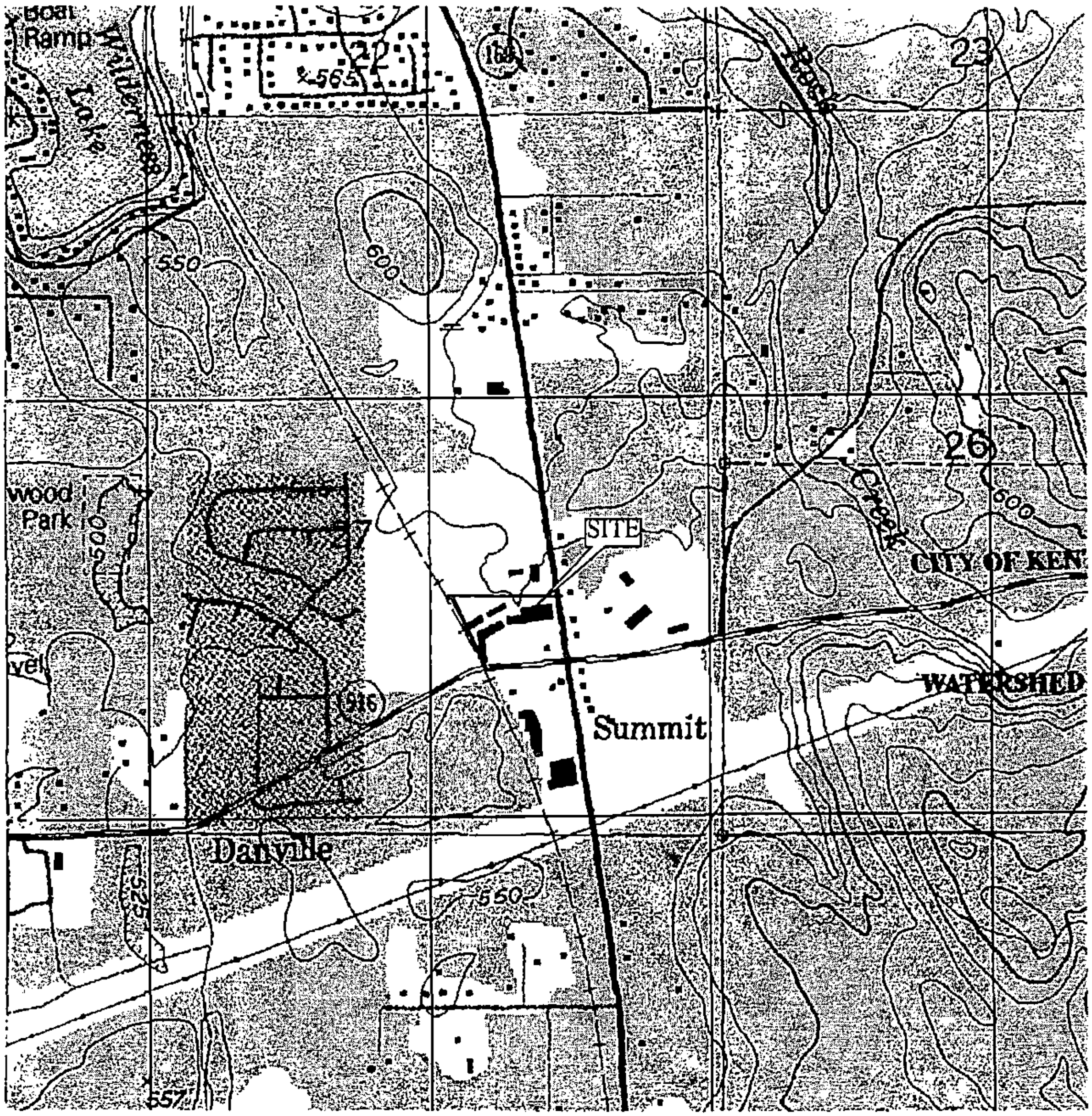
Lannie Smith, CHMM
Environmental Scientist



Paul D. Riley, LG, LHG
Principal Geologist

Report Distribution *Ms. Jil Froelich @ KRG Four Corner Square, LLC (3 bound copies, one unbound copy & Electronic PDF Format)*

Attachments



Boat
Ramp
Wilderness
Lake
22
23
565
168
550
600
26
27
Park
Creek
SITE
CITY OF KEN
WATERSHED
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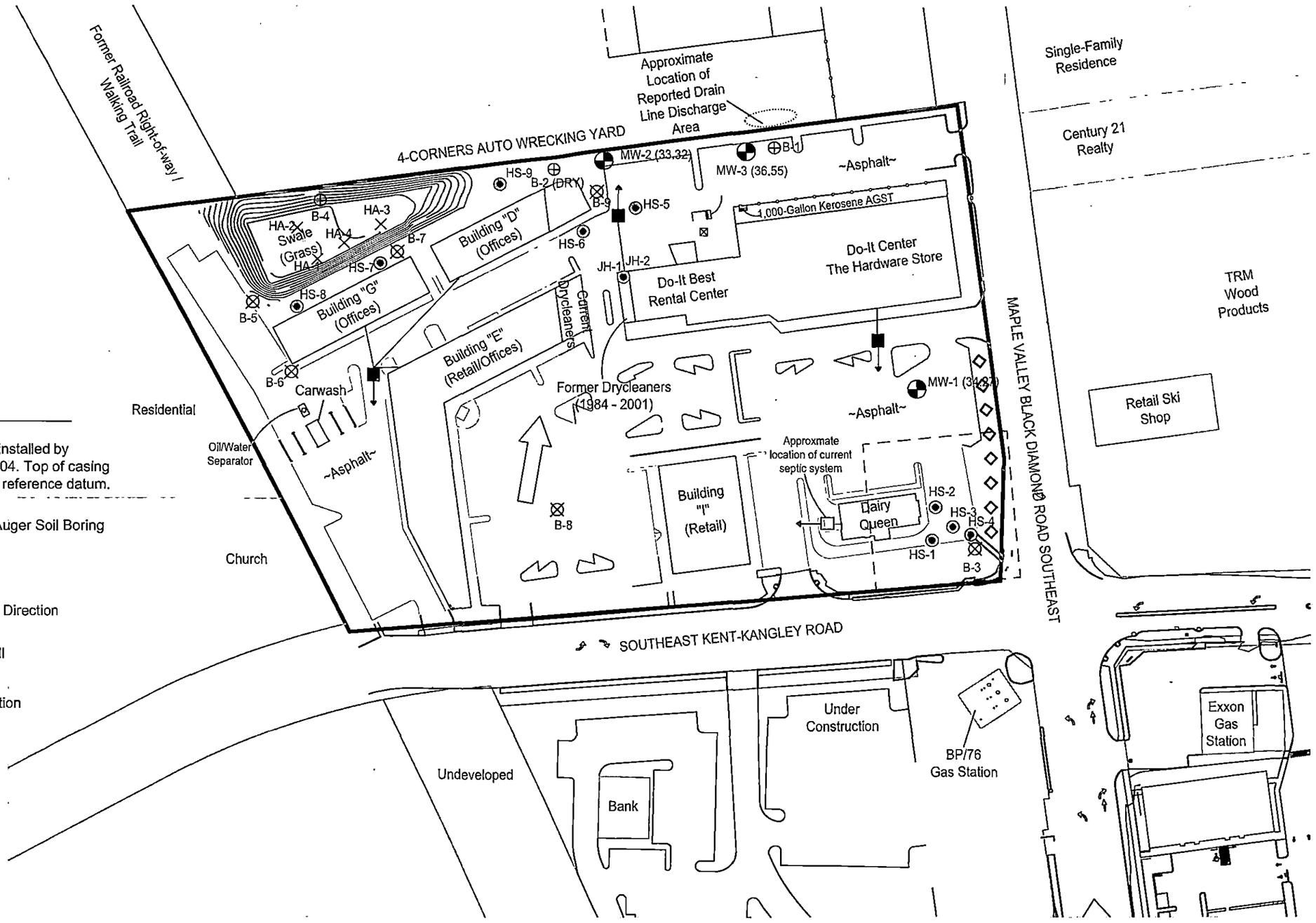
Summit
Danville
525
560
557



