

**SUPPLEMENTAL SAMPLING AND TESTING**

Overlake East Shopping Center  
15230 Northeast 24<sup>th</sup> Street  
Redmond, Washington

**MR. ANDY LAKHA**

**RECEIVED**

**MAR 13 2001**

**DEPT. OF ECOLOGY**

# ENVIRONMENTAL ASSOCIATES, INC.

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January 27, 1999

JN 9004

Mr. Andy Lakha  
% Interwest Mortgage Investment Company  
10900 Northeast 8<sup>th</sup> Street, Suite 1524  
Bellevue, Washington 98004

Attention: Mr. Jeff Coats

Subject: **SUPPLEMENTAL SAMPLING AND TESTING**  
**Overlake East Shopping Center**  
**15230 Northeast 24<sup>th</sup> Street**  
**Redmond, Washington**

Gentlemen:

Environmental Associates, Inc. (EAI) has completed subsurface sampling and analysis of soil obtained from four (4) borings and sampling and analysis of groundwater obtained from one of the borings completed as a monitoring well at the subject property located in Redmond, King County, Washington. This report, prepared in accordance with the terms of our proposal dated December 22, 1998, summarizes our approach to the project along with results and conclusions.

The contents of this report are confidential and are intended solely for your use and the use of your representatives. Four (4) copies of this report are being distributed to you. No other distribution or discussion of this report will take place without your prior approval in writing. Additional copies are available for a small fee.

Relying solely upon the results of this investigation, which included subsurface sampling of soil, and groundwater and analysis of selected samples for the presence of volatile organic compound (VOC) contamination, and upon the results of soil sampling and analysis previously completed by others, it would appear that:

- Soil beneath the site at shallow depths (less than approximately 10 to 20 feet) in the vicinity of the dry cleaning machine at Sun Cleaners and beneath a planter north of Sun Cleaners contains concentrations of tetrachloroethene (maximum of 7.1 mg/kg) in excess of the Method A cleanup level (0.50 mg/kg) published in the Model Toxics Control Act (MTCA), Chapter 173-340 WAC. The concentrations reported to date are well below the WDOE Method B cleanup level of 19.6 mg/kg;



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- Soil in the vicinity of our boring B-1 at a depth of 20 feet (in relatively close proximity to the area of impacts to soil above the cleanup level noted above) contains a concentration of tetrachloroethene (0.27 mg/kg) well below the Method A cleanup level of 0.5 mg/kg.
- Groundwater obtained from the monitoring well completed along the inferred hydrologically down gradient western side of the property (boring B-1/MW-1) does not contain detectible concentrations of tetrachloroethene.

Considering these findings along with the work completed by others (ADI Geosciences) in November and December of 1998, it would appear that the tetrachloroethene contamination above the Method A cleanup level is limited to soil at relatively shallow depths (less than approximately 10 feet) in relatively close proximity to the dry cleaning machine and in the planter area north of the cleaners. Depth to groundwater is inferred to exceed 40 feet beneath the dry cleaner, based on projection from its discovery in our boring B-3/MW-1 and taking local topography into consideration. It would therefore appear that use of the Method B cleanup level would be appropriate for protection of human health and the environment at this facility, since no groundwater impacts have been documented, and groundwater is present at considerable depth in the vicinity of the dry cleaner. Based upon findings to date and applying WDOE Method B criteria, it would appear that no further action with regard to soil at the property may be an appropriate course of action at this time. Given time constraints imposed upon this project and recognizing time constraints implicit in any interface with WDOE, this conclusion is reached without benefit of actual review or consultation with WDOE.

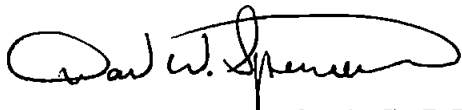
With regard to continued management of environmental issues at the site, it may be prudent to consider forwarding applicable reports regarding the site to the Washington Department of Ecology (WDOE) for review under the Voluntary Cleanup Program in an effort to obtain a determination of "no further action." As noted later in this report, the discovery of tetrachloroethene in a concentration above the Method A level in at least one location indicates a duty to report to WDOE under WAC 173-340-300 (4)(a). Additional management approaches could include review, monitoring, and possibly modification of solvent handling and disposal practices at Sun Cleaners, along with periodic groundwater sampling at the boring B-3/MW-1 locality to document stability of groundwater quality over time. Additional discussion is provided for your consideration in the Conclusions/ Recommendations section of found at the end of this report.

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We appreciate the opportunity to be of service on this assignment. If you have any questions or if we may be of additional service, please do not hesitate to contact us.

Respectfully submitted,  
ENVIRONMENTAL ASSOCIATES, INC.



Don W. Spencer, M.Sc., P.G., R.E.A.  
Principal

EPA-Certified Asbestos Inspector/Management Planner  
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Registered Site Assessor/Licensed UST Supervisor  
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License: W000010 (Washington)  
License: 11464 (Oregon)  
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License: 5195 (Illinois)

**ENVIRONMENTAL ASSOCIATES, INC.**

# SUPPLEMENTAL SAMPLING AND TESTING

**Overlake East Shopping Center  
15230 Northeast 24<sup>th</sup> Street  
Redmond, Washington**

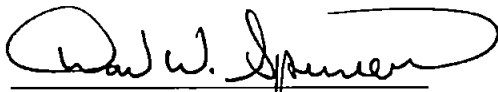
**Prepared for:**

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Questions regarding this investigation, the conclusions reached and the recommendations given should be addressed to one of the following undersigned.



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Environmental Geologist  
EPA-Certified AHERA Building Inspector  
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**Reference Job Number: JN 9004**

**January 27, 1999**

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## INTRODUCTION/SCOPE OF WORK

### SITE/PROJECT DESCRIPTION

The subject property is comprised of an irregular-shaped parcel of land covering approximately 8 acres located along the north side of Northeast 24<sup>th</sup> Street. Currently, the site is developed with two retail buildings identified as 2569 Overlake East building and the 15230 Overlake East building. The 2569 building is one story in height while the 15230 building is one and two stories in height. Both buildings were reportedly constructed in 1984, and currently approximately 23 tenants occupy the site providing financial services, retail sales, and dry cleaning. Prior to construction of the current buildings, it is our understanding that the property was vacant, and had not been developed prior to the construction of the current buildings. The approximate location of the site is shown on the Vicinity Topographic Map, Plate 1, appended herewith. The site is bordered on the north by a Park & Ride lot operated by Metro, while The Bon Marche Home Center is located to the east. South and west of the site are retail strip malls.

### BACKGROUND/SCOPE OF WORK

LAW Engineering and Environmental Service, Inc. (LAW) presented the results of a Phase I Environmental Site Assessment of the subject property to John Hancock Mutual Life Insurance Company on July 30, 1998. The results of that study suggested that there was a potential for environmental impacts to the property resulting from a dry cleaner (Sun Cleaners) that has occupied the property since approximately 1986. No recommendations for additional work were contained in the report.

On November 18, 1998, ADI Geoscience International (ADI) presented the findings of a limited Phase II Environmental Site Assessment to Lakha Investment Company, LLC. That study included advancing Geoprobe soil borings and hand auger borings and collection of soil samples for analysis for volatile organic compounds (VOCs) including the dry cleaning fluid used at the site (tetrachloroethene) and associated degradation products using EPA Method 8010. The locations of these hand auger and geoprobe borings are presented on the Site Plan attached to this report as Plate 2. ADI also completed a soil vapor survey and additional analysis of two soil samples obtained from beneath the building at the dry cleaner tenant space, which was summarized in their letter report presented to Lakha Investment Company, LLC, dated December 13, 1998. The following table summarizes the results of laboratory analysis of the soil samples obtained by ADI.

