

TOWN and COUNTRY CLEANERS

Bellevue, Washington

Prepared for

Joyce Smith

**Project No. 9001
December 1990**

EVERGREEN ENVIRONMENTAL CONSULTING

**P.O. Box 17177
Seattle, Washington 98117-0899
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**CONTAMINATION ASSESSMENT REPORT
TOWN AND COUNTRY CLEANERS
BELLEVUE, WASHINGTON
December 8, 1990
Project 9001**

1.0 INTRODUCTION

1.1 Background

Town and Country Cleaners has operated at 310 105th Avenue Northeast, Bellevue, Washington, as a commercial dry cleaners for approximately 12 years. Prior to 1987, residue from a perchloroethylene (PCE) "still" located on the site had been stored in containers to the east of the building. *permitted? (on RCRA 1987)*

Preliminary assessment activities were performed by Associated Earth Sciences, Inc., (AESI) of Kirkland, Washington. On November 20, 1989, a representative of AESI visited the site and collected one soil sample from an area behind (to the east of) the building, at a depth of approximately 6 inches. The sample was analyzed by EPA method 5030 for halogenated volatile organics. The soil contained 67 parts per million (ppm) of PCE. Laboratory reports are included in Appendix A. Table 1 presents a summary of the chemistry results. Preliminary conversations with Ms. Julie Sellick established the PCE cleanup criteria at 100 parts per billion (ppb).

On January 17, 1990, a representative of AESI supervised remedial activities at the site. A Sensidyne Gas Sampling System was used as a screening device to estimate the PCE content of sediment samples collected from the excavation pits during the January visit. A head space analysis was performed by inserting the intake of the sensidyne system into a jar which was half filled with soil. Contaminated material was excavated and placed into nine 55 gallon drums for shipment to an incineration facility. Approximately 3 cubic yards of material was excavated and removed. The excavated area is indicated on Figure 1.

On March 9, 1990, AESI supervised the placement of three borings. Two of the borings were completed as vapor probes. Sediment samples were collected from the borings for analysis of PCE concentrations. The laboratory reports are included in Appendix A. A summary of the chemistry results is presented in Table 1. Logs of the borings and details of the vapor probe construction are included in Appendix B. The location of the boring and vapor probes is presented in Figure 1.

TABLE 1 - SUMMARY OF CHEMICAL ANALYSES

Town and Country Cleaners
EEC Project 9001

These results are
from excavated soil
that was drummed +
removed.

- shipping manifests

Sample Location	Sample Depth (FT)	PCE (ppb)	LDL
EP-1	0.5	67000	5000
EP-1	8.0	150	15
EP-2	9.0	1100	15
EP-3	2.0	16	15
EP-3	8.5	16	15
B-1	9.0	ND	25
B-1	15.7	ND	25
VP-1	7.5	160	25
VP-1	15.0	120	25
VP-2	14.0	86	25
VP-2	18.0	49	25
VP-3	5.0	25	25
VP-3	9.0 & 14.1	42	25
VP-4	5.0	48	25
VP-4	9.1	41	25
VP-5	4.5	350	25
VP-5	9.2	150	25
VP-5	13.8	350	25
VP-5	18.7	36	25

NOTE:

PCE - Perchloroethylene

ppb - part per billion (ug/Kg - microgram/kilogram)

LDL - Lower detection limit of laboratory analysis

EP - Exploration Pit

B - HSA Boring

VP - Vapor Probe Boring

ND - Not detected at a LDL of 1000 ppb

Method A (PERK) PCE

500ppb Soil

5 ppb Ground Water

On September 24, 1990, Evergreen Environmental Consulting (EEC) was contracted to perform additional assessment activities and perform remedial activities if necessary. This report details the activities of EEC at the Town and Country Cleaners.

1.2 Site Location and Description

The site is located in a commercial district within the city limits of Bellevue, in King County, Washington. Adjacent businesses are two office supply stores, and a delicatessen. A barber shop is located above the dry cleaners. Approximately 50 percent of the area contains structures and the remaining portion is paved with asphalt except for a small grass 6 foot strip immediately east of the dry cleaners. Storm runoff from the site flows to a system of city storm drains. A storm drain is located approximately 100 feet southeast of the excavated area.

The topography of the site is nearly level with relief less than one foot in the area of the excavation. South of the southern most property line, the alley to the east of the dry cleaners slopes gently toward the south and has an elevation change of approximately 5 feet in 100 feet.

1.3 Purpose and Scope of Activities

The purpose of this activity was to assess the site for additional PCE concentrations within the subsurface material to the east of the dry cleaners. Cleanup standards were raised from the preliminary level of 100 ppb to 500 ppb based on cleanup criteria in the proposed amendments to the Model Toxics Control Act (Chapter 173-340 of the Washington Administrative Code).

The scope of services for this project consisted of the following activities:

1. Developing a site safety plan. All work was performed at personal protection Level D (gloves and coveralls) with Level B protective equipment (supplied air respirators) available on site.
2. Securing a drilling contractor to advance three hollow stem auger (HSA) borings to an approximate depth of 15 feet. The borings were completed as 2 inch vapor probes.
3. Collecting soil samples in all borings. Samples were collected at 2-1/2 foot intervals. Samples were field evaluated for PCE contamination using a sensidyne system connected to a colorimetric tube which detects PCE concen-

trations. Selected samples were transported to a chemical laboratory for analysis and quantitation of PCE content.