LEGEND

(34.27) 2-inch Well Locations. Wells installed by Riley on November 15-16, 2004. Top of casing elevations based on arbitrary reference datum.

Hollow Stem Auger & Hand Auger Soil Boring Locations By Riley

× Hand Auger Locations

Presumed Groundwater Flow Direction

Groundwater Monitoring Well (April 1989)

Approximate soil boring location (April 1989)

Approximate Location of Former Gas Station, Pump Islands and Restaurant (~1934-1950)

Approximate location of former septic tank system and associated drain field discharge flow.

Note: Figure modified from Conceptual Site Plan (Option 14B) prepared by BARGHAUSEN Consulting Engineers, Inc. dated April 2, 2003.

0 100 200

Approximate Scale in Feet

The Riley Group, Inc.
17522 BOTHELL WAY NE-SUITE A
BOTHELL, WASHINGTON 98011

Four Corner Square Shopping Center

Site Map

Figure 2

Drawn by: JC

Date drawn: 11/1/2004

Site Address: 23800 - 23926 SE Kent-Kangley Road, Maple Valley, Washington

Table 1 - Summary of Subsurface Soil Sample Results for the Four Corners Shopping Center Maple Valley, Washington. The Riley Group, Inc. Project #2003-165d

Sample Number	Sample Date	Sample Depth (ft. bgs)	Sample Type	PID[1]	HCID			Diesel TPH	Oil TPH	VOCs[3]	HVOCs[3]		
					Gas	Diesel	Oil				DCE	TCE	PCE
Former Dry Cleaners													
Soil Samples													
4C-JH1-1/2	11/10/04	1-2	discrete	0.7	---	---	---	---	---	---	0.013	0.0019	0.047
4C-JH2-1/2	11/10/04	1-2	discrete	0.4	---	---	---	---	---	---	0.0011	ND<0.0011	0.017
Vapor Samples													
4C-JH1-3	11/10/04	3	vapor	1.1	---	---	---	---	---	---	ND<1	ND<1	1.2
4C-JH2-3	11/10/04	3	vapor	6.2	---	---	---	---	---	---	ND<1	ND<1	7.1
Stormwater Retention Swale													
4C-HA1-0.5/1	11/10/04	0.5-1	discrete	0.1	---	---	---	ND	220	ND	---	---	---
4C-HA2-0.5/1	11/10/04	0.5-1	discrete	0.2	---	---	---	ND	200	ND	---	---	---
4C-HA3-0.5/1	11/10/04	0.5-1	discrete	0.4	---	---	---	ND	360	ND	---	---	---
4C-HA4-0.5/1	11/10/04	0.5-1	discrete	0.2	---	---	---	ND	330	ND	---	---	---
Former Service Station													
4C-HS1-2.5/4	11/11/04	2.5-4	discrete	N/A	---	---	---	---	---	---	---	---	---
4C-HS1-7.5/9	11/11/04	7.5-9	discrete	0.0	---	---	---	---	---	---	---	---	---
4C-HS1-12.5/13	11/11/04	12.5-13	discrete	0.0	---	---	---	---	---	---	---	---	---
4C-HS2-2.5/4	11/11/04	2.5-4	discrete	0.1	ND<23	ND<58	ND<120	---	---	---	---	---	---
4C-HS2-7.5/9	11/11/04	7.5-9	discrete	0.1	ND<22	ND<56	ND<110	---	---	---	---	---	---
C-HS2-12.5/13.	11/11/04	12.5-13.5	discrete	0.2	---	---	---	---	---	---	---	---	---
4C-HS3-2.5/4	11/11/04	2.5-4	discrete	0.1	ND<22	ND<56	ND<110	---	---	---	---	---	---
4C-HS4-2.5/4	11/11/04	2.5-4	discrete	0.2	---	---	---	---	---	---	---	---	---
4C-HS4-7.5/9	11/11/04	7.5-9	discrete	2.5	ND<24	ND<59	ND<120	---	---	---	---	---	---
4C-HS4-12.5/14	11/11/04	12.5-14	discrete	0.7	ND<24	ND<61	ND<120	---	---	---	---	---	---
Former Septic Drain Field													
4C-HS5-2.5/4	11/11/04	2.5-4	discrete	0.3	---	---	---	---	---	---	---	---	---
4C-HS5-7.5/9	11/11/04	7.5-9	discrete	0.2	---	---	---	---	---	---	ND<0.0011	ND<0.0011	0.0031
4C-HS5-12.5/14	11/11/04	12.5-14	discrete	0.2	---	---	---	---	---	---	ND<0.0012	ND<0.0012	0.025
4C-HS6-2.5/4	11/11/04	2.5-4	discrete	0.4	---	---	---	---	---	---	---	---	---
4C-HS6-7.5/9	11/11/04	7.5-9	discrete	0.3	---	---	---	---	---	---	ND<0.0012	ND<0.0012	ND<0.0012
4C-HS6-12.5/14	11/11/04	12.5-14	discrete	0.1	---	---	---	---	---	---	ND<0.0014	ND<0.0014	ND<0.0014
Near Stormwater Retention Swale													
4C-HS7-2.5/4	11/12/04	2.5-4	discrete	0.0	---	---	---	ND<27	ND<54	---	---	---	---
4C-HS7-7.5/9	11/12/04	7.5-9	discrete	0.0	---	---	---	ND<29	210	---	---	---	---
4C-HS7-12.5/14	11/12/04	12.5-14	discrete	0.0	---	---	---	---	---	---	---	---	---
4C-HS8-7.5/9	11/12/04	7.5-9	discrete	0.0	---	---	---	ND<36	77	---	---	---	---
C-HS8-12.5/13.	11/12/04	12.5-13.5	discrete	0.2	---	---	---	---	---	---	---	---	---
4C-HS9-2.5/4	11/12/04	2.5-4	discrete	0.0	---	---	---	ND<27	130	---	ND<0.0016	ND<0.0016	ND<0.0016
4C-HS9-7.5/9	11/12/04	7.5-9	discrete	0.0	---	---	---	ND<28	ND<56	---	ND<0.0014	ND<0.0014	ND<0.0014
MTCA Method A Soil Cleanup Levels				---	---	---	---	2,000	2,000	---	---	0.03	0.05

Notes:

Unless otherwise noted, all analytical results are given in milligrams per kilogram (mg/kg), equivalent to parts per millions (ppm)

[1] Soil and vapor samples were screened in the field with a portable photoionization detector (PID); results are given in pp

[2] The higher cleanup level is applicable if no benzene is detected in soil.