Sample ID	Depth (feet)	Detection Limit	Tetrachloroethene Result
GP-1	2-4	0.050	ND <sup>2</sup>
GP-1	8-10	0.050	ND

TABLE 1: Results of Prior Soil Sampling and Analysis at the Site <sup>1</sup>			
Sample ID	Depth (feet)	Detection Limit	Tetrachloroethene Result
GP-2	2-4	0.050	ND
GP-2	8-10	0.050	ND
GP-3	2-4	0.050	ND
GP-3	8-10	0.050	ND
GP-4	2-4	0.050	ND
GP-4	8-10	0.050	ND
GP-5	2-4	0.050	0.130
GP-5	8-10	0.050	0.087
GP-6	2-4	0.050	ND
GP-6	8-10	0.050	0.053
GP-7	2-4	0.050	ND
GP-7	8-10	0.050	ND
HA-1	0-3	0.050	ND
HA-2	0-3	0.050	ND
HA-3	0-3	0.050	ND
HA-4	0-3	0.050	ND
HA-5	0-3	0.050	<b>3.3</b>
SVS-8	less than 4 feet	0.050	<b>6.8</b>
SVS-9	less than 4 feet	0.050	<b>7.1</b>
Method A Cleanup Guideline <sup>3</sup>			0.50
Method B Cleanup Guideline <sup>3</sup>			19.6
<p>Note: Bold typeface and gray shading indicate an exceedance of the Method A cleanup guideline. Other volatile organic compounds analyzed for were not present above the detection limits for the analyses.</p> <p>1 - All results, detection limits and cleanup levels given in milligrams per kilogram (mg/kg).</p> <p>2 - ND indicates that the analyte was not detected above the stated Practical Quantitation Limit (PQL).</p> <p>3 - Method A and B soil cleanup levels are published in the Model Toxics Control Act (MTCA), Chapter 173-340 WAC.</p>			

Referring to the table above and the Site Plan, Plate 2, it appears that soil beneath the site from a depth of approximately ground surface to 3 feet below ground surface in the immediate vicinity of the dry cleaning machine and just north of the dry cleaner tenant space contains concentrations of tetrachloroethene slightly in excess of the Method A cleanup level published in the Model Toxics Control Act (MTCA), Chapter 173-340 WAC. None of the soil samples analyzed contained concentrations of tetrachloroethene above the Method B cleanup level. Groundwater was not

encountered in the ADI subsurface assessments. ADI recommended liaison with the Washington Department of Ecology (WDOE) in an effort to assess remediation alternatives hopefully leading to a determination of "no further action" from the WDOE. ADI also recommended notification of the finding of the presence of contamination at the site above the cleanup guideline to the WDOE.

### **SCOPE OF CURRENT STUDY**

Your expressed interests, which included the desire to conduct a additional evaluation of subsurface conditions to assess the potential for the presence of VOC contamination (tetrachloroethene), with the specific desire to assess the potential for impacts to site groundwater, formed the basis for the following scope of work:

- Drilling four (4) borings to 40 feet below ground surface, and installation of the borings as monitoring wells if groundwater was encountered, along with soil and groundwater (if present) sampling.
- Laboratory analysis of selected groundwater samples (or soil samples if groundwater was not encountered in a boring) for the presence of halogenated volatile organic compounds (VOCs) including tetrachloroethene, the solvent used at Sun Cleaners using gas chromatography by EPA Method 8260B.
- Preparation of this summary report documenting the methodology and results of the investigation. Depending upon the findings of the work, a "cleanup plan" was also to be developed, if applicable.

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## **FINDINGS**

### **GEOLOGIC SETTING**

Physiographically, the site is situated on a gently rolling elevated plain (the Interlake Drift Plain) which was formed during the last period of continental glaciation that ended approximately 13,500 years ago.

Published geologic maps for the site vicinity (Liesch, B. A., et al., 1963) suggest that much of the material underlying the subject site is glacial till, a dense heterogenous mixture of silt, sand, and gravel. Typically, the till exhibits relatively low vertical hydraulic conductivity which frequently results in formation of a "perched" water table along it's upper contact. The "perched" water table (if present) is frequently seasonal and derives recharge primarily from infiltration of precipitation through more permeable overlying soils. The soils encountered during this subsurface assessment are suggestive of lodgement (an ice-contact deposit) till at the surface along the eastern side of the site to a depth of approximately 12 feet (B-2) to 25 feet (B-1 and B-4) overlying coarse-grained glacial outwash (advance outwash) to approximately 40 feet below ground surface along the east side

of the site. The western side of the property (boring B-3/MW-1) is underlain directly by what is interpreted to be either weathered glacial lodgement till or weathered advance outwash deposits to a depth of 12 feet, overlying the noted coarse grained glacial outwash to a depth of approximately 27.5 feet, with a "clean" medium grained sand interpreted to be glacial outwash laid down in less rapidly moving water encountered to the maximum depth explored at B-3/MW-1 of 36.5 feet. The medium grained sand was also encountered at boring B-2 from a depth of 37 feet to 41 feet below ground surface, the maximum depth explored at B-2. The medium grained sand was not encountered at borings B-1 and B-4, likely due to the borings beginning at an elevation approximately 15 feet above the elevation at boring B-2 and approximately 25 to 30 feet above the surface elevation at boring B-3/MW-1.

Topographically, the site is situated on a moderate west-facing slope approximately 325 feet above sea level (west edge), with the east side of the property approximately 45 feet to 50 feet higher in elevation than the western portion of the property. Based upon inference from topography and local drainage patterns, it appears that shallow-seated groundwater in the vicinity of the subject property flows in a westerly direction. Groundwater was encountered in the boring/monitoring well (B-3/MW-1) completed as a part of this project at a depth of approximately 28 feet below ground surface (26.86 feet below the top of the PVC well casing).

With respect to surface water resources, Valley Creek lies approximately 3,500 feet to the west of the site, flowing south and discharging into Kelsey Creek, which lies approximately 4,000 feet to the south of the subject site.

### **METHODOLOGY/SUBSURFACE INVESTIGATION**

**Drilling and  
Soil  
Sampling**

Four (4) soil borings were completed by us between January 11, 1999 and January 18, 1999 at the approximate locations noted as B-1, B-2, B-3/MW-1, and B-4 on the Site Plan, Plate 2. The boring locations were chosen based upon the results of prior work at the site completed by others (B-1 and B-4), locations of utility corridors (B-2), and the inferred shallow groundwater flow direction to the west as suggested by topography (boring B-3/MW-1). A B-61 truck-mounted drilling unit equipped with 6-inch inner diameter air rotary with button bit drilling equipment (ODEX) was employed to accomplish drilling of the borings. Under the supervision of our staff geologist, the drilling unit was brought into position over each selected drilling location, blocked up, and leveled before drilling.

Following set-up preparations, the drilling technique consisted of advancing each boring with the ODEX casing and compressed air hammer to the desired depth (approximately every 5 feet beginning at 5 feet below ground surface), then withdrawing the ODEX hammer and connecting rods and lowering the sampler through the center of the ODEX casing. The Dames & Moore sampler assembly was then driven eighteen inches at each designated sampling interval using a 300 pound hammer in general accordance with ASTM Method D-1586. The sampler was then withdrawn and opened for examination.

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Samples were transferred from the sampler directly to sterilized glassware with Teflon-sealed lids furnished by the project laboratory. Samples were stored in an iced chest at the site and taken to the laboratory in this condition in an effort to preserve sample integrity. Each jar was clearly labeled as to boring and sample number, date, time, project, etc. EPA-recommended sample-management protocol, including maintenance of chain-of-custody documentation was observed at each stage of the project.

During drilling, a field log was made by the project geologist for each boring. Information recorded versus corresponding depth included soil classification (Unified Soil Classification System), color, texture, apparent moisture content, odors (if present), etc.

**Well  
Installation &  
Groundwater  
Sampling**

As the object of this preliminary effort was to provide a defensible basis for determining groundwater quality beneath the site, boring B-3 was completed as a monitoring well. Groundwater was only encountered at boring B-3, and the well installed in the boring was labeled MW-1.

Following drilling and soil sampling, two-inch diameter PVC well casing with 0.010-inch slots was installed to the total depth of the boring. A blank riser casing was then used in the upper several feet. The well screen was positioned so as to span the maximum and minimum range of the anticipated seasonal groundwater fluctuation, thus facilitating representative sampling of water at any time during the year. Design and construction methods conformed to requirements and specifications outlined in revisions of WAC 173-160 for "resource protection wells" in the State of Washington.

The annulus of the well casing was sand packed two to three feet above well screens; a bentonite seal was placed above the sand and carried to within two feet of the ground surface to prevent infiltration of surface contamination along the well casing. A concrete plug stabilizes the upper two-foot section of the well. A protective casing with provisions for locking access to the well head were included.

Prior to sampling, a disposable plastic bailer was used to purge the well by removing a minimum of three well volumes of groundwater from the well. This was performed in an effort to assure that samples obtained from the well were representative of ambient groundwater conditions.

Following developmental purge bailing, an un-used disposable bailer was used to extract water samples from the well. Water was poured directly into preconditioned labeled glassware (40 milliliter glass bottles preserved with hydrochloric acid) furnished by the project laboratory. Samples were stored in

an iced chest on-site and transported to the project laboratory in this condition. Sample-management protocol including maintenance of chain-of-custody records was similar to that described above for soil samples.