4. Compiling a report documenting observations and field activities, and presenting results and recommendations.

2.0 FIELD CONDITIONS AND OPERATIONS

2.1 Geology

On October 5, 1990, three hollow stem auger borings were advanced using methods described in Appendix C of this report. The locations of these borings are shown in Figure 1. All three borings were completed as vapor probes as described in Appendix C. Boring logs for all six borings which have been advanced at the site are presented in Appendix B. The soils encountered at the site were glacial deposits consisting of silt, sand and gravel. The tightly consolidated stratum of silty sand with occasional gravel was penetrated in all six borings which have been advanced to the east of the building.

2.2 Ground Water

Ground water was not encountered in any of the borings. Based on information obtained from other borings in the area, ground water is greater than 40 feet deep in the vicinity of the study.

2.3 Chemical Sampling

Prior to EEC involvement 11 chemical analyses had been performed on sediment samples collected from the Town and Country site. The total number of analyses performed was 19. Table 1 presents a summary of the chemical analyses. Five samples had been collected from exploration pits during remedial activities and the remaining 14 samples had been collected from five borings. Samples for analyses were collected from 6 inches to 20 feet as indicated in Table 1. All samples were analyzed by EPA method 5030 for halogenated volatile organics.

3.0 DISCUSSION

Sediment removed from the area designated as exploration pit 1 (EP-1) and EP-2 were the only samples which indicated contamination above the cleanup criteria of 500 ppb. All other

chemical analyses indicated concentrations ranged from below the detectable limit of 25 ppb to 350 ppb. The deeper sediments from the borings ranged from 36 ppb to 120 ppb at depths of 15.0 feet to 18.7 feet.

As can be interpreted from Table 1 concentrations decreased with depth. The tightly consolidated subsurface sediment has reduced the migration of PCE concentrations with depth. Based on the analyses of sediment collected from VP-3, B-1, and EP-3, lateral migration of the PCE has also been minimized. Chemical analyses indicate concentrations of 42 ppb (VP-3), less than 25 ppb (B-1), and 16 ppb (EP-3) from the respective exploration locations.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the exploration borings, field operations, and laboratory analyses of sediment samples, it is the opinion of EEC that the remedial activities performed under the direction of AESI have adequately remediated the site. Low PCE concentrations obtained from samples collected at depth and at the perimeter of the area indicate that the PCE has not migrated.

Removal of the contaminated material during the excavation activities has removed sediment that contains greater than the 500 ppb PCE concentration cleanup criteria of the proposed amendments to the Model Toxics Control Act (Chapter 173-340 of the Washington Administrative Code). No further remedial activities are necessary and EEC recommends that no additional assessment be performed.

5.0 STANDARD OF CARE

The recommendations and conclusions contained in this report represent our professional opinions. These opinions were derived in accordance with currently accepted geologic, engineering, and environmental practices at this time and location. Other than this, no warranty is implied or intended.