[3] Only HVOCs detected above the laboratory's analytical detection limit are noted in this table.

feet bgs, feet below grade surface

HCID, Washington State Department of Ecology's Qualitative Hydrocarbon Identification Test Method.

TPH-D, diesel range total petroleum hydrocarbons determined using Test NWTPH-Dx

TPH-O, heavy oil range total petroleum hydrocarbons determined using Test NWTPH-Dx

VOCs, Volatile organic compounds determined using Test Method 8260B.

HVOCs, Halogenated volatile organic compounds determined using EPA Test Method 8260

DCE, (cis) 1,2-Dichloroethene.

TCE, Trichloroethene.

PCE, Tetrachloroethene.

ND, Not Detected at noted analytical detection limit.

---, not analyzed or not applicable.

MTCA, Ecology Model Toxics Control Act Method A Soil Cleanup Levels (WAC 173-340, Table 740-1)**Bold** concentrations above

MTCA Method A Soil Cleanup Levels

Table 2. Summary of Analytical Results for Groundwater Samples. Four Corners Shopping Center Maple Valley, Washington. The Riley Group, Inc. Project #2003-165d

Sample Number	Sample Date	Depth to water (ft)	Water elevation	PID[1]	Gas TPH	BTEX Compounds				Diesel TPH	HVOCs[2]
						B	T	E	X		
Existing Wells											
Well B1											
4C-B1-H_2O	11/17/04	5.98	---	0.2	ND < 50	ND < 1	ND < 1	ND < 1	ND < 3	**4,100/4,500[3]**	ND
B1, WS-4	11/94	---	---	---	---	ND < 1	ND < 1	ND < 1	ND < 7	---	ND
B1, WS-3	11/93	---	---	---	---	ND < 1	ND < 1	ND < 1	ND < 3	---	ND
B1, WS-2	10/92	---	---	---	---	ND < 1	ND < 1	ND < 1	ND < 3	---	ND
B1, WS-1	4/89	---	---	---	---	6.1	95	2.7	230	**4,000**	2, PCE
Well B4											
4C-B4-H_2O	11/15/04	15.85	---	0.1	ND < 100	ND < 1	ND < 1	ND < 1	ND < 3	ND < 250	ND
B4, WS-1	4/89	---	---	---	---	ND < 1	ND < 1	ND < 1	ND < 3	**1,000**	ND
Wells Installed November 2004											
4C-MW1-H_2O	11/16/04	22.15	12.12	0.3	ND < 50	ND < 1	ND < 1	ND < 1	ND < 3	ND < 250	ND
4C-MW2-H_2O	11/16/04	25.45	7.87	0.2	ND < 50	ND < 1	ND < 1	ND < 1	ND < 3	ND < 250	ND
4C-MW3-H_2O	11/17/04	23.72	12.83	12.8	ND < 50	ND < 1	ND < 1	ND < 1	ND < 3	ND < 250	ND
MTCA Method A Groundwater Cleanup Levels	---	---	---	---	800/1,000*	5	1,000	700	1,000	500	5, PCE

Notes:
Sample Date 11/2004 were collected by The Riley Group, Inc. Previous Sample Dates were collected and reported by others.
Depth to water measured using electronic water level meter prior to sampling.
Water elevation based on surveying in the top of well casing (TOC) elevations.
[1] Soil and vapor samples were screened in the field with a portable photoionization detector (PID); results are given in ppm.
[2] Reporting levels and cleanup levels are analyte specific.
[3] Sample was run a second time for motor oil range compounds.
All results and detection limits given in ppb, parts per billion (ug/L)
MTCA, Washington Department of Ecology Model Toxics Control Act Method A
Groundwater Cleanup Levels (WAC 173-340-900, Table 720-1).
TPH, total petroleum hydrocarbons.
BTEX, Benzene, Toluene, Ethyl Benzene, and Xylene
Gas TPH/BTEX determined using Ecology Test Method NWTPH-G with BTEX
Diesel TPH determined using Ecology Test Method NWTPH-DX
HVOCs, Halogenated Volatiles determined using EPA Test Method EPA 8260
ND: non-detect, contaminant not detected at noted analytical detection limit.
---, not applicable, no cleanup level has been established
* the higher cleanup level is applicable if no benzene is detected in groundwater.

GEO RECON INTERNATIONAL

applied geophysics

November 12, 2004
J04-750/AK

The Riley Group
10728 Lake City Way NE
Seattle, WA 98125

RE: UST Search
NW Corner, Maple Valley-Black Diamond Road (Hwy 169) and the Kent-Kangley Road (Hwy 516), King County, Washington.

This letter reports the results of a geophysical exploration for underground storage tanks (UST) at the site of a former gasoline service station at the NW Corner of the Maple Valley-Black Diamond Road (Hwy 169) and the Kent-Kangley Road (Hwy 516), King County, Washington. The site is currently occupied by a Dairy Queen Restaurant facility in the 4-Corner Square Shopping Center. The work was completed on November 8, 2004.

Results of the Survey

The respective area was scanned with Ground Penetrating Radar (GPR) and with an Electro-magnetic tool. Depth penetration with the GPR was to 10 to 12 feet. A reported septic tank was found lying east of the Dairy Queen facility.

No evidence of a gasoline UST was located in the survey.

The former service station was reported to have occupied the extreme SE corner of the property. It may be that the tanks (USTs) were in the area acquired by the expansion of Highway 169. A possible underlying concrete surface was discovered lying west of the Dairy Queen facility, which may be associated with the former restaurant reported on the property.

Methods

An Electro-magnetic (EM) device was used to look for buried metal targets. Small metal objects in the near surface (1 to 2 feet) will have an EM response equivalent to a larger object (UST) at depth. The signal strength, size and continuity of the response at the

surface may indicate a possible UST. Those EM targets that may be possible USTs were then investigated with Ground Penetrating Radar (GPR) to assess the relative depth, size and ground projection of the object; i.e. to evaluate if the object is or is not a UST.