**Subsurface  
Conditions**

Conditions encountered during drilling included approximately one-half inch to 2-inches of asphalt overlying up to four feet of fill consisting of crushed rock, "pit run" gravelly sand and/or reworked native soil. Beneath the fill material at the easternly borings (B-1, B-2 and B-4), gray to brown, damp, very silty fine-grained sand with varying amounts of gravel was encountered to approximately 12 feet (boring B-2) to 25 feet (borings B-1 and B-4). This material is interpreted to be glacial (lodgement) till. At boring B-3/MW-1, reddish brown silty sand was encountered beneath the fill, which is interpreted to possibly be weathered till or alternatively, glacial outwash. Underlying the interpreted till at B-1, B-2, and B-4, a somewhat coarse grained, poorly sorted (well graded) sand with varying amounts of gravel or sandy gravel was encountered to the maximum depth explored at B-1 and B-4 of approximately 40 to 41 feet below ground surface. At boring B-2, this unit extended to a depth of approximately 36.5 feet below ground surface. This unit is interpreted to be glacial outwash possibly laid down in close proximity to the advancing glacier, based upon the coarse-grained texture and subangular to subrounded gravel present in the unit. At boring B-3/MW-1, this unit was present from approximately 14 feet below ground surface to 27.5 feet below ground surface. At boring B-2 and B-3, beneath the coarse grained soil unit, a well sorted (poorly graded) medium grained sand was encountered to the maximum depths explored of 41 feet at boring B-2 and 36.5 feet at boring B-3/MW-1. This unit is also interpreted to possibly be glacial outwash laid down an less energetic water at some distance from the advancing glaciers.

The fine-grained soils interpreted to be glacial till were extremely dense and consistently damp to almost dry. The underlying coarse grained soils were consistently extremely dense and moist to very moist, with the underlying medium grained sand at borings B-2 and B-3.MW-3 being dense to very dense and very moist to wet. The base of the sand was not encountered during the drilling completed by us.

**LABORATORY ANALYSIS**

As the confirmed and suspected contaminants at the site are dry cleaning fluid (tetrachloroethene) and associated degradation products, a selected soil sample obtained from each boring and a groundwater sample obtained from MW-3 were submitted to the project laboratory for analysis using EPA Method 8260B for the presence of over forty halogenated volatile organic compounds (VOCs). We refer the reader to the Site Plan, Plate 2, for the locations of the borings/monitoring well in relation to the ADI sampling locations.

The laboratory reports are included in the Appendix at the end of this report. The following brief table summarizes the results of laboratory testing performed as a part of this work. The soil samples selected for analysis were the samples of glacial till obtained from the deepest depths at boring B-1, B-2 and B-4 (sample B-1-4 at approximately 20 feet below ground surface [bgs], B-2-2 at approximately 10 feet bgs, and sample B-4-4 at approximately 20 feet bgs), and the upper-most sample of the coarse grained soil obtained from boring B-3/MW-1 (sample B-3-3 at approximately 15 feet bgs).

<b>TABLE 2: Results of Analyses of Soil Samples and Groundwater Sample MW-1</b>			
<b>SOIL<sup>1</sup></b>			
<b>Sample</b>	<b>Depth (feet)</b>	<b>Practical Quantitation Limit (PQL)</b>	<b>Tetrachloroethene Result</b>
B-1-4	20	0.054	0.27
B-2-2	10	0.056	ND <sup>3</sup>
B-3-3	15	0.054	ND
B-4-4	20	0.054	ND
Method A Cleanup Level <sup>4</sup>			0.5
Method B Cleanup Level <sup>4</sup>			19.6
<b>GROUNDWATER<sup>2</sup></b>			
MW-1	Not applicable	1.0	ND
Method A Cleanup Level <sup>4</sup>			5.0
<b>NOTES:</b> 1 - All soil results, PQLs and cleanup levels given in milligrams per kilogram (mg/kg). 2 - All groundwater results, limits and cleanup levels given in micrograms per liter ( $\mu\text{g/l}$ ). 2 - "ND" indicates that the analyte was not detected above the stated PQL. 4 - Method A and Method B soil and groundwater cleanup levels as published in the Model Toxics Control Act (MTCA), Chapter 173-340 WAC.			

The laboratory testing results of the submitted soil samples, as summarized in the table above and as included in the Appendix, Laboratory Reports and Chains-of-Custody, confirm that concentrations of tetrachloroethene were not detectible in soil samples obtained from boring B-2, B-3/MW-1, and B-4, and are therefore well below the WDOE Method A cleanup level. Tetrachloroethene was detected in the soil sample obtained from boring B-1 at a depth of approximately 20 feet, however, the concentration (0.27 mg/kg) is well below the Method A cleanup level of 0.5 mg/kg.

The laboratory testing results of the groundwater sample obtained from monitoring well MW-1, as summarized in the table above and as included in the Appendix, confirm that concentrations of tetrachloroethene were not detectible in groundwater at that locality, and are therefore well below the WDOE Method A cleanup level.

## CONCLUSIONS/RECOMMENDATIONS

Relying solely upon review of currently available reports and information developed during the course of this supplemental assessment of soil and groundwater at the site, it appears that:

- Soil beneath the site in the vicinity of the dry cleaning machine at shallow depths (less than 4 feet) contains concentrations of tetrachloroethene in excess of the Method A cleanup level (0.50 mg/kg) published in the Model Toxics Control Act (MTCA), Chapter 173-340 WAC. Similarly, soil beneath the site along a planter at the rear (north side) of Sun Cleaners (ADI hand auger HA-5 location) also contains a concentration of tetrachloroethene in excess of the Method A cleanup level. These reported concentrations (a maximum of 7.1 mg/kg) are well below the Method B cleanup level;
- Based upon the results of soil sampling and analysis of a single sample obtained from our boring B-1 at a depth of approximately 20 feet, which contained a concentration of tetrachloroethene of 0.27 mg/kg, approximately one-half the 0.50 mg/kg Method A cleanup level, it would appear that the tetrachloroethene contamination above the cleanup level may not extend to significant depths at the site; and
- Groundwater occurs beneath the site at depths greater than approximately 40 feet along the eastern portion of the property in the vicinity of the dry cleaner, and at a depth of approximately 26 feet along the western side of the property at boring B-3/MW-1. Groundwater at boring B-3/MW-1 does not contain detectible concentrations of tetrachloroethene.

Summarizing the findings of the previous investigator (ADI) along with the results of our own supplemental sampling and testing, it would appear that concentrations of tetrachloroethene (PERC) in soil exceeding MTCA Method A cleanup guidelines may be limited to subfloor areas near the existing dry cleaning unit and in the outside planter area north of the cleaner. At no location sampled to date has the concentration in soil exceed the MTCA Method B cleanup guideline of 19.6 mg/kg, and no PERC was detected in the groundwater sample obtained from the downgradient well MW-1. Considering these findings along with a projected depth to groundwater in excess of 40 feet beneath the dry cleaning facility, adoption of the MTCA Method B cleanup guideline level of 19.6 mg/kg may be appropriate at this site as being protective both of human health and the environment. On that basis (Method B), no particular cleanup action would appear warranted or justified at this time, subject to WDOE concurrence with this conclusion, if sought.

With regard to future action at the site, it may be prudent to consider additional monitoring of groundwater quality at B-3/MW-1 periodically (quarterly or semiannually) for a period of time (one to two years) to document that groundwater quality remains within MTCA guidelines. Additionally, it may be prudent to consider forwarding all available reports regarding the site to the WDOE for review under the Voluntary Cleanup Program (VCP) to obtain their concurrence regarding acceptance of Method B and in an effort to obtain a finding of "no further action" (NFA) with regard to the tetrachloroethene-impacted soils at the site.

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As a related matter, we strongly recommend that the owner become actively involved in review and monitoring of tetrachloroethene management practices at Sun Cleaners in an effort to ensure that potential/future risk of impacts to site soil and/or groundwater are minimized. Such diligence could possibly include assessment of current sewer line integrity, review of tetrachloroethene and tetrachloroethene-tainted filter residue handling and waste management practices, orderly retention of documents related to disposal of these materials, and frequent checks of Sun Cleaners to ensure that best management practices are maintained with regard to dry cleaning fluids. This is recommended in consideration of the reported poor management of tetrachloroethene in the past by a previous owner of the dry cleaner as documented in the LAW "phase I" report (July 30, 1998).

Finally, under Chapter 173-340-300(4)(a), the owner must report the finding of contamination above the Method A cleanup level at the subject property to the Washington Department of Ecology within 90 days of discovery. Such notification could be included as a part of the VCP submittal recommended herein. Restrictions imposed on this project precluded timely review and oversight by the Washington Department of Ecology (WDOE). Acknowledging the unpredictability inherent in the results of agency reviews in general, no warranty is made that WDOE would necessarily concur with the conclusions offered here. These conclusions and recommendations are therefore tentative and based solely upon our experiences with other similar dry cleaner projects in this jurisdiction.