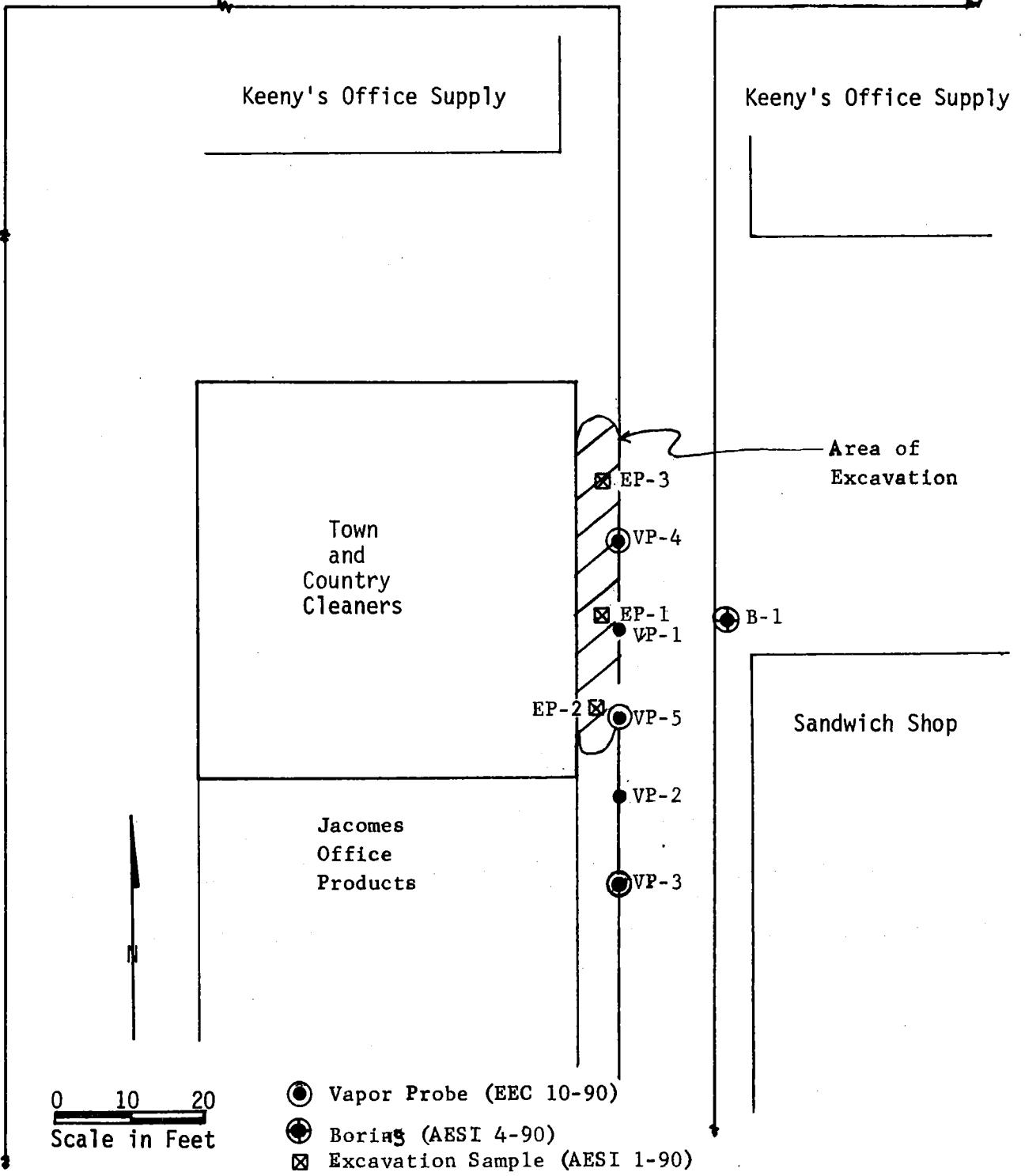
EVERGREEN ENVIRONMENTAL CONSULTANTS


John W. Reese, C.P.G.
Principal

CAR.001

105th Avenue N.E.

N.E. 45th Street



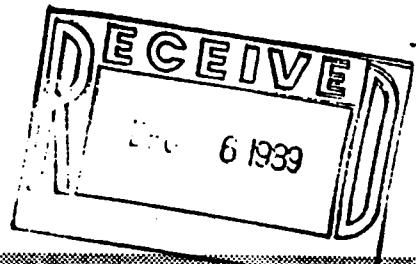
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TOWN AND COUNTRY CLEANERS
Bellevue, Washington



NORTH CREEK ANALYTICAL

18939 120th Ave. N.E., Suite 101 • Bothell, WA 98011
(206) 481-9200 • FAX (206) 485-2992



Associated Earth Sciences, Inc.
911 5th Avenue, Suite 100
Kirkland, WA 98033
Attention: John W. Reese, C.P.G.

Client Project ID: Town & Country Cleaners
Sample Descript: Soil #11201530
Analysis Method: EPA 5030/8010
Lab Number: 911-0135

Sampled: Nov 20, 1989
Received: Nov 21, 1989
Analyzed: Dec 1, 1989
Reported: Dec 4, 1989

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Bromodichloromethane.....	5.0	.....
Bromoform.....	5.0	.....
Bromomethane.....	5.0	.....
Carbon tetrachloride.....	5.0	.....
Chlorobenzene.....	5.0	.....
Chloroethane.....	25.0	.....
2-Chloroethylvinyl ether.....	5.0	.....
Chloroform.....	5.0	.....
Chloromethane.....	5.0	.....
Dibromochloromethane.....	5.0	.....
1,2-Dichlorobenzene.....	10.0	.....
1,3-Dichlorobenzene.....	10.0	.....
1,4-Dichlorobenzene.....	10.0	.....
1,1-Dichloroethane.....	5.0	.....
1,2-Dichloroethane.....	5.0	.....
1,1-Dichloroethene.....	5.0	.....
Total 1,2-Dichloroethene.....	5.0	.....
1,2-Dichloropropane.....	5.0	.....
cis-1,3-Dichloropropene.....	5.0	.....
trans-1,3-Dichloropropene.....	5.0	.....
Methylene chloride.....	10.0	.....
1,1,2-Tetrachloroethane.....	5.0	.....
Tetrachloroethene.....	5.0	67
1,1,1-Trichloroethane.....	5.0	.....
1,1,2-Trichloroethane.....	5.0	.....
Trichloroethene.....	5.0	.....
Trichlorofluoromethane.....	5.0	.....
Vinyl chloride.....	10.0	.....

Analyses reported as N.D. were not present above the stated limit of detection.

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Scot Cocanour
Laboratory Director



18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011
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Associated Earth Sciences, Inc. 911 5th Avenue, Suite 100 Kirkland, WA 98033 Attention: John W. Reese, C.P.G.	Client Project ID: 8911-21V, Town & Country Sample Descript: Soil, # 01171501 Analysis Method: EPA 5030/8010 Lab Number: 001-0223	EP-2 g	Sampled: Jan 17, 1990 Received: Jan 18, 1990 Analyzed: Jan 18, 1990 Reported: Jan 19, 1990
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HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	15.0	.....
Bromoform.....	15.0	.....
Bromomethane.....	15.0	.....
Carbon tetrachloride.....	15.0	.....
Chlorobenzene.....	15.0	.....
Chloroethane.....	75.0	.....
2-Chloroethylvinyl ether.....	15.0	.....
Chloroform.....	15.0	.....
Chloromethane.....	15.0	.....
Dibromochloromethane.....	15.0	.....
1,2-Dichlorobenzene.....	30.0	.....
1,3-Dichlorobenzene.....	30.0	.....
1,4-Dichlorobenzene.....	30.0	.....
1,1-Dichloroethane.....	15.0	.....
1,2-Dichloroethane.....	15.0	.....
1,1-Dichloroethylene.....	15.0	.....
Total 1,2-Dichloroethene.....	15.0	.....
1,2-Dichloropropane.....	15.0	.....
cis-1,3-Dichloropropene.....	15.0	.....
trans-1,3-Dichloropropene.....	15.0	.....
Methylene chloride.....	30.0	.....
1,1,2,2-Tetrachloroethane.....	15.0	.....
Tetrachloroethene.....	15.0	1,100
1,1,1-Trichloroethane.....	15.0	.....
1,1,2-Trichloroethane.....	15.0	.....
Trichloroethene.....	15.0	.....
Trichlorofluoromethane.....	15.0	.....
Vinyl chloride.....	30.0	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other required additional sample dilution, detection limits for this sample have been raised.