The electro-magnetic or EM device transmits and receives an electro-magnetic signal at a frequency of 6 kHz. The EM signal is transmitted through the subsurface and which generates current flow through the ground. The induced ground current generates a magnetic field that is dependent on the ground conductivity and which is also received at the receiver. The two signals, the transmitted and ground response signals, are balanced (nulled) for a zero response in the instrument electronics. When the ground conditions change, for example, when the transmitted signal encounters buried metal, the ground conductivity changes and the balance or null point is changed, and the instrument responds with an audible signal and meter reading of the change. Depending on the size of the metal object, the penetration is up to 15 feet in depth. One-gallon cans have been detected at depths of up to 3 to 4 feet, with 55-gallon drums at depths of up to 8 to 9 feet.

The Ground Penetrating Radar (a GSSI, SIR System 2) utilized a 400 Mega-Hertz antenna. The GPR antenna used for this investigation transmits a 2.5 nano-second (ns) pulse at a center frequency of 400 Mega-Hertz for the selected scan rate of 16 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 in the instrument consol. The character of the reflection is used to interpret the source of the reflection.

The information presented in this report is based upon geophysical measurements made by generally accepted methods and field procedures, and our interpretation of these data. The presented information is based upon our best estimate of subsurface conditions considering the geophysical results and all other information available to us. These results are interpretive in nature and are considered to be a reasonably accurate presentation of the existing conditions within the limitations of the method or methods employed.

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
Principal Geophysicist

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

November 23, 2004

Paul Riley
The Riley Group, Inc.
10728 Lake City Way NE
Seattle, WA 98125

Re: Analytical Data for Project 2003-165d
Laboratory Reference No. 0411-097

Dear Paul:

Enclosed are the analytical results and associated quality control data for samples submitted on November 11, 2004.

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: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

Case Narrative

Samples were collected on November 10, 2004 and received by the laboratory on November 11, 2004. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Date Extracted:	11-15-04
Date Analyzed:	11-15-04
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	11-097-03
Client ID:	**4C-JH1-1/2**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0012
Chloromethane	ND		0.0012
Vinyl Chloride	ND		0.0012
Bromomethane	ND		0.0012
Chloroethane	ND		0.0012
Trichlorofluoromethane	ND		0.0012
1,1-Dichloroethene	ND		0.0012
Iodomethane	ND		0.0060
Methylene Chloride	ND		0.0060
(trans) 1,2-Dichloroethene	ND		0.0012
1,1-Dichloroethane	ND		0.0012
2,2-Dichloropropane	ND		0.0012
(cis) 1,2-Dichloroethene	0.013		0.0012
Bromochloromethane	ND		0.0012
Chloroform	ND		0.0012
1,1,1-Trichloroethane	ND		0.0012
Carbon Tetrachloride	ND		0.0012
1,1-Dichloropropene	ND		0.0012
1,2-Dichloroethane	ND		0.0012
Trichloroethene	0.0019		0.0012
1,2-Dichloropropane	ND		0.0012
Dibromomethane	ND		0.0012
Bromodichloromethane	ND		0.0012
2-Chloroethyl Vinyl Ether	ND		0.0060
(cis) 1,3-Dichloropropene	ND		0.0012
(trans) 1,3-Dichloropropene	ND		0.0012

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 11-097-03
Client ID: 4C-JH1-1/2

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0012
Tetrachloroethene	0.047		0.0012
1,3-Dichloropropane	ND		0.0012
Dibromochloromethane	ND		0.0012
1,2-Dibromoethane	ND		0.0012
Chlorobenzene	ND		0.0012
1,1,1,2-Tetrachloroethane	ND		0.0012
Bromoform	ND		0.0012
Bromobenzene	ND		0.0012
1,1,2,2-Tetrachloroethane	ND		0.0012
1,2,3-Trichloropropane	ND		0.0012
2-Chlorotoluene	ND		0.0012
4-Chlorotoluene	ND		0.0012
1,3-Dichlorobenzene	ND		0.0012
1,4-Dichlorobenzene	ND		0.0012
1,2-Dichlorobenzene	ND		0.0012
1,2-Dibromo-3-chloropropane	ND		0.0060
1,2,4-Trichlorobenzene	ND		0.0012
Hexachlorobutadiene	ND		0.0060
1,2,3-Trichlorobenzene	ND		0.0012

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	87	71-126
Toluene, d8	89	73-130
4-Bromofluorobenzene	90	70-130

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B

page 1 of 2

Date Extracted:	11-15-04
Date Analyzed:	11-15-04
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	11-097-04
Client ID:	**4C-JH2-1/2**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0011
Chloromethane	ND		0.0011
Vinyl Chloride	ND		0.0011
Bromomethane	ND		0.0011
Chloroethane	ND		0.0011
Trichlorofluoromethane	ND		0.0011
1,1-Dichloroethene	ND		0.0011
Iodomethane	ND		0.0054
Methylene Chloride	ND		0.0054
(trans) 1,2-Dichloroethene	ND		0.0011
1,1-Dichloroethane	ND		0.0011
2,2-Dichloropropane	ND		0.0011
(cis) 1,2-Dichloroethene	0.0011		0.0011
Bromochloromethane	ND		0.0011
Chloroform	ND		0.0011
1,1,1-Trichloroethane	ND		0.0011
Carbon Tetrachloride	ND		0.0011
1,1-Dichloropropene	ND		0.0011
1,2-Dichloroethane	ND		0.0011
Trichloroethene	ND		0.0011
1,2-Dichloropropane	ND		0.0011
Dibromomethane	ND		0.0011
Bromodichloromethane	ND		0.0011
2-Chloroethyl Vinyl Ether	ND		0.0054
(cis) 1,3-Dichloropropene	ND		0.0011
(trans) 1,3-Dichloropropene	ND		0.0011

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 11-097-04
Client ID: 4C-JH2-1/2

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0011
Tetrachloroethene	0.017		0.0011
1,3-Dichloropropane	ND		0.0011
Dibromochloromethane	ND		0.0011
1,2-Dibromoethane	ND		0.0011
Chlorobenzene	ND		0.0011
1,1,1,2-Tetrachloroethane	ND		0.0011
Bromoform	ND		0.0011
Bromobenzene	ND		0.0011
1,1,2,2-Tetrachloroethane	ND		0.0011
1,2,3-Trichloropropane	ND		0.0011
2-Chlorotoluene	ND		0.0011
4-Chlorotoluene	ND		0.0011
1,3-Dichlorobenzene	ND		0.0011
1,4-Dichlorobenzene	ND		0.0011
1,2-Dichlorobenzene	ND		0.0011
1,2-Dibromo-3-chloropropane	ND		0.0054
1,2,4-Trichlorobenzene	ND		0.0011
Hexachlorobutadiene	ND		0.0054
1,2,3-Trichlorobenzene	ND		0.0011

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	88	71-126
Toluene, d8	86	73-130
4-Bromofluorobenzene	96	70-130