### **COST ESTIMATES**

Depending upon the results of a formal review of this work by WDOE, and in addition to the costs for monitoring and compliance already made in this section, it is possible that some form of remediation requirement could be imposed by the agency in the event that compliance with Method A cleanup levels were desired. Relying solely upon conditions known at this time, a reasonable estimate of the total cost for selective soil removal beneath the dry cleaner floor and beneath the outside planter area to the north of the cleaner may be in the range of \$60,000 to \$90,000. A draft summary of tasks and estimated costs for the additional work is provided in Table A within Appendix A of this report. The limitations and recommendations stipulated at the foot of the table apply here, and the table does not constitute a proposal to provide such services. Costs are subject to revision, based upon actual conditions which may be encountered.

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## **LIMITATIONS**

This report has been prepared for the exclusive use of Mr. Andy Lakha, along with Intervest Mortgage Investment Company their several representatives, for specific application to this site. Our work for this project was conducted in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area, and in accordance with the terms and conditions set forth in our proposal dated December 22, 1998. The opinions offered here rely solely upon observations and assessment of conditions encountered at separated boring/sampling localities and depths. Conditions may vary between borings or at other localities and depths.. Environmental Associates, Inc., makes no warranty as to the applicability, scope, or conclusions drawn by other workers at the site. No other warranty, expressed or implied, is made. If new information is developed in future site work which may include excavations, borings, studies, etc., Environmental Associates, Inc., must be retained to reevaluate the conclusions of this report and to provide amendments as required.

## REFERENCES

ADI Geosciences International, November 18, 1998, Limited Phase II Subsurface Environmental Site Assessment, Overlake East Shopping Center. Prepared for Lakha Investment Company, LLC, 8 pps., 2 figures, appendices.

ADI Geosciences International, December 13, 1998, Overlake East Soil Vapor Survey, Portions of 15230 Northeast 24<sup>th</sup> Street, Redmond Washington. Prepared for Mr. Andy Lakha/Lakha Investment Company, LLC, 8 pps., 1 table, 2 figures, attachments.

LAW Engineering and Environmental Services, Inc., July 30, 1998, Report of Phase I Environmental Site Assessment, Overlake, East, 15230 Northeast 24<sup>th</sup> Street, Redmond, Washington. Prepared for John Hancock Mutual Life Insurance Company, 22 pps., 3 figures, appendices.

United States Geologic Survey, 1982, Bellevue North, Washington 7.5x15 Minute (1:25,000 scale) Topographic Quadrangle Map. From aerial photographs obtained in 1977, 1 sheet.

United States Geologic Survey, 1982, Bellevue South, Washington 7.5x15 Minute (1:25,000 scale) Topographic Quadrangle Map. From aerial photographs obtained in 1977, 1 sheet.

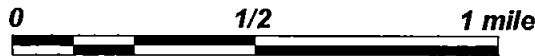


(Sources: USGS, 1982, Bellevue North, WA 7.5x15 Minute (1:25,000 scale) Quadrangle. From aerial photographs obtained in 1977, 1 sheet; and, USGS, 1983, Bellevue South, WA 7.5x15 minute (1:25,000 scale) Quadrangle. From aerial photographs obtained in 1977, 1 sheet. Contour Interval (each map) = 5 meters {16.4 feet})



**Probable Direction of Shallow-Seated Groundwater Flow**

Scale



**ENVIRONMENTAL  
ASSOCIATES, INC.**

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Bellevue, Washington 98004

**Vicinity Topographic Map**

Overlake East Shopping Center  
15230 Northeast 24th Street  
Redmond, Washington

Job Number:

JN 9004

Date:

January 1999

Plate:

1



**Metro Park & Ride**

NOTES: ADI geoprobe boring GP-5 contained a detectible concentration of tetrachloroethene at 2'-4', and at 8'-10', and GP-6 contained a detectible concentration of tetrachloroethene at 8'-10'. These concentrations were below the MTCA Method A cleanup level. ADI hand auger location HA-5, contained a concentration (3.3 mg/kg) of tetrachloroethene slightly in excess of the MTCA Method A cleanup level (0.5 mg/kg). ADI soil vapor survey soil samples SVS-8 (6.8 mg/kg) and SVS-9 (7.1 mg/kg) also contained tetrachloroethene in excess of the Method A cleanup guideline. All of these samples were of soil. ADI did not encounter groundwater.

GP-7 ●  
(LOCATED OFF MAP TO NORTH)  
2569 Overlake East Shopping Center

PARKING AREA

152nd AVENUE NORTHEAST

PARKING AREA

B-3/  
MW-1

*Only well encountered in*

15230 Overlake East Shopping Center

DRY CLEANER

DRY CLEANING UNIT

The Bon Marche Home Center

PARKING AREA

PARKING AREA

PARKING AREA

NORTHEAST 24TH STREET

**Legend**



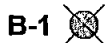
Developments/buildings



Location of catch basin



Location of EAI boring/monitoring well (Jan. 1999)



Location of EAI boring (Jan. 1999)



Location of ADI boring (Nov. 1998)



Location of ADI hand auger (Nov. 1998)



Location of ADI soil vapor survey soil sample (Dec. 1998)

←  
Probable direction of shallow-seated groundwater flow and general topographic slope of property

NOT TO SCALE



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Bellevue, Washington 98004



**SITE PLAN**

Overlake East Shopping Center  
15230 Northeast 24th Street  
Redmond, Washington 98052

Job Number:

JN 9004

Date:

January 1999

Plate:

2

# BORING B-1

Depth/ Sample	Well Design	Moisture Content (%) Water Table	Blows/ Foot	USCS	DESCRIPTION
0				F	Surface: 0.5" asphalt over gray 5/8 minus crushed rock to 1', over gray and brown mottled silty fine SAND.
5	1		>50	SP	1- Silty SAND, gray, brownish gray in upper part, sand fine grained, sparse gravel to 3/4", damp, very dense.
10	2		50/6"	SP	2- As sample 1 above, damp, very dense.
15	3		50/5"	SP	3- As samples 1 and 2 above, gravel to 1.25"; damp, very dense.
20	4		50/5"	SP	4- As samples 1, 2, and 3 above, sand very fine to medium grained, damp, very dense.
25	5		50/6"	SW	@ 23', cuttings become coarse grained sand with silt and gravel chips. 5- SAND, with gravel, brownish gray, sand coarse, gravel to 1", moist, very dense.
30	6		50/5"	SW/ GW	6- Gravelly SAND/Sandy GRAVEL, gray-brown, with silt, very coarse grained with gravel to 3/4", wet, very dense.
35	7		50/5"	SW/ GW	7- As sample 6 above, very moist, very dense.
40	8		50/4"	SW/ GW	8- As samples 6 and 7 above, sand medium-coarse grained, silt more abundant, very moist, very dense.

MONITORING WELL NOT INSTALLED  
 GROUNDWATER NOT ENCOUNTERED

- \* Boring located within 2 feet of ADI Geosciences geoprobe boring GP-5, north of dry cleaner along north side of 15230 Overlake East Shopping Center building.
- \* Boring terminated at 40.3 feet on January 12, 1999.
- \* Monitoring well not installed, groundwater not encountered.
- \* No visual or olfactory indications of contamination in soil.



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Bellevue, Washington 98004

## TEST BORING LOG: B-1

Overlake East Shopping Center  
15230 Northeast 24th Street  
Redmond, Washington 98052

Job Number:

Date:

Logged by:

Plate:

JN 9004

Jan. 12, 1999

Dave Holmes

3

# BORING B-2

Depth/ Sample	Well Design	Moisture Content (%) Water Table	Blows/ Foot	USCS	DESCRIPTION
0				F	Surface: 1.5" asphalt over 4" 5/8 minus crushed rock, over reddish brown gravelly sand with silt (native soil).
5	1		84/12"	SP	1- Silty SAND, brownish gray, very fine grained, minor pea gravel, damp, very dense.
10	2		50/5"		2- Gravelly SAND, reddish brown, with silt, fine grained, gravel to 1", damp, very dense.
					@ 12', cuttings become coarser grained, with gravel chips.
15	3		50/6"		3- Sandy GRAVEL/Gravelly SAND, brown, medium to coarse grained, gravel to 1.25", damp, very dense.
				GW	
20	4		50/6"		4- Sandy GRAVEL, gray brown, as sample 3 above, damp, very dense. Very little recovery.
25	5		50/4"		5- Sandy GRAVEL, as sample 4 above, moist, very dense.
30	6		50/4"	GW	6- Sandy GRAVEL, as sample 4 and 5 above, brown, moist, very dense.
35	7		50/6"		7- As samples 3, 4, 5, and 6 above, with minor silt, very moist, very dense.
					@ 36.5', cuttings become medium grained sand.
40	8		88/12"	SP	8- SAND, brown, medium grained, very moist to wet, very dense.