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Scot Cocanour
Laboratory Director

Jan 1990



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Associated Earth Sciences, Inc. 911 5th Avenue, Suite 100 Kirkland, WA 98033 Attention: John W. Reese, C.P.G.	Client Project ID: 8911-21V Sample Descript: Soil, # 01171550 Analysis Method: EPA 5030/8010 Lab Number: 001-0224	EP-3 8.5'	Sampled: Jan 17, 1990 Received: Jan 18, 1990 Analyzed: Jan 18, 1990 Reported: Jan 19, 1990
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HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	15.0	N.D.
Bromoform.....	15.0	N.D.
Bromomethane.....	15.0	N.D.
Carbon tetrachloride.....	15.0	N.D.
Chlorobenzene.....	15.0	N.D.
Chloroethane.....	75.0	N.D.
2-Chloroethylvinyl ether.....	15.0	N.D.
Chloroform.....	15.0	N.D.
Chloromethane.....	15.0	N.D.
Dibromochloromethane.....	15.0	N.D.
1,2-Dichlorobenzene.....	30.0	N.D.
1,3-Dichlorobenzene.....	30.0	N.D.
1,4-Dichlorobenzene.....	30.0	N.D.
1,1-Dichloroethane.....	15.0	N.D.
1,2-Dichloroethane.....	15.0	N.D.
1,1-Dichloroethene.....	15.0	N.D.
Total 1,2-Dichloroethene.....	15.0	N.D.
1,2-Dichloropropane.....	15.0	N.D.
cis-1,3-Dichloropropene.....	15.0	N.D.
trans-1,3-Dichloropropene.....	15.0	N.D.
Methylene chloride.....	30.0	N.D.
1,1,2,2-Tetrachloroethane.....	15.0	N.D.
Tetrachloroethene.....	15.0	16.
1,1,1-Trichloroethane.....	15.0	N.D.
1,1,2-Trichloroethane.....	15.0	N.D.
Trichloroethene.....	15.0	N.D.
Trichlorofluoromethane.....	15.0	N.D.
Vinyl chloride.....	30.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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A handwritten signature in black ink that reads "Scot Cocanour".

Scot Cocanour
Laboratory Director



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Associated Earth Sciences, Inc.
911 5th Avenue, Suite 100
Kirkland, WA 98033
Attention: John W. Reese, C.P.G.

Client Project ID: 8911-21V, Town & Country
Sample Descript: Soil, # 01171510
Analysis Method: EPA 5030/8010
Lab Number: 001-0222

Sampled: Jan 17, 1990
EP-1 8' Received: Jan 18, 1990
Analyzed: Jan 18, 1990
Reported: Jan 19, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	15.0	N.D.
Bromoform.....	15.0	N.D.
Bromomethane.....	15.0	N.D.
Carbon tetrachloride.....	15.0	N.D.
Chlorobenzene.....	15.0	N.D.
Chloroethane.....	75.0	N.D.
2-Chloroethylvinyl ether.....	15.0	N.D.
Chloroform.....	15.0	N.D.
Chloromethane.....	15.0	N.D.
Dibromochloromethane.....	15.0	N.D.
1,2-Dichlorobenzene.....	30.0	N.D.
1,3-Dichlorobenzene.....	30.0	N.D.
1,4-Dichlorobenzene.....	30.0	N.D.
1,1-Dichloroethane.....	15.0	N.D.
1,2-Dichloroethane.....	15.0	N.D.
1,1-Dichloroethene.....	15.0	N.D.
Total 1,2-Dichloroethene.....	15.0	N.D.
1,2-Dichloropropane.....	15.0	N.D.
cis-1,3-Dichloropropene.....	15.0	N.D.
trans-1,3-Dichloropropene.....	15.0	N.D.
Methylene chloride.....	30.0	N.D.
1,1,2,2-Tetrachloroethane.....	15.0	N.D.
Tetrachloroethene.....	15.0	150
1,1,1-Trichloroethane.....	15.0	N.D.
1,1,2-Trichloroethane.....	15.0	N.D.
Trichloroethene.....	15.0	N.D.
Trichlorofluoromethane.....	15.0	N.D.
Vinyl chloride.....	30.0	N.D.

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Associated Earth Sciences, Inc.
911 5th Avenue, Suite 100
Kirkland, WA 98033
Attention: John W. Reese, C.P.G.