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted:	11-15-04
Date Analyzed:	11-15-04
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1115S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0010
Chloromethane	ND		0.0010
Vinyl Chloride	ND		0.0010
Bromomethane	ND		0.0010
Chloroethane	ND		0.0010
Trichlorofluoromethane	ND		0.0010
1,1-Dichloroethene	ND		0.0010
Acetone	ND		0.0050
Iodomethane	ND		0.0050
Carbon Disulfide	ND		0.0010
Methylene Chloride	ND		0.0050
(trans) 1,2-Dichloroethene	ND		0.0010
Methyl t-Butyl Ether	ND		0.0010
1,1-Dichloroethane	ND		0.0010
Vinyl Acetate	ND		0.0050
2,2-Dichloropropane	ND		0.0010
(cis) 1,2-Dichloroethene	ND		0.0010
2-Butanone	ND		0.0050
Bromochloromethane	ND		0.0010
Chloroform	ND		0.0010
1,1,1-Trichloroethane	ND		0.0010
Carbon Tetrachloride	ND		0.0010
1,1-Dichloropropene	ND		0.0010
Benzene	ND		0.0010
1,2-Dichloroethane	ND		0.0010
Trichloroethene	ND		0.0010
1,2-Dichloropropane	ND		0.0010
Dibromomethane	ND		0.0010
Bromodichloromethane	ND		0.0010
2-Chloroethyl Vinyl Ether	ND		0.0050
(cis) 1,3-Dichloropropene	ND		0.0010
Methyl Isobutyl Ketone	ND		0.0050
Toluene	ND		0.0010
(trans) 1,3-Dichloropropene	ND		0.0010

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB1115S1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0010
Tetrachloroethene	ND		0.0010
1,3-Dichloropropane	ND		0.0010
2-Hexanone	ND		0.0050
Dibromochloromethane	ND		0.0010
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
Ethylbenzene	ND		0.0010
m,p-Xylene	ND		0.0020
o-Xylene	ND		0.0010
Styrene	ND		0.0010
Bromoform	ND		0.0010
Isopropylbenzene	ND		0.0010
Bromobenzene	ND		0.0010
1,1,2,2-Tetrachloroethane	ND		0.0010
1,2,3-Trichloropropane	ND		0.0010
n-Propylbenzene	ND		0.0010
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND		0.0010
1,3,5-Trimethylbenzene	ND		0.0010
tert-Butylbenzene	ND		0.0010
1,2,4-Trimethylbenzene	ND		0.0010
sec-Butylbenzene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
p-Isopropyltoluene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
n-Butylbenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND		0.0050
1,2,4-Trichlorobenzene	ND		0.0010
Hexachlorobutadiene	ND		0.0050
Naphthalene	ND		0.0010
1,2,3-Trichlorobenzene	ND		0.0010

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	83	71-126
Toluene, d8	87	73-130
4-Bromofluorobenzene	100	70-130

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

VOLATILES by EPA 8260B
MS/MSD QUALITY CONTROL

Date Extracted: 11-15-04
Date Analyzed: 11-15-04

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-097-04

Compound	Sample Amount	Spike Amount	MS	Percent Recovery	MSD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	ND	0.0500	0.0566	113	0.0558	112	53-141	
Benzene	ND	0.0500	0.0454	91	0.0464	93	66-135	
Trichloroethene	ND	0.0500	0.0499	100	0.0493	99	69-130	
Toluene	ND	0.0500	0.0463	93	0.0460	92	72-127	
Chlorobenzene	ND	0.0500	0.0501	100	0.0516	103	68-134	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	1	11	
Benzene	2	11	
Trichloroethene	1	13	
Toluene	1	11	
Chlorobenzene	3	12	

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B
page 1 of 2

Date Extracted:	11-12-04
Date Analyzed:	11-12-04
Matrix:	Air
Units:	ug/L (ppb)
Lab ID:	11-097-01
Client ID:	**4C-JH2-VAPOR**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		1.0
Chloromethane	ND		1.0
Vinyl Chloride	ND		1.0
Bromomethane	ND		1.0
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
1,1-Dichloroethene	ND		1.0
Iodomethane	ND		5.0
Methylene Chloride	ND		5.0
(trans) 1,2-Dichloroethene	ND		1.0
1,1-Dichloroethane	ND		1.0
2,2-Dichloropropane	ND		1.0
(cis) 1,2-Dichloroethene	ND		1.0
Bromochloromethane	ND		1.0
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		1.0
Carbon Tetrachloride	ND		1.0
1,1-Dichloropropene	ND		1.0
1,2-Dichloroethane	ND		1.0
Trichloroethene	ND		1.0
1,2-Dichloropropane	ND		1.0
Dibromomethane	ND		1.0
Bromodichloromethane	ND		1.0
2-Chloroethyl Vinyl Ether	ND		5.0
(cis) 1,3-Dichloropropene	ND		1.0
(trans) 1,3-Dichloropropene	ND		1.0

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 11-097-01
Client ID: 4C-JH2-VAPOR

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		1.0
Tetrachloroethene	7.1		1.0
1,3-Dichloropropane	ND		1.0
Dibromochloromethane	ND		1.0
1,2-Dibromoethane	ND		1.0
Chlorobenzene	ND		1.0
1,1,1,2-Tetrachloroethane	ND		1.0
Bromoform	ND		5.0
Bromobenzene	ND		1.0
1,1,2,2-Tetrachloroethane	ND		1.0
1,2,3-Trichloropropane	ND		1.0
2-Chlorotoluene	ND		1.0
4-Chlorotoluene	ND		1.0
1,3-Dichlorobenzene	ND		1.0
1,4-Dichlorobenzene	ND		1.0
1,2-Dichlorobenzene	ND		1.0
1,2-Dibromo-3-chloropropane	ND		5.0
1,2,4-Trichlorobenzene	ND		1.0
Hexachlorobutadiene	ND		1.0
1,2,3-Trichlorobenzene	ND		1.0

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	79	70-123
Toluene, d8	86	70-119
4-Bromofluorobenzene	97	70-119

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B

page 1 of 2

Date Extracted:	11-12-04
Date Analyzed:	11-12-04
Matrix:	Air
Units:	ug/L (ppb)
Lab ID:	11-097-02
Client ID:	**4C-JH1-VAPOR**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		1.0
Chloromethane	ND		1.0
Vinyl Chloride	ND		1.0
Bromomethane	ND		1.0
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
1,1-Dichloroethene	ND		1.0
Iodomethane	ND		5.0
Methylene Chloride	ND		5.0
(trans) 1,2-Dichloroethene	ND		1.0
1,1-Dichloroethane	ND		1.0
2,2-Dichloropropane	ND		1.0
(cis) 1,2-Dichloroethene	ND		1.0
Bromochloromethane	ND		1.0
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		1.0
Carbon Tetrachloride	ND		1.0
1,1-Dichloropropene	ND		1.0
1,2-Dichloroethane	ND		1.0
Trichloroethene	ND		1.0
1,2-Dichloropropane	ND		1.0
Dibromomethane	ND		1.0
Bromodichloromethane	ND		1.0
2-Chloroethyl Vinyl Ether	ND		5.0
(cis) 1,3-Dichloropropene	ND		1.0
(trans) 1,3-Dichloropropene	ND		1.0