MONITORING WELL NOT INSTALLED

GROUNDWATER NOT ENCOUNTERED

- \* Boring located west of boring B-1, in an area without an abundance of utilities. Boring located approximately 70 feet west of boring B-1, and 35 feet north 15230 Overlake East Shopping Center building.
- \* Boring terminated at 41 feet on January 18, 1999.
- \* Monitoring well not installed, groundwater not encountered.
- \* No visual or olfactory indications of contamination in soil or groundwater.



**ENVIRONMENTAL ASSOCIATES, INC.**

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Bellevue, Washington 98004

## TEST BORING LOG: B-2

Overlake East Shopping Center  
15230 Northeast 24th Street  
Redmond, Washington 98052

Job Number:	Date:	Logged by:	Plate:
JN 9004	Jan. 18, 1999	Dave Holmes	4

# BORING B-3/MW-1

Depth/ Sample	Well Design	Moisture Content (%) Water Table	Blows/ Foot	USCS	DESCRIPTION
0				F	Surface: 1.5" asphalt over 4" 5/8 minus crushed rock, over reddish brown gravelly sand (fill?) to 4'.
5	1		34	SP	1- Silty SAND, gray and brown mottled, fine grained, minor pea gravel, damp, dense.
10	2		59	SP	2- Silty SAND, reddish brown, medium to fine grained, with pea gravel, damp to moist, very dense.
15	3		50/6"	SW	3- Silty gravelly SAND, brown, sand coarse to fine grained, abundant silt, gravel to 1", very moist, very dense. @16' to 19', cuttings predominantly sand.
20	4		50/6"	GW	4- SAND, brown, with very sparse gravel to 1", medium grained, damp, very dense. @ 23', cuttings somewhat rich in pea gravel.
25	5		50/6"	GW	5- 2" thick interbeds of GRAVEL with coarse sand, and silty SAND (medium grained), silty sands very moist, gravel damp to moist, gravel to 1.5", very dense. @ 27.5', cuttings become medium grained sand. @ 28', groundwater encountered.
30	6		50/4"	SP	6- SAND, brown, medium grained, very moist, very dense.
35	7		90/9"		7- As sample 6 above, wet, very dense.

- \* Boring located west of bike shop at the site along west side of 15230 Overlake East Shopping Center building, approximately 12 feet east of ADI Geosciences geoprobe boring GP-2.
- \* Boring terminated at 36.5 feet on January 15, 1999.
- \* Groundwater encountered at 28 feet during drilling. Depth to groundwater measured at 26.86 feet below top of casing on January 18, 1999.
- \* Monitoring well installed, groundwater sample MW-1 obtained on January 18, 1999.
- \* No visual or olfactory indications of contamination in soil or groundwater.



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Bellevue, Washington 98004

## TEST BORING LOG: B-3/MW-1

Overlake East Shopping Center  
15230 Northeast 24th Street  
Redmond, Washington 98052

Job Number:

Date:

Logged by:

Plate:

JN 9004

Jan. 15, 1999

Dave Holmes

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# BORING B-4

Depth/ Sample	Well Design	Moisture Content (%) Water Table	Blows/ Foot	USCS	DESCRIPTION
0				F	Surface: 2" asphalt over brown gravelly coarse sand FILL to 1', over reddish brown silty sandy gravel FILL to 2', over gray and brown mottled silty fine SAND.
5			97/10"	SP	1- Silty SAND, gray, fine grained, minor pea gravel, damp, very dense.
10			50/5"	SP	2- SAND, with silt and gravel (to 1"), gray, medium grained, damp, very dense.
15			50/3"	SP	3- As sample 2 above, damp, very dense.
20			50/5"	SP	4- As samples 2 and 3 above, damp, very dense.
25			50/4"	GW	5- GRAVEL, with sand and minor silt, gray, gravel to 1", sand medium to fine grained, damp, very dense.
30			50/5"	SW	@ 27', cuttings become sandy. 6- Silty SAND, brownish gray, medium to coarse grained with gravel to 3/4", very moist, very dense.
35			50/5"	SW	7- As sample 6 above, very moist, very dense.
40			50/4"	SW	8- As samples 6 and 7 above, very moist, very dense.

MONITORING WELL NOT INSTALLED

GROUNDWATER NOT ENCOUNTERED

- \* Boring located within 1 foot of ADI Geosciences geoprobe boring GP-1, southeast of dry cleaner along south side of 15230 Overlake East Shopping Center building.
- \* Boring terminated at 40.25 feet on January 11, 1999.
- \* Monitoring well not installed, groundwater not encountered.
- \* No visual or olfactory indications of contamination in soil.



**ENVIRONMENTAL  
ASSOCIATES, INC.**

2122 - 112th Avenue N.E., Ste. B-100  
Bellevue, Washington 98004

## TEST BORING LOG: B-4

Overlake East Shopping Center  
15230 Northeast 24th Street  
Redmond, Washington 98052

Job Number:	Date:	Logged by:	Plate:
JN 9004	Jan. 11, 1999	Dave Holmes	6

**APPENDIX A**

**Estimated Costs**

TABLE A - DRAFT ESTIMATED COSTS

L A K H A D E V E L O P M E N T

ENVIRONMENTAL ASSOCIATES, INC.

Soil Removal/Replacement  
Sun Cleaners/Overlake East  
Redmond, Washington  
(For Method A Compliance)

I n t e r v e s t M o r t g a g e

JN 9004

January 26, 1999

\*\*\* DRAFT \*\*\*

TASK	SUBTASK	WORK DESCRIPTION	HOURS	UNITS	UNIT COST	COST
1		INTERIOR FLOOR DEMOLITION AND SOIL REMOVAL				
	1-1	Permit Acquisition(and Utility Shut off)				2500
	1-2	Door/Wall Access Modification				3000
	1-3	Equipment(incl. Operator)				2100
	1-4	Work Crew and Equip. (2 men)				8000
	1-5	Concrete Disposal (25 Ton)				600
	1-6	Contaminated Soil Transport				2500
	1-7	Contaminated Soil Disposal (250 T)				8500
	1-8	Lab Testing				1320
	1-9	Consultant Cost (This Task)				4500
				Task 1 Subtotal:	33020	4500
2		INTERIOR SOIL REPLACEMENT AND NEW CONCRETE				
	2-1	Soil Delivered and Placed				5000
	2-2	New Concrete Floor				12000
	2-3	Repair Door/Wall Access				5000
				Task 2 Subtotal:	22000	5000
3		EXTERIOR PLANTER AREA SOIL REMOVE/REPLACE				
	3-1	Utility Caution Prep.				7000
	3-2	Equipment(regular Backhoe)				960
	3-3	Crew Cost(helper)				600
	3-4	Contaminated Soil Trucking				1000
	3-5	Contaminated Soil Disposal (90 T)				3060
	3-6	Soil Delivered and Placed				2000
	3-7	Some New Curb Repair And Landscape				1500
	3-8	Laboratory Cost				880
	3-9	Consultant Cost (This Task)				1500
				Task 3 Subtotal:	18500	1500
4		DATA ANALYSIS/FINAL REPORT TO WDOE (Application for NFA)				
				Task 4 Subtotal:	1500	1500

Note: The time, quantities, and costs projected above are estimates only and do not constitute a proposal to provide these services. Actual costs will depend upon actual conditions encountered at the time of excavation. No warranty, expressed or implied is made here. Further, we recommend obtaining 3 independent competitive bids from qualified contractors prior to finalizing activity for any task or subtask.