Client Project ID: 8911-21V, Town & Country Cleaners
Sample Descript: Soil, B-1 @ 7.5'
Analysis Method: EPA 5030/8010
Lab Number: 004-0197

Sampled: Apr 9, 1990
Received: Apr 10, 1990
Analyzed: Apr 11, 1990
Reported: Apr 17, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25.0	N.D.
Bromoform.....	25.0	N.D.
Bromomethane.....	25.0	N.D.
Carbon tetrachloride.....	25.0	N.D.
Chlorobenzene.....	25.0	N.D.
Chloroethane.....	125.0	N.D.
2-Chloroethylvinyl ether.....	25.0	N.D.
Chloroform.....	25.0	N.D.
Chloromethane.....	25.0	N.D.
Dibromochloromethane.....	25.0	N.D.
1,2-Dichlorobenzene.....	50.0	N.D.
1,3-Dichlorobenzene.....	50.0	N.D.
1,4-Dichlorobenzene.....	50.0	N.D.
1,1-Dichloroethane.....	25.0	N.D.
1,2-Dichloroethane.....	25.0	N.D.
1,1-Dichloroethene.....	25.0	N.D.
Total 1,2-Dichloroethene.....	25.0	N.D.
1,2-Dichloropropane.....	25.0	N.D.
cis-1,3-Dichloropropene.....	25.0	N.D.
trans-1,3-Dichloropropene.....	25.0	N.D.
Methylene chloride.....	50.0	N.D.
1,1,2,2-Tetrachloroethane.....	25.0	N.D.
Tetrachloroethene.....	25.0	N.D.
1,1,1-Trichloroethane.....	25.0	N.D.
1,1,2-Trichloroethane.....	25.0	N.D.
Trichloroethene.....	25.0	N.D.
Trichlorofluoromethane.....	25.0	N.D.
Vinyl chloride.....	50.0	N.D.

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Associated Earth Sciences, Inc.
911 5th Avenue, Suite 100
Kirkland, WA 98033
Attention: John W. Reese, C.P.G.

Client Project ID: 8911-21V, Town & Country Cleaners
Sample Descript: Soil, B-1 @ 15.0'
Analysis Method: EPA 5030/8010
Lab Number: 004-0200

Sampled: Apr 9, 1990
Received: Apr 10, 1990
Analyzed: Apr 11, 1990
Reported: Apr 17, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25.0	.....
Bromoform.....	25.0	.....
Bromomethane.....	25.0	.....
Carbon tetrachloride.....	25.0	.....
Chlorobenzene.....	25.0	.....
Chloroethane.....	125.0	.....
2-Chloroethylvinyl ether.....	25.0	.....
Chloroform.....	25.0	.....
Chloromethane.....	25.0	.....
Dibromochloromethane.....	25.0	.....
1,2-Dichlorobenzene.....	50.0	.....
1,3-Dichlorobenzene.....	50.0	.....
1,4-Dichlorobenzene.....	50.0	.....
1,1-Dichloroethane.....	25.0	.....
1,2-Dichloroethane.....	25.0	.....
1,1-Dichloroethene.....	25.0	.....
Total 1,2-Dichloroethene.....	25.0	.....
1,2-Dichloropropane.....	25.0	.....
cis-1,3-Dichloropropene.....	25.0	.....
trans-1,3-Dichloropropene.....	25.0	.....
Methylene chloride.....	50.0	.....
1,1,2,2-Tetrachloroethane.....	25.0	.....
Tetrachloroethene.....	25.0	.....
1,1,1-Trichloroethane.....	25.0	.....
1,1,2-Trichloroethane.....	25.0	.....
Trichloroethene.....	25.0	.....
Trichlorofluoromethane.....	25.0	.....
Vinyl chloride.....	50.0	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

NORTH CREEK ANALYTICAL

A handwritten signature in black ink that reads "Scot Cocanour".

Scot Cocanour
Laboratory Director



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Associated Earth Sciences, Inc. 911 5th Avenue, Suite 100 Kirkland, WA 98033 Attention: John W. Reese, C.P.G.	Client Project ID: 8911-21V, Town & Country Cleaners Sample Descript: Soil, (B-2) MW-1 @ 7.5' Analysis Method: EPA 5030/8010 Lab Number: 004-0198	Sampled: Apr 9, 1990 Received: Apr 10, 1990 Analyzed: Apr 11, 1990 Reported: Apr 17, 1990
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HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25.0	.....
Bromoform.....	25.0	.....
Bromomethane.....	25.0	.....
Carbon tetrachloride.....	25.0	.....
Chlorobenzene.....	25.0	.....
Chloroethane.....	125.0	.....
2-Chloroethylvinyl ether.....	25.0	.....
Chloroform.....	25.0	.....
Chloromethane.....	25.0	.....
Dibromochloromethane.....	25.0	.....
1,2-Dichlorobenzene.....	50.0	.....
1,3-Dichlorobenzene.....	50.0	.....
1,4-Dichlorobenzene.....	50.0	.....
1,1-Dichloroethane.....	25.0	.....
1,2-Dichloroethane.....	25.0	.....
1,1-Dichloroethene.....	25.0	.....
Total 1,2-Dichloroethene.....	25.0	.....
1,2-Dichloropropane.....	25.0	.....
cis-1,3-Dichloropropene.....	25.0	.....
trans-1,3-Dichloropropene.....	25.0	.....
Methylene chloride.....	50.0	.....
1,1,2,2-Tetrachloroethane.....	25.0	.....
Tetrachloroethene.....	25.0	160
1,1,1-Trichloroethane.....	25.0	.....
1,1,2-Trichloroethane.....	25.0
Trichloroethene.....	25.0
Trichlorofluoromethane.....	25.0
Vinyl chloride.....	50.0