Date of Report: November 23, 2004
Samples Submitted: November 11, 2004
Laboratory Reference: 0411-097
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B
page 2 of 2

Lab ID: 11-097-02
Client ID: 4C-JH1-VAPOR

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		1.0
Tetrachloroethene	1.2		1.0
1,3-Dichloropropane	ND		1.0
Dibromochloromethane	ND		1.0
1,2-Dibromoethane	ND		1.0
Chlorobenzene	ND		1.0
1,1,1,2-Tetrachloroethane	ND		1.0
Bromoform	ND		5.0
Bromobenzene	ND		1.0
1,1,2,2-Tetrachloroethane	ND		1.0
1,2,3-Trichloropropane	ND		1.0
2-Chlorotoluene	ND		1.0
4-Chlorotoluene	ND		1.0
1,3-Dichlorobenzene	ND		1.0
1,4-Dichlorobenzene	ND		1.0
1,2-Dichlorobenzene	ND		1.0
1,2-Dibromo-3-chloropropane	ND		5.0
1,2,4-Trichlorobenzene	ND		1.0
Hexachlorobutadiene	ND		1.0
1,2,3-Trichlorobenzene	ND		1.0

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	83	70-123
Toluene, d8	87	70-119
4-Bromofluorobenzene	105	70-119

Date of Report: November 18, 2004
Samples Submitted: November 12, 2004
Laboratory Reference: 0411-106
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
page 1 of 2

Date Extracted: 11-15-04
Date Analyzed: 11-15-04

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1115S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0010
Chloromethane	ND		0.0010
Vinyl Chloride	ND		0.0010
Bromomethane	ND		0.0010
Chloroethane	ND		0.0010
Trichlorofluoromethane	ND		0.0010
1,1-Dichloroethene	ND		0.0010
Iodomethane	ND		0.0050
Methylene Chloride	ND		0.0050
(trans) 1,2-Dichloroethene	ND		0.0010
1,1-Dichloroethane	ND		0.0010
2,2-Dichloropropane	ND		0.0010
(cis) 1,2-Dichloroethene	ND		0.0010
Bromochloromethane	ND		0.0010
Chloroform	ND		0.0010
1,1,1-Trichloroethane	ND		0.0010
Carbon Tetrachloride	ND		0.0010
1,1-Dichloropropene	ND		0.0010
1,2-Dichloroethane	ND		0.0010
Trichloroethene	ND		0.0010
1,2-Dichloropropane	ND		0.0010
Dibromomethane	ND		0.0010
Bromodichloromethane	ND		0.0010
2-Chloroethyl Vinyl Ether	ND		0.0050
(cis) 1,3-Dichloropropene	ND		0.0010
(trans) 1,3-Dichloropropene	ND		0.0010

Date of Report: November 18, 2004
Samples Submitted: November 12, 2004
Laboratory Reference: 0411-106
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
page 2 of 2

Lab ID: MB1115S1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0010
Tetrachloroethene	ND		0.0010
1,3-Dichloropropane	ND		0.0010
Dibromochloromethane	ND		0.0010
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
Bromoform	ND		0.0010
Bromobenzene	ND		0.0010
1,1,2,2-Tetrachloroethane	ND		0.0010
1,2,3-Trichloropropane	ND		0.0010
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND		0.0050
1,2,4-Trichlorobenzene	ND		0.0010
Hexachlorobutadiene	ND		0.0050
1,2,3-Trichlorobenzene	ND		0.0010

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	83	71-126
Toluene, d8	87	73-130
4-Bromofluorobenzene	100	70-130

Date of Report: November 18, 2004
Samples Submitted: November 12, 2004
Laboratory Reference: 0411-106
Project: 2003-165d

HALOGENATED VOLATILES by EPA 8260B
MS/MSD QUALITY CONTROL

Date Extracted: 11-15-04
Date Analyzed: 11-15-04

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-097-04

Compound	Sample Amount	Spike Amount	MS	Percent Recovery	MSD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	ND	0.0500	0.0566	113	0.0558	112	53-141	
Benzene	ND	0.0500	0.0454	91	0.0464	93	66-135	
Trichloroethene	ND	0.0500	0.0499	100	0.0493	99	69-130	
Toluene	ND	0.0500	0.0463	93	0.0460	92	72-127	
Chlorobenzene	ND	0.0500	0.0501	100	0.0516	103	68-134	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	1	11	
Benzene	2	11	
Trichloroethene	1	13	
Toluene	1	11	
Chlorobenzene	3	12	

Date of Report: November 18, 2004
Samples Submitted: November 12, 2004
Laboratory Reference: 0411-106
Project: 2003-165d

% MOISTURE

Date Analyzed: 11-12&15-04

Client ID	Lab ID	% Moisture
4C-HS2-2.5/4	11-106-04	14
4C-HS2-7.5/9	11-106-05	11
4C-HS3-2.5/4	11-106-07	11
4C-HS4-7.5/9	11-106-09	15
4C-HS4-12.5/14	11-106-10	18
4C-HS5-7.5/9	11-106-12	14
4C-HS5-12.5/14	11-106-13	16
4C-HS6-7.5/9	11-106-15	16
4C-HS6-12.5/14	11-106-16	24

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.

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 inhomogeneity. 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 indicative of diesel fuel are present in the sample and are impacting the gasoline result.

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/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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

Chain of Custody

Company: The Riley Group

Project Number: 2003-160

Project Name: Four Corners

Project Manager: Paul Riley

Sampled by: [illegible]

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Day ☐ 3 Day
- ☑ Standard (5 working days)
- ☐ ______ (other)

Laboratory Number: 11-106

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 / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	Archive				% Moisture
1	4C-HS1-2.5/4	11/11/04	8:30	Soil	1																✓				
2	4C-HS1-7.5/9	↓	8:45	↓	2																✓				
3	4C-HS1-12.5/13		8:57		2																✓				
4	4C-HS2-2.5/4		9:25		1	X																			X
5	4C-HS2-7.5/9		9:35		2	X																			X
6	4C-HS2-12.5/13.5		9:45		2																✓				
7	4C-HS3-2.5/4		10:13		1	X																			X
8	4C-HS4-2.5/4		10:49		1																✓				
9	4C-HS4-7.5/9		11:02		2	X																			X
10	4C-HS4-12.5/14	↓	11:15	↓	2	X																			X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by	[illegible]	The Riley Group, Inc.	11/12/04	9:05	
Received by	[illegible]	[illegible]	11-12-04	10:15	
Relinquished by	[illegible]	[illegible]	11-12-04	11:44	
Received by	[illegible]	OnSite Env	11/12/04	11:44	
Relinquished by					
Received by					
Reviewed by/Date		Reviewed by/Date			Chromatograms with final report ☐