ESTIMATED TOTAL: 75020  
(Does not include mark up or state sales tax)

**APPENDIX B**

**Laboratory Reports & Chains-of-Custody**



**OnSite  
Environmental Inc.**

Analytical Testing and Mobile Laboratory Services

January 18, 1999

Dave Holmes  
Environmental Associates, Inc.  
2122 112th Avenue NE, Suite B-100  
Bellevue, WA 98004

Re: Analytical Data for Project 9004  
Laboratory Reference No. 9901-070

Dear Dave:

Enclosed are the analytical results and associated quality control data for samples submitted on January 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 Chemist

Enclosures

Date of Report: January 18, 1999  
Samples Submitted: January 15, 1999  
Lab Traveler: 01-070  
Project: 9004

**HALOGENATED VOLATILES by EPA 8260B**

page 1 of 2

Date Extracted: 1-15-99  
Date Analyzed: 1-15-99  
  
Matrix: Soil  
Units: mg/Kg (ppm)  
  
Lab ID: 01-070-01  
Client ID: B-1-4

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.054
Chloromethane	ND		0.054
Vinyl Chloride	ND		0.054
Bromomethane	ND		0.054
Chloroethane	ND		0.054
Trichlorofluoromethane	ND		0.054
1,1-Dichloroethene	ND		0.054
Methylene Chloride	ND		0.27
(trans) 1,2-Dichloroethene	ND		0.054
1,1-Dichloroethane	ND		0.054
2,2-Dichloropropane	ND		0.054
(cis) 1,2-Dichloroethene	ND		0.054
Chloroform	ND		0.054
1,1,1-Trichloroethane	ND		0.054
Carbon Tetrachloride	ND		0.27
1,1-Dichloropropene	ND		0.054
1,2-Dichloroethane	ND		0.054
Trichloroethene	ND		0.054
1,2-Dichloropropane	ND		0.054
Dibromomethane	ND		0.054
Bromodichloromethane	ND		0.054
(cis) 1,3-Dichloropropene	ND		0.054
(trans) 1,3-Dichloropropene	ND		0.054
1,1,2-Trichloroethane	ND		0.054
Tetrachloroethene	0.27		0.054
1,3-Dichloropropane	ND		0.054
Dibromochloromethane	ND		0.054

Date of Report: January 18, 1999  
 Samples Submitted: January 15, 1999  
 Lab Traveler: 01-070  
 Project: 9004

### HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 01-070-01  
 Client ID: B-1-4

Compound	Results	Flags	PQL
1,2-Dibromoethane	ND		0.054
Chlorobenzene	ND		0.054
1,1,1,2-Tetrachloroethane	ND		0.054
Bromoform	ND		0.054
Bromobenzene	ND		0.054
1,1,2,2-Tetrachloroethane	ND		0.054
1,2,3-Trichloropropane	ND		0.27
2-Chlorotoluene	ND		0.054
4-Chlorotoluene	ND		0.054
1,3-Dichlorobenzene	ND		0.054
1,4-Dichlorobenzene	ND		0.054
1,2-Dichlorobenzene	ND		0.054
1,2-Dibromo-3-chloropropane	ND		0.27
1,2,4-Trichlorobenzene	ND		0.054
Hexachlorobutadiene	ND		0.054
1,2,3-Trichlorobenzene	ND		0.054

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	75	65-125
Toluene-d8	77	77-116
4-Bromofluorobenzene	68	67-133

Date of Report: January 18, 1999  
 Samples Submitted: January 15, 1999  
 Lab Traveler: 01-070  
 Project: 9004

### HALOGENATED VOLATILES by EPA 8260B

page 1 of 2

Date Extracted: 1-15-99  
 Date Analyzed: 1-15-99

Matrix: Soil  
 Units: mg/Kg (ppm)

Lab ID: 01-070-02  
 Client ID: B-3-3

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.054
Chloromethane	ND		0.054
Vinyl Chloride	ND		0.054
Bromomethane	ND		0.054
Chloroethane	ND		0.054
Trichlorofluoromethane	ND		0.054
1,1-Dichloroethene	ND		0.054
Methylene Chloride	ND		0.27
(trans) 1,2-Dichloroethene	ND		0.054
1,1-Dichloroethane	ND		0.054
2,2-Dichloropropane	ND		0.054
(cis) 1,2-Dichloroethene	ND		0.054
Chloroform	ND		0.054
1,1,1-Trichloroethane	ND		0.054
Carbon Tetrachloride	ND		0.27
1,1-Dichloropropene	ND		0.054
1,2-Dichloroethane	ND		0.054
Trichloroethene	ND		0.054
1,2-Dichloropropane	ND		0.054
Dibromomethane	ND		0.054
Bromodichloromethane	ND		0.054
(cis) 1,3-Dichloropropene	ND		0.054
(trans) 1,3-Dichloropropene	ND		0.054
1,1,2-Trichloroethane	ND		0.054
Tetrachloroethene	ND		0.054
1,3-Dichloropropane	ND		0.054
Dibromochloromethane	ND		0.054

Date of Report: January 18, 1999  
 Samples Submitted: January 15, 1999  
 Lab Traveler: 01-070  
 Project: 9004

**HALOGENATEDVOLATILES by EPA 8260B**  
 page 2 of 2

Lab ID: 01-070-02  
 Client ID: B-3-3

Compound	Results	Flags	PQL
1,2-Dibromoethane	ND		0.054
Chlorobenzene	ND		0.054
1,1,1,2-Tetrachloroethane	ND		0.054
Bromoform	ND		0.054
Bromobenzene	ND		0.054
1,1,2,2-Tetrachloroethane	ND		0.054
1,2,3-Trichloropropane	ND		0.27
2-Chlorotoluene	ND		0.054
4-Chlorotoluene	ND		0.054
1,3-Dichlorobenzene	ND		0.054
1,4-Dichlorobenzene	ND		0.054
1,2-Dichlorobenzene	ND		0.054
1,2-Dibromo-3-chloropropane	ND		0.27
1,2,4-Trichlorobenzene	ND		0.054
Hexachlorobutadiene	ND		0.054
1,2,3-Trichlorobenzene	ND		0.054
	<b>Percent Recovery</b>		<b>Control Limits</b>
Dibromofluoromethane	75		65-125
Toluene-d8	72	*	77-116
4-Bromofluorobenzene	76		67-133

Date of Report: January 18, 1999  
Samples Submitted: January 15, 1999  
Lab Traveler: 01-070  
Project: 9004

### HALOGENATED VOLATILES by EPA 8260B

page 1 of 2

Date Extracted: 1-15-99  
Date Analyzed: 1-15-99

Matrix: Soil  
Units: mg/Kg (ppm)

Lab ID: 01-070-03  
Client ID: B-4-4

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.054
Chloromethane	ND		0.054
Vinyl Chloride	ND		0.054
Bromomethane	ND		0.054
Chloroethane	ND		0.054
Trichlorofluoromethane	ND		0.054
1,1-Dichloroethene	ND		0.054
Methylene Chloride	ND		0.27
(trans) 1,2-Dichloroethene	ND		0.054
1,1-Dichloroethane	ND		0.054
2,2-Dichloropropane	ND		0.054
(cis) 1,2-Dichloroethene	ND		0.054
Chloroform	ND		0.054
1,1,1-Trichloroethane	ND		0.054
Carbon Tetrachloride	ND		0.27
1,1-Dichloropropene	ND		0.054
1,2-Dichloroethane	ND		0.054
Trichloroethene	ND		0.054
1,2-Dichloropropane	ND		0.054
Dibromomethane	ND		0.054
Bromodichloromethane	ND		0.054
(cis) 1,3-Dichloropropene	ND		0.054
(trans) 1,3-Dichloropropene	ND		0.054
1,1,2-Trichloroethane	ND		0.054
Tetrachloroethene	ND		0.054
1,3-Dichloropropane	ND		0.054
Dibromochloromethane	ND		0.054

Date of Report: January 18, 1999  
 Samples Submitted: January 15, 1999  
 Lab Traveler: 01-070  
 Project: 9004

### HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 01-070-03  
 Client ID: B-4-4

Compound	Results	Flags	PQL
1,2-Dibromoethane	ND		0.054
Chlorobenzene	ND		0.054
1,1,1,2-Tetrachloroethane	ND		0.054
Bromoform	ND		0.054
Bromobenzene	ND		0.054
1,1,2,2-Tetrachloroethane	ND		0.054
1,2,3-Trichloropropane	ND		0.27
2-Chlorotoluene	ND		0.054
4-Chlorotoluene	ND		0.054
1,3-Dichlorobenzene	ND		0.054
1,4-Dichlorobenzene	ND		0.054
1,2-Dichlorobenzene	ND		0.054
1,2-Dibromo-3-chloropropane	ND		0.27
1,2,4-Trichlorobenzene	ND		0.054
Hexachlorobutadiene	ND		0.054
1,2,3-Trichlorobenzene	ND		0.054

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	82	65-125
Toluene-d8	91	77-116
4-Bromofluorobenzene	119	67-133

Date of Report: January 18, 1999  
Samples Submitted: January 15, 1999  
Lab Traveler: 01-070  
Project: 9004

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

Date Extracted: 1-15-99  
Date Analyzed: 1-15-99  
  
Matrix: Soil  
Units: mg/Kg (ppm)  
  