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Laboratory Director



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Associated Earth Sciences, Inc. 911 5th Avenue, Suite 100 Kirkland, WA 98033 Attention: John W. Reese, C.P.G.	Client Project ID: 8911-21V, Town & Country Cleaners Sample Descript: Soil, (B-2) MW-1 @ 15.0' Analysis Method: EPA 5030/8010 Lab Number: 004-0199	Sampled: Apr 9, 1990 Received: Apr 10, 1990 Analyzed: Apr 11, 1990 Reported: Apr 17, 1990
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HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25.0	.....
Bromoform.....	25.0	.....
Bromomethane.....	25.0	.....
Carbon tetrachloride.....	25.0	.....
Chlorobenzene.....	25.0	.....
Chloroethane.....	25.0	.....
2-Chloroethylvinyl ether.....	125.0	.....
Chloroform.....	25.0	.....
Chloromethane.....	25.0	.....
Dibromochloromethane.....	25.0	.....
1,2-Dichlorobenzene.....	50.0	.....
1,3-Dichlorobenzene.....	50.0	.....
1,4-Dichlorobenzene.....	50.0	.....
1,1-Dichloroethane.....	25.0	.....
1,2-Dichloroethane.....	25.0	.....
1,1-Dichloroethene.....	25.0	.....
Total 1,2-Dichloroethene.....	25.0	.....
1,2-Dichloropropane.....	25.0	.....
cis-1,3-Dichloropropene.....	25.0	.....
trans-1,3-Dichloropropene.....	25.0	.....
Methylene chloride.....	50.0	.....
1,1,2,2-Tetrachloroethane.....	25.0	.....
Tetrachloroethene.....	25.0	120
1,1,1-Trichloroethane.....	25.0	.....
1,1,2-Trichloroethane.....	25.0	.....
Trichloroethene.....	25.0	.....
Trichlorofluoromethane.....	25.0	.....
Vinyl chloride.....	50.0	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

NORTH CREEK ANALYTICAL

A handwritten signature in black ink that reads "Scot Cocanour".

Scot Cocanour
Laboratory Director



18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011
Phone (206) 481-9200 • FAX (206) 485-2992

Associated Earth Sciences, Inc. 911 5th Avenue, Suite 100 Kirkland, WA 98033 Attention: John W. Reese, C.P.G.	Client Project ID: 8911-21V, Town & Country Cleaners Sample Descript: Soil, (B-3) MW-2 @ 12.5' Analysis Method: EPA 5030/8010 Lab Number: 004-0201	Sampled: Apr 9, 1990 Received: Apr 10, 1990 Analyzed: Apr 11, 1990 Reported: Apr 17, 1990
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HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25.0	.....
Bromoform.....	25.0	.....
Bromomethane.....	25.0	.....
Carbon tetrachloride.....	25.0	.....
Chlorobenzene.....	25.0	.....
Chloroethane.....	125.0	.....
2-Chloroethylvinyl ether.....	25.0	.....
Chloroform.....	25.0	.....
Chloromethane.....	25.0	.....
Dibromochloromethane.....	25.0	.....
1,2-Dichlorobenzene.....	50.0	.....
1,3-Dichlorobenzene.....	50.0	.....
1,4-Dichlorobenzene.....	50.0	.....
1,1-Dichloroethane.....	25.0	.....
1,2-Dichloroethane.....	25.0	.....
1,1-Dichloroethene.....	25.0	.....
Total 1,2-Dichloroethene.....	25.0	.....
1,2-Dichloropropane.....	25.0	.....
cis-1,3-Dichloropropene.....	25.0	.....
trans-1,3-Dichloropropene.....	25.0	.....
Methylene chloride.....	50.0	.....
1,1,2,2-Tetrachloroethane.....	25.0	.....
Tetrachloroethene.....	25.0	86
1,1,1-Trichloroethane.....	25.0	.....
1,1,2-Trichloroethane.....	25.0	.....
Trichloroethene.....	25.0	.....
Trichlorofluoromethane.....	25.0	.....
Vinyl chloride.....	50.0	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Associated Earth Sciences, Inc. 911 5th Avenue, Suite 100 Kirkland, WA 98033 Attention: John W. Reese, C.P.G.	Client Project ID: 8911-21V, Town & Country Cleaners	Sample Descript: Soil, (B-3) MW-2 @ 17.5'	Sampled: Apr 9, 1990
		Analysis Method: EPA 5030/8010	Received: Apr 10, 1990
		Lab Number: 004-0202	Analyzed: Apr 11, 1990
			Reported: Apr 17, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25.0	.....
Bromoform.....	25.0	.....
Bromomethane.....	25.0	.....
Carbon tetrachloride.....	25.0	.....
Chlorobenzene.....	25.0	.....
Chloroethane.....	125.0	.....
2-Chloroethylvinyl ether.....	25.0	.....
Chloroform.....	25.0	.....
Chloromethane.....	25.0	.....
Dibromochloromethane.....	25.0	.....
1,2-Dichlorobenzene.....	50.0	.....
1,3-Dichlorobenzene.....	50.0	.....
1,4-Dichlorobenzene.....	50.0	.....
1,1-Dichloroethane.....	25.0	.....
1,2-Dichloroethane.....	25.0	.....
1,1-Dichloroethene.....	25.0	.....
Total 1,2-Dichloroethene.....	25.0	.....
1,2-Dichloropropane.....	25.0	.....
cis-1,3-Dichloropropene.....	25.0	.....
trans-1,3-Dichloropropene.....	25.0	.....
Methylene chloride.....	50.0	.....
1,1,2,2-Tetrachloroethane.....	25.0	.....
Tetrachloroethene.....	25.0	49
1,1,1-Trichloroethane.....	25.0	.....
1,1,2-Trichloroethane.....	25.0	.....
Trichloroethene.....	25.0	.....
Trichlorofluoromethane.....	25.0	.....
Vinyl chloride.....	50.0	.....