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Chain of Custody

Page 2 of 2

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

Laboratory Number: 11-106

Company: The Riley Group
Project Number: 2003-1650
Project Name: Four Corners
Project Manager: Paul Riley
Sampled by: Tom Nanbicz

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☒ Standard (5 working days)
☐ ______ (other)

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 / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	Archive				% Moisture
11	4C-HSS-2.5/4	11/11/04	13:23	Soil	1																✓				
12	4C-HSS-7.5/9	↓	13:30	↓	4					X															X
13	4C-HSS-12.5/14	↓	13:38	↓	4					X															X
14	4C-HS6-2.5/4	↓	14:19	↓	1																✓				
15	4C-HS6-7.5/9	↓	14:40	↓	4					X															X
16	4C-HS6-12.5/14	↓	14:54	↓	4					X															X

	Signature	Company	Date	Time
Relinquished by	[illegible]	The Riley Group, Inc	11/12/04	9:05
Received by	[illegible]	SPeoy	11/12/04	1015
Relinquished by	[illegible]	SPeoy	11-12-04	1141
Received by	[illegible]	OnSite Env	11/12/04	1141
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

Chromatograms with final report ☐

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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
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3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 24, 2004

Paul Riley, Project Manager
The Riley Group, Inc.
10728 Lake City Way NE
Seattle, WA 98125

Dear Mr. Riley:

Included are the results from the testing of material submitted on November 17, 2004 from the 2003-1650, F&BI 411165 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG1124R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411165
Date Extracted: 11/19/04
Date Analyzed: 11/20/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as µg/L (ppb)

Sample ID Laboratory ID	Gasoline Range (C_6-C_{10})	Surrogate (% Recovery) (Limit 61-136)
4C-MW1-H2O 411165-01	<50	90
4C-MW2-H2O 411165-02	<50	89
Method Blank	<50	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411165
Date Extracted: 11/18/04
Date Analyzed: 11/18/04 and 11/19/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx
Extended to Include Motor Oil Range Compounds
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	Diesel Extended (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 55-131)
4C-MW1-H2O 411165-01	<250	87
4C-MW2-H2O 411165-02	<250	106
Method Blank	<250	93

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	4C-MW1-H2O	Client:	The Riley Group, Inc.
Date Received:	11/17/04	Project:	2003-1650, F&BI 411165
Date Extracted:	11/17/04	Lab ID:	411165-01
Date Analyzed:	11/17/04	Data File:	111707.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	125	50	150
1,2-Dichloroethane-d4	110	50	150
Toluene-d8	114	50	150
4-Bromofluorobenzene	116	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<1
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1
Benzene	<1
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	4C-MW2-H2O	Client:	The Riley Group, Inc.
Date Received:	11/17/04	Project:	2003-1650, F&BI 411165
Date Extracted:	11/17/04	Lab ID:	411165-02
Date Analyzed:	11/17/04	Data File:	111710.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	122	50	150
1,2-Dichloroethane-d4	109	50	150
Toluene-d8	114	50	150
4-Bromofluorobenzene	117	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<1
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1
Benzene	<1
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	The Riley Group, Inc.
Date Received:	Not Applicable	Project:	2003-1650, F&BI 411165
Date Extracted:	11/17/04	Lab ID:	041394 mb
Date Analyzed:	11/17/04	Data File:	111705.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	123	50	150
1,2-Dichloroethane-d4	110	50	150
Toluene-d8	114	50	150
4-Bromofluorobenzene	116	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<1
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1
Benzene	<1
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411165

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	µg/L (ppb)	500	96	94	65-120	2

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411165

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	µg/L (ppb)	2,500	123	127	76-134	3

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411165

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260B

Laboratory Code: 411165-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
1,1-Dichloroethene	µg/L (ppb)	<1	<1	nm
1,2-Dichloroethane (EDC)	µg/L (ppb)	<1	<1	nm
Benzene	µg/L (ppb)	<1	<1	nm
Trichloroethene	µg/L (ppb)	<1	<1	nm
Toluene	µg/L (ppb)	<1	<1	nm
Ethylbenzene	µg/L (ppb)	<1	<1	nm
m,p-Xylene	µg/L (ppb)	<2	<2	nm

Laboratory Code: 411165-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
1,1-Dichloroethene	µg/L (ppb)	50	<1	114	50-150
1,2-Dichloroethane (EDC)	µg/L (ppb)	50	<1	134	50-150
Benzene	µg/L (ppb)	100	<1	101	50-150
Trichloroethene	µg/L (ppb)	100	<1	105	50-150
Toluene	µg/L (ppb)	100	<1	111	50-150
Ethylbenzene	µg/L (ppb)	50	<1	118	50-150
m,p-Xylene	µg/L (ppb)	50	<2	113	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
1,1-Dichloroethene	µg/L (ppb)	50	116	70-130
1,2-Dichloroethane (EDC)	µg/L (ppb)	50	130	70-130
Benzene	µg/L (ppb)	100	102	70-130
Trichloroethene	µg/L (ppb)	100	106	70-130
Toluene	µg/L (ppb)	100	111	70-130
Ethylbenzene	µg/L (ppb)	50	119	70-130
m,p-Xylene	µg/L (ppb)	50	117	70-130

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
Note: The calibration verification result for Methylene Chloride exceeded 15% deviation. The average deviation for all compounds was less than 15%, therefore the initial calibration is considered valid.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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November 24, 2004

Paul Riley, Project Manager
The Riley Group, Inc.
10728 Lake City Way NE
Seattle, WA 98125

Dear Mr. Riley:

Included are the results from the testing of material submitted on November 16, 2004 from the 2003-1650, F&BI 411160 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG1124R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/04
Date Received: 11/16/04
Project: 2003-1650, F&BI 411160
Date Extracted: 11/19/04
Date Analyzed: 11/19/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR BENZENE, TOLUENE, ETHYLBENZENE XYLENES AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Results Reported as µg/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 61-136)
4C-B4-H2O 411160-01	<1	<1	<1	<3	<100	73
Method Blank	<1	<1	<1	<3	<100	72

Date of Report: 11/24/04
Date Received: 11/16/04
Project: 2003-1650, F&BI 411160
Date Extracted: 11/18/04
Date Analyzed: 11/18/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx
Extended to Include Motor Oil Range Compounds
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	Diesel Extended (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 55-131)
4C-B4-H2O 411160-01	<250	67
Method Blank	<250	93

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	4C-B4-H2O	Client:	The Riley Group, Inc.
Date Received:	11/16/04	Project:	2003-1650, F&BI 411160
Date Extracted:	11/17/04	Lab ID:	411160-01
Date Analyzed:	11/17/04	Data File:	111711.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	126	50	150
1,2-Dichloroethane-d4	110	50	150
Toluene-d8	113	50	150
4-Bromofluorobenzene	115	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<1
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1
Benzene	<1
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	The Riley Group, Inc.
Date Received:	Not Applicable	Project:	2003-1650, F&BI 411160
Date Extracted:	11/17/04	Lab ID:	041394 mb
Date Analyzed:	11/17/04	Data File:	111705.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	123	50	150
1,2-Dichloroethane-d4	110	50	150
Toluene-d8	114	50	150
4-Bromofluorobenzene	116	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<1
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1
Benzene	<1
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Date of Report: 11/24/04
Date Received: 11/16/04
Project: 2003-1650, F&BI 411160