Lab ID: MB0115S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.05
Chloromethane	ND		0.05
Vinyl Chloride	ND		0.05
Bromomethane	ND		0.05
Chloroethane	ND		0.05
Trichlorofluoromethane	ND		0.05
1,1-Dichloroethene	ND		0.05
Methylene Chloride	ND		0.25
(trans) 1,2-Dichloroethene	ND		0.05
1,1-Dichloroethane	ND		0.05
2,2-Dichloropropane	ND		0.05
(cis) 1,2-Dichloroethene	ND		0.05
Chloroform	ND		0.05
1,1,1-Trichloroethane	ND		0.05
Carbon Tetrachloride	ND		0.25
1,1-Dichloropropene	ND		0.05
1,2-Dichloroethane	ND		0.05
Trichloroethene	ND		0.05
1,2-Dichloropropane	ND		0.05
Dibromomethane	ND		0.05
Bromodichloromethane	ND		0.05
(cis) 1,3-Dichloropropene	ND		0.05
(trans) 1,3-Dichloropropene	ND		0.05
1,1,2-Trichloroethane	ND		0.05
Tetrachloroethene	ND		0.05
1,3-Dichloropropane	ND		0.05
Dibromochloromethane	ND		0.05

Date of Report: January 18, 1999  
 Samples Submitted: January 15, 1999  
 Lab Traveler: 01-070  
 Project: 9004

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

Lab ID: MB0115S1

Compound	Results	Flags	PQL
1,2-Dibromoethane	ND		0.05
Chlorobenzene	ND		0.05
1,1,1,2-Tetrachloroethane	ND		0.05
Bromoform	ND		0.05
Bromobenzene	ND		0.05
1,1,2,2-Tetrachloroethane	ND		0.05
1,2,3-Trichloropropane	ND		0.25
2-Chlorotoluene	ND		0.05
4-Chlorotoluene	ND		0.05
1,3-Dichlorobenzene	ND		0.05
1,4-Dichlorobenzene	ND		0.05
1,2-Dichlorobenzene	ND		0.05
1,2-Dibromo-3-chloropropane	ND		0.25
1,2,4-Trichlorobenzene	ND		0.05
Hexachlorobutadiene	ND		0.05
1,2,3-Trichlorobenzene	ND		0.05
Surrogate	Percent Recovery		Control Limits
Dibromofluoromethane	78		65-125
Toluene-d8	80		77-116
4-Bromofluorobenzene	89		67-133

Date of Report: January 18, 1999  
Samples Submitted: January 15, 1999  
Lab Traveler: 01-070  
Project: 9004

**HALOGENATED VOLATILES by EPA 8260B  
MS/MSD QUALITY CONTROL**

Date Extracted: 1-8-99  
Date Analyzed: 1-8-99

Matrix: Soil  
Units: mg/Kg (ppm)

Lab ID: 01-024-05

<b>Compound</b>	<b>Spike Amount</b>	<b>MS</b>	<b>Percent Recovery</b>	<b>MSD</b>	<b>Percent Recovery</b>	<b>RPD</b>
1,1-Dichloroethene	2.50	1.89	75	1.83	73	3.1
Benzene	2.50	2.15	86	2.04	82	5.0
Trichloroethene	2.50	2.46	99	2.34	94	4.9
Toluene	2.50	2.01	81	1.81	72	11
Chlorobenzene	2.50	2.21	88	2.11	84	4.7

Date of Report: January 18, 1999  
Samples Submitted: January 15, 1999  
Lab Traveler: 01-070  
Project: 9004

Date Analyzed: 1-15-99

**% MOISTURE**

Client ID	Lab ID	% Moisture
B-1-4	01-070-01	8.0
B-3-3	01-070-02	8.0
B-4-4	01-070-03	8.0



## DATA QUALIFIERS AND ABBREVIATIONS

- A - Due to 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.
- 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.
- M - Predominantly \_\_\_\_\_ range hydrocarbons present in the sample.
- N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.
- O - Hydrocarbons in the heavy oil range (>C24) are present in the sample.
- P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.
- Q - The RPD of the results between the two columns is greater than 25.
- R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.
- 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 - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- X - Sample underwent silica gel cleanup procedures.
- Y - Sample underwent acid cleanup procedures.
- Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.
- ND - Not Detected  
MRL - Method Reporting Limit  
PQL - Practical Quantitation



# OnSite Environmental Inc.

14924 NE 31st Circle • Redmond, WA 98052  
 Fax: (425) 885-4603 • Phone: (425) 883-3881

# Chain of Custody

Company: EAI (EAS)

Project No.: 9004

Project Name: Owls Lake East sh. CTR.

Project Manager: Dae Holmes

Turn Around Requested:

(Check One)

Same Day

24 Hours

48 Hours

Standard

ASAP MONDAY  
(other)

Project Chemist: DB

Laboratory No. \_\_\_\_\_

Requested Analysis												
NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8240/624/8260	Halogenated Volatiles by 8260	Semivolatiles by 8270/625	PAHs by 8270/625	PCB's by 8081/608	Total RCRA Metals (6)	TCLP Metals	VPH	EPH	% Moisture
				X								X
				X								X
				X								X

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cans
1	B-1-4	1/12	10:00	S	1
2	B-3-3	1/15 →	8:45	S	1
2	B-4-4	1/11	11:35	S	1

RELINQUISHED BY <u>D. Holmes</u>	DATE <u>1/15/99</u>	RECEIVED BY <u>Karen Anderson</u>	DATE <u>1-15-99</u>
FIRM <u>EAI</u>	TIME	FIRM <u>OnSite</u>	TIME <u>12:10pm</u>
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY	DATE REVIEWED		

COMMENTS:  
Watch hold times!!



**OnSite  
Environmental Inc.**

Analytical Testing and Mobile Laboratory Services

January 20, 1999

Dave Holmes  
Environmental Associates, Inc.  
2122 112th Avenue NE, Suite B-100  
Bellevue, WA 98004

Re: Analytical Data for Project 9004  
Laboratory Reference No. 9901-078

Dear Dave:

Enclosed are the analytical results and associated quality control data for samples submitted on January 18, 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 Chemist

Enclosures

Date of Report: January 20, 1999  
Samples Submitted: January 18, 1999  
Lab Traveler: 01-078  
Project: 9004

**HALOGENATED VOLATILES by EPA 8260B**

page 1 of 2

Date Extracted: 1-18-99  
Date Analyzed: 1-18-99

Matrix: Soil  
Units: mg/Kg (ppm)

Lab ID: 01-078-01  
Client ID: B-2-2

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.056
Chloromethane	ND		0.056
Vinyl Chloride	ND		0.056
Bromomethane	ND		0.056
Chloroethane	ND		0.056
Trichlorofluoromethane	ND		0.056
1,1-Dichloroethene	ND		0.056
Methylene Chloride	ND		0.28
(trans) 1,2-Dichloroethene	ND		0.056
1,1-Dichloroethane	ND		0.056
2,2-Dichloropropane	ND		0.056
(cis) 1,2-Dichloroethene	ND		0.056
Chloroform	ND		0.056
1,1,1-Trichloroethane	ND		0.056
Carbon Tetrachloride	ND		0.28
1,1-Dichloropropene	ND		0.056
1,2-Dichloroethane	ND		0.056
Trichloroethene	ND		0.056
1,2-Dichloropropane	ND		0.056
Dibromomethane	ND		0.056
Bromodichloromethane	ND		0.056
(cis) 1,3-Dichloropropene	ND		0.056
(trans) 1,3-Dichloropropene	ND		0.056
1,1,2-Trichloroethane	ND		0.056
Tetrachloroethene	ND		0.056
1,3-Dichloropropane	ND		0.056
Dibromochloromethane	ND		0.056

Date of Report: January 20, 1999  
 Samples Submitted: January 18, 1999  
 Lab Traveler: 01-078  
 Project: 9004

**HALOGENATED VOLATILES by EPA 8260B**  
 page 2 of 2.

Lab ID: 01-078-01  
 Client ID: B-2-2

Compound	Results	Flags	PQL
1,2-Dibromoethane	ND		0.056
Chlorobenzene	ND		0.056
1,1,1,2-Tetrachloroethane	ND		0.056
Bromoform	ND		0.056
Bromobenzene	ND		0.056
1,1,2,2-Tetrachloroethane	ND		0.056
1,2,3-Trichloropropane	ND		0.28
2-Chlorotoluene	ND		0.056
4-Chlorotoluene	ND		0.056
1,3-Dichlorobenzene	ND		0.056
1,4-Dichlorobenzene	ND		0.056
1,2-Dichlorobenzene	ND		0.056
1,2-Dibromo-3-chloropropane	ND		0.28
1,2,4-Trichlorobenzene	ND		0.056
Hexachlorobutadiene	ND		0.056
1,2,3-Trichlorobenzene	ND		0.056

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	81	65-125
Toluene-d8	78	77-116
4-Bromofluorobenzene	83	67-133

Date of Report: January 20, 1999  
Samples Submitted: January 18, 1999  
Lab Traveler: 01-078  
Project: 9004