Analyses reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Evergreen Environ. Consulting
P.O. Box 17177
Seattle, WA 98107-0877
Attention: John Reese

Client Project ID: 000-9001
Sample Descript: Soil, 10051000
Analysis Method: EPA 5030/8010
Lab Number: 010-0180

Sampled: Oct 5, 1990
Received: Oct 5, 1990
Analyzed: Oct 16, 1990
Reported: Oct 17, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25	.....
Bromoform.....	25	.....
Bromomethane.....	25	.....
Carbon tetrachloride.....	25	.....
Chlorobenzene.....	25	.....
Chloroethane.....	125	.....
2-Chloroethylvinyl ether.....	25	.....
Chloroform.....	25	.....
Chloromethane.....	25	.....
Dibromochloromethane.....	25	.....
1,2-Dichlorobenzene.....	50	.....
1,3-Dichlorobenzene.....	50	.....
1,4-Dichlorobenzene.....	50	.....
1,1-Dichloroethane.....	25	.....
1,2-Dichloroethane.....	25	.....
1,1-Dichloroethene.....	25	.....
Total 1,2-Dichloroethene.....	25	.....
1,2-Dichloropropane.....	25	.....
cis-1,3-Dichloropropene.....	25	.....
trans-1,3-Dichloropropene.....	25	.....
Methylene chloride.....	50	.....
1,1,2,2-Tetrachloroethane.....	25	.....
Tetrachloroethene.....	25	25
1,1,1-Trichloroethane.....	25	.....
1,1,2-Trichloroethane.....	25	.....
Trichloroethene.....	25	.....
Trichlorofluoromethane.....	25	.....
Vinyl chloride.....	50	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Evergreen Environmental Consulting P.O. Box 17177 Seattle, WA 98107-0877 Attention: John Reese	Client Project ID: 000-9001 Sample Descript: Soil, Comp. 10051005 & 10051010 Analysis Method: EPA 5030/8010 Lab Number: 010-0181	Sampled: Oct 5, 1990 Received: Oct 5, 1990 Analyzed: Oct 16, 1990 Reported: Oct 17, 1990
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HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25	.....
Bromoform.....	25	.....
Bromomethane.....	25	.....
Carbon tetrachloride.....	25	.....
Chlorobenzene.....	25	.....
Chloroethane.....	125	.....
2-Chloroethylvinyl ether.....	25	.....
Chloroform.....	25	.....
Chloromethane.....	25	.....
Dibromochloromethane.....	25	.....
1,2-Dichlorobenzene.....	50	.....
1,3-Dichlorobenzene.....	50	.....
1,4-Dichlorobenzene.....	50	.....
1,1-Dichloroethane.....	25	.....
1,2-Dichloroethane.....	25	.....
1,1-Dichloroethene.....	25	.....
Total 1,2-Dichloroethene.....	25	.....
1,2-Dichloropropane.....	25	.....
cis-1,3-Dichloropropene.....	25	.....
trans-1,3-Dichloropropene.....	25	.....
Methylene chloride.....	50	.....
1,1,2,2-Tetrachloroethane.....	25	.....
Tetrachloroethene.....	25	42
1,1,1-Trichloroethane.....	25	.....
1,1,2-Trichloroethane.....	25	.....
Trichloroethene.....	25	.....
Trichlorofluoromethane.....	25	.....
Vinyl chloride.....	50	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Laboratory Director