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING EPA METHODS 8021B AND NWTPH-Gx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	µg/L (ppb)	25	108	102	79-121	6
Toluene	µg/L (ppb)	25	111	102	78-120	8
Ethylbenzene	µg/L (ppb)	25	104	97	74-122	7
Xylenes	µg/L (ppb)	75	117	107	67-121	9
Gasoline	µg/L (ppb)	500	96	94	65-120	2

Date of Report: 11/24/04
Date Received: 11/16/04
Project: 2003-1650, F&BI 411160

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	µg/L (ppb)	2,500	123	127	76-134	3

Date of Report: 11/24/04
Date Received: 11/16/04
Project: 2003-1650, F&BI 411160

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260B

Laboratory Code: 411165-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
1,1-Dichloroethene	µg/L (ppb)	<1	<1	nm
1,2-Dichloroethane (EDC)	µg/L (ppb)	<1	<1	nm
Benzene	µg/L (ppb)	<1	<1	nm
Trichloroethene	µg/L (ppb)	<1	<1	nm
Toluene	µg/L (ppb)	<1	<1	nm
Ethylbenzene	µg/L (ppb)	<1	<1	nm
m,p-Xylene	µg/L (ppb)	<2	<2	nm

Laboratory Code: 411165-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
1,1-Dichloroethene	µg/L (ppb)	50	<1	114	50-150
1,2-Dichloroethane (EDC)	µg/L (ppb)	50	<1	134	50-150
Benzene	µg/L (ppb)	100	<1	101	50-150
Trichloroethene	µg/L (ppb)	100	<1	105	50-150
Toluene	µg/L (ppb)	100	<1	111	50-150
Ethylbenzene	µg/L (ppb)	50	<1	118	50-150
m,p-Xylene	µg/L (ppb)	50	<2	113	50-150

Note: The calibration verification result for Methylene Chloride exceeded 15% deviation. The average deviation for all compounds was less than 15%, therefore the initial calibration is considered valid.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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November 24, 2004

Paul Riley, Project Manager
The Riley Group, Inc.
10728 Lake City Way NE
Seattle, WA 98125

Dear Mr. Riley:

Included are the results from the testing of material submitted on November 17, 2004 from the 2003-1650, F&BI 411175 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG1124R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411175
Date Extracted: 11/19/04
Date Analyzed: 11/20/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as µg/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 61-150)
4C-MW3-H2O 411175-01	<50	90
4C-B1-H2O 411175-02	<50	88
Method Blank	<50	89

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411175
Date Extracted: 11/18/04
Date Analyzed: 11/18/04 and 11/19/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx
Extended to Include Motor Oil Range Compounds
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	Diesel Extended (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 55-131)
4C-MW3-H2O 411175-01	<250	101
4C-B1-H2O 411175-02	4,100 x	100
Method Blank	<250	93

x - The pattern of peaks present is not indicative of diesel. The sample is being reanalyzed against motor oil.

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411175
Date Extracted: 11/18/04
Date Analyzed: 11/19/04

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL USING METHOD NWTPH-Dx
Extended to Include Motor Oil Range Compounds
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 55-131)
4C-B1-H2O 411175-02	4,500	100
Method Blank	<250	93

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	4C-MW3-H2O	Client:	The Riley Group, Inc.
Date Received:	11/17/04	Project:	2003-1650, F&BI 411175
Date Extracted:	11/18/04	Lab ID:	411175-01
Date Analyzed:	11/18/04	Data File:	111805.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	115	50	150
1,2-Dichloroethane-d4	111	50	150
Toluene-d8	112	50	150
4-Bromofluorobenzene	112	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<1
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1
Benzene	<1
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	4C-B1-H2O	Client:	The Riley Group, Inc.
Date Received:	11/17/04	Project:	2003-1650, F&BI 411175
Date Extracted:	11/18/04	Lab ID:	411175-02
Date Analyzed:	11/18/04	Data File:	111806.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	116	50	150
1,2-Dichloroethane-d4	110	50	150
Toluene-d8	113	50	150
4-Bromofluorobenzene	111	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<1
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1
Benzene	<1
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	The Riley Group, Inc.
Date Received:	Not Applicable	Project:	2003-1650, F&BI 411175
Date Extracted:	11/18/04	Lab ID:	041387 mb
Date Analyzed:	11/18/04	Data File:	111804.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	114	50	150
1,2-Dichloroethane-d4	109	50	150
Toluene-d8	113	50	150
4-Bromofluorobenzene	113	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<1
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1
Benzene	<1
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411175

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	µg/L (ppb)	500	96	94	65-120	2

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411175

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	µg/L (ppb)	2,500	123	127	76-134	3

Date of Report: 11/24/04
Date Received: 11/17/04
Project: 2003-1650, F&BI 411175

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260B

Laboratory Code: 411175-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
1,1-Dichloroethene	µg/L (ppb)	<1	<1	nm
1,2-Dichloroethane (EDC)	µg/L (ppb)	<1	<1	nm
Benzene	µg/L (ppb)	<1	<1	nm
Trichloroethene	µg/L (ppb)	<1	<1	nm
Toluene	µg/L (ppb)	<1	<1	nm
Ethylbenzene	µg/L (ppb)	<1	<1	nm
m,p-Xylene	µg/L (ppb)	<2	<2	nm

Laboratory Code: 411175-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
1,1-Dichloroethene	µg/L (ppb)	50	<1	93	50-150
1,2-Dichloroethane (EDC)	µg/L (ppb)	50	<1	104	50-150
Benzene	µg/L (ppb)	100	<1	90	50-150
Trichloroethene	µg/L (ppb)	100	<1	92	50-150
Toluene	µg/L (ppb)	100	<1	98	50-150
Ethylbenzene	µg/L (ppb)	50	<1	103	50-150
m,p-Xylene	µg/L (ppb)	50	<2	102	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
1,1-Dichloroethene	µg/L (ppb)	50	103	70-130
1,2-Dichloroethane (EDC)	µg/L (ppb)	50	113	70-130
Benzene	µg/L (ppb)	100	105	70-130
Trichloroethene	µg/L (ppb)	100	107	70-130
Toluene	µg/L (ppb)	100	112	70-130
Ethylbenzene	µg/L (ppb)	50	117	70-130
m,p-Xylene	µg/L (ppb)	50	118	70-130

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

Note: The calibration verification result for Methylene chloride exceeded 15% deviation. The average deviation for all compounds was less than 15%, therefore the initial calibration is considered valid.