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

Date Extracted: 1-18-99  
Date Analyzed: 1-18-99  
  
Matrix: Soil  
Units: mg/Kg (ppm)  
  
Lab ID: MB0118S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.050
Chloromethane	ND		0.050
Vinyl Chloride	ND		0.050
Bromomethane	ND		0.050
Chloroethane	ND		0.050
Trichlorofluoromethane	ND		0.050
1,1-Dichloroethene	ND		0.050
Methylene Chloride	ND		0.25
(trans) 1,2-Dichloroethene	ND		0.050
1,1-Dichloroethane	ND		0.050
2,2-Dichloropropane	ND		0.050
(cis) 1,2-Dichloroethene	ND		0.050
Chloroform	ND		0.050
1,1,1-Trichloroethane	ND		0.050
Carbon Tetrachloride	ND		0.25
1,1-Dichloropropene	ND		0.050
1,2-Dichloroethane	ND		0.050
Trichloroethene	ND		0.050
1,2-Dichloropropane	ND		0.050
Dibromomethane	ND		0.050
Bromodichloromethane	ND		0.050
(cis) 1,3-Dichloropropene	ND		0.050
(trans) 1,3-Dichloropropene	ND		0.050
1,1,2-Trichloroethane	ND		0.050
Tetrachloroethene	ND		0.050
1,3-Dichloropropane	ND		0.050
Dibromochloromethane	ND		0.050

Date of Report: January 20, 1999  
 Samples Submitted: January 18, 1999  
 Lab Traveler: 01-078  
 Project: 9004

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

Lab ID: MB0118S1

Compound	Results	Flags	PQL
1,2-Dibromoethane	ND		0.050
Chlorobenzene	ND		0.050
1,1,1,2-Tetrachloroethane	ND		0.050
Bromoform	ND		0.050
Bromobenzene	ND		0.050
1,1,1,2-Tetrachloroethane	ND		0.050
1,2,3-Trichloropropane	ND		0.25
2-Chlorotoluene	ND		0.050
4-Chlorotoluene	ND		0.050
1,3-Dichlorobenzene	ND		0.050
1,4-Dichlorobenzene	ND		0.050
1,2-Dichlorobenzene	ND		0.050
1,2-Dibromo-3-chloropropane	ND		0.25
1,2,4-Trichlorobenzene	ND		0.050
Hexachlorobutadiene	ND		0.050
1,2,3-Trichlorobenzene	ND		0.050

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	90	65-125
Toluene-d8	83	77-116
4-Bromofluorobenzene	78	67-133

Date of Report: January 20, 1999  
Samples Submitted: January 18, 1999  
Lab Traveler: 01-078  
Project: 9004

**HALOGENATED VOLATILES by EPA 8260B  
MS/MSD QUALITY CONTROL**

Date Extracted: 1-18-99  
Date Analyzed: 1-18-99

Matrix: Soil  
Units: mg/Kg (ppm)

Lab ID: 01-077-01MS

Compound	Spike Amount	MS	Percent Recovery	MSD	Percent Recovery	RPD	
1,1-Dichloroethene	2.50	1.84	74	2.12	85	14	*
Benzene	2.50	2.21	88	2.37	95	7.3	
Trichloroethene	2.50	2.10	84	2.32	93	10	*
Toluene	2.50	1.87	75	1.70	68	9.8	
Chlorobenzene	2.50	1.94	78	1.95	78	0.39	

\* RPD outside control limits.

Date of Report: January 20, 1999  
Samples Submitted: January 18, 1999  
Lab Traveler: 01-078  
Project: 9004

**HALOGENATED VOLATILES by EPA 8260B**

page 1 of 2

Date Extracted: 1-18-99  
Date Analyzed: 1-18-99

Matrix: Water  
Units: ug/L (ppb)

Lab ID: 01-078-02  
Client ID: MW-1

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
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
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		1.0
Carbon Tetrachloride	ND		5.0
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
(cis) 1,3-Dichloropropene	ND		1.0
(trans) 1,3-Dichloropropene	ND		1.0
1,1,2-Trichloroethane	ND		1.0
Tetrachloroethene	ND		1.0
1,3-Dichloropropane	ND		1.0
Dibromochloromethane	ND		1.0
1,2-Dibromoethane	ND		1.0

Date of Report: January 20, 1999  
 Samples Submitted: January 18, 1999  
 Lab Traveler: 01-078  
 Project: 9004

### HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 01-078-02  
 Client ID: MW-1

Compound	Results	Flags	PQL
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	95	71-133
Toluene-d8	89	80-151
4-Bromofluorobenzene	96	75-139

Date of Report: January 20, 1999  
Samples Submitted: January 18, 1999  
Lab Traveler: 01-078  
Project: 9004

HALOGENATED VOLATILES by EPA 8260B  
METHOD BLANK QUALITY CONTROL

page 1 of 2

Date Extracted: 1-18-99  
Date Analyzed: 1-18-99  
  
Matrix: Water  
Units: ug/L (ppb)  
  
Lab ID: MB0118W1

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
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
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		1.0
Carbon Tetrachloride	ND		5.0
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
(cis) 1,3-Dichloropropene	ND		1.0
(trans) 1,3-Dichloropropene	ND		1.0
1,1,2-Trichloroethane	ND		1.0
Tetrachloroethene	ND		1.0
1,3-Dichloropropane	ND		1.0
Dibromochloromethane	ND		1.0
1,2-Dibromoethane	ND		1.0

Date of Report: January 20, 1999  
 Samples Submitted: January 18, 1999  
 Lab Traveler: 01-078  
 Project: 9004

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

Lab ID: MB0118W1

Compound	Results	Flags	PQL
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	92	71-133
Toluene-d8	90	80-151
4-Bromofluorobenzene	96	75-139

Date of Report: January 20, 1999  
 Samples Submitted: January 18, 1999  
 Lab Traveler: 01-078  
 Project: 9004

**HALOGENATED VOLATILES by EPA 8260B  
 SB/SBD QUALITY CONTROL**

Date Extracted: 1-15-99  
 Date Analyzed: 1-15-99

Matrix: Water  
 Units: ug/L (ppb)

Lab ID: SB0115W1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	RPD
1,1-Dichloroethene	50.0	39.2	78	38.8	78	0.93
Benzene	50.0	47.2	94	47.9	96	1.5
Trichloroethene	50.0	51.6	103	51.7	103	0.13
Toluene	50.0	43.3	86	46.6	93	7.2 *
Chlorobenzene	50.0	47.2	94	47.4	95	0.42

\* RPD is outside control limits.

Date of Report: January 20, 1999  
Samples Submitted: January 18, 1999  
Lab Traveler: 01-078  
Project: 9004

Date Analyzed: 1-18-99

**% MOISTURE**

Client ID	Lab ID	% Moisture
B-2-2	01-078-01	10



## DATA QUALIFIERS AND ABBREVIATIONS

- A - Due to 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.
- 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.
- M - Predominantly \_\_\_\_\_ range hydrocarbons present in the sample.
- N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.
- O - Hydrocarbons in the heavy oil range (>C24) are present in the sample.
- P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.
- Q - The RPD of the results between the two columns is greater than 25.
- R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.
- 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 - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- X - Sample underwent silica gel cleanup procedures.
- Y - Sample underwent acid cleanup procedures.
- Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.
- ND - Not Detected  
MRL - Method Reporting Limit  
PQL - Practical Quantitation



# OnSite Environmental Inc.

14924 NE 31st Circle • Redmond, WA 98052  
 Fax: (425) 885-4603 • Phone: (425) 883-3881

## Chain of Custody

Company: **EAI**

Project No.: **9004**

Project Name: **Ovrlake East**

Project Manager: **1 sample**  
**Dave Holmes**

Turn Around Requested:  
 (Check One)

Same Day

24 Hours

48 Hours

Standard

**ASAP/1/20?**  
 (other)

Project Chemist: \_\_\_\_\_

Laboratory No. \_\_\_\_\_

Requested Analysis:

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 (6)	TCLP Metals	VPH	EPH	% Moisture
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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 (6)	TCLP Metals	VPH	EPH	% Moisture	
B-2-2		1/18	9:21	S	1					X										X
MW-1		1/18	14:40	W	3					X										

RELINQUISHED BY <b>Dave Holmes</b>	DATE <b>1/18/99</b>	RECEIVED BY <b>[Signature]</b>	DATE <b>1/18/99</b>	COMMENTS: <b>Goes w/ Traveler 01-070</b>
FIRM <b>EAI</b>	TIME <b>15:05</b>	FIRM <b>[Signature]</b>	TIME <b>1505</b>	
RELINQUISHED BY	DATE	RECEIVED BY	DATE	
FIRM	TIME	FIRM	TIME	
REVIEWED BY	DATE REVIEWED			