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Evergreen Environmental Consulting	Client Project ID:	000-9001	Sampled:	Oct 5, 1990
P.O. Box 17177	Sample Descript:	Soil, 10051100	Received:	Oct 5, 1990
Seattle, WA 98107-0877	Analysis Method:	EPA 5030/8010	Analyzed:	Oct 16, 1990
Attention: John Reese	Lab Number:	010-0182	Reported:	Oct 17, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25	.....
Bromoform.....	25	.....
Bromomethane.....	25	.....
Carbon tetrachloride.....	25	.....
Chlorobenzene.....	25	.....
Chloroethane.....	125	.....
2-Chloroethylvinyl ether.....	25	.....
Chloroform.....	25	.....
Chloromethane.....	25	.....
Dibromochloromethane.....	25	.....
1,2-Dichlorobenzene.....	50	.....
1,3-Dichlorobenzene.....	50	.....
1,4-Dichlorobenzene.....	50	.....
1,1-Dichloroethane.....	25	.....
1,2-Dichloroethane.....	25	.....
1,1-Dichloroethene.....	25	.....
Total 1,2-Dichloroethene.....	25	.....
1,2-Dichloropropane.....	25	.....
cis-1,3-Dichloropropene.....	25	.....
trans-1,3-Dichloropropene.....	25	.....
Methylene chloride.....	50	.....
1,1,2,2-Tetrachloroethane.....	25	.....
Tetrachloroethylene.....	25	48
1,1,1-Trichloroethane.....	25	.....
1,1,2-Trichloroethane.....	25	.....
Trichloroethene.....	25	.....
Trichlorofluoromethane.....	25	.....
Vinyl chloride.....	50	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Evergreen Environmental Consultin	Client Project ID:	000-9001	Sampled:	Oct 5, 1990
P.O. Box 17177	Sample Descript:	Soil, 10051105	Received:	Oct 5, 1990
Seattle, WA 98107-0877	Analysis Method:	EPA 5030/8010	Analyzed:	Oct 16, 1990
Attention: John Reese	Lab Number:	010-0183	Reported:	Oct 17, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25	.....
Bromoform.....	25	.....
Bromomethane.....	25	.....
Carbon tetrachloride.....	25	.....
Chlorobenzene.....	25	.....
Chloroethane.....	125	.....
2-Chloroethylvinyl ether.....	25	.....
Chloroform.....	25	.....
Chloromethane.....	25	.....
Dibromochloromethane.....	25	.....
1,2-Dichlorobenzene.....	50	.....
1,3-Dichlorobenzene.....	50	.....
1,4-Dichlorobenzene.....	50	.....
1,1-Dichloroethane.....	25	.....
1,2-Dichloroethane.....	25	.....
1,1-Dichloroethene.....	25	.....
Total 1,2-Dichloroethene.....	25	.....
1,2-Dichloropropane.....	25	.....
cis-1,3-Dichloropropene.....	25	.....
trans-1,3-Dichloropropene.....	25	.....
Methylene chloride.....	50	.....
1,1,2,2-Tetrachloroethane.....	25	.....
Tetrachloroethylene.....	25	41
1,1,1-Trichloroethane.....	25	.....
1,1,2-Trichloroethane.....	25	.....
Trichloroethene.....	25	.....
Trichlorofluoromethane.....	25	.....
Vinyl chloride.....	50	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Laboratory Director



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Evergreen Environmental Consulting	Client Project ID:	000-9001	Sampled:	Oct 5, 1990
P.O. Box 17177	Sample Descript:	Soil, 10051200	Received:	Oct 5, 1990
Seattle, WA 98107-0877	Analysis Method:	EPA 5030/8010	Analyzed:	Oct 16, 1990
Attention: John Reese	Lab Number:	010-0184	Reported:	Oct 17, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25	.....
Bromoform.....	25	.....
Bromomethane.....	25	.....
Carbon tetrachloride.....	25	.....
Chlorobenzene.....	25	.....
Chloroethane.....	125	.....
2-Chloroethylvinyl ether.....	25	.....
Chloroform.....	25	.....
Chloromethane.....	25	.....
Dibromochloromethane.....	25	.....
1,2-Dichlorobenzene.....	50	.....
1,3-Dichlorobenzene.....	50	.....
1,4-Dichlorobenzene.....	50	.....
1,1-Dichloroethane.....	25	.....
1,2-Dichloroethane.....	25	.....
1,1-Dichloroethene.....	25	.....
Total 1,2-Dichloroethene.....	25	.....
1,2-Dichloropropane.....	25	.....
cis-1,3-Dichloropropene.....	25	.....
trans-1,3-Dichloropropene.....	25	.....
Methylene chloride.....	50	.....
1,1,2,2-Tetrachloroethane.....	25	.....
Tetrachloroethylene.....	25	350
1,1,1-Trichloroethane.....	25	.....
1,1,2-Trichloroethane.....	25	.....
Trichloroethene.....	25	.....
Trichlorofluoromethane.....	25	.....
Vinyl chloride.....	50	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised*

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Laboratory Director

10/10/90
350 ppb



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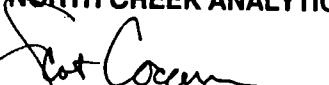
Evergreen Environmental Consulting	Client Project ID:	000-9001	Sampled:	Oct 5, 1990
P.O. Box 17177	Sample Descript:	Soil, 10051210	Received:	Oct 5, 1990
Seattle, WA 98107-0877	Analysis Method:	EPA 5030/8010	Analyzed:	Oct 16, 1990
Attention: John Reese	Lab Number:	010-0185	Reported:	Oct 17, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25	.....
Bromoform.....	25	.....
Bromomethane.....	25	.....
Carbon tetrachloride.....	25	.....
Chlorobenzene.....	25	.....
Chloroethane.....	125	.....
2-Chloroethylvinyl ether.....	25	.....
Chloroform.....	25	.....
Chloromethane.....	25	.....
Dibromochloromethane.....	25	.....
1,2-Dichlorobenzene.....	50	.....
1,3-Dichlorobenzene.....	50	.....
1,4-Dichlorobenzene.....	50	.....
1,1-Dichloroethane.....	25	.....
1,2-Dichloroethane.....	25	.....
1,1-Dichloroethene.....	25	.....
Total 1,2-Dichloroethene.....	25	.....
1,2-Dichloropropane.....	25	.....
cis-1,3-Dichloropropene.....	25	.....
trans-1,3-Dichloropropene.....	25	.....
Methylene chloride.....	50	.....
1,1,2,2-Tetrachloroethane.....	25	.....
Tetrachloroethene.....	25	150
1,1,1-Trichloroethane.....	25	.....
1,1,2-Trichloroethane.....	25	.....
Trichloroethene.....	25	.....
Trichlorofluoromethane.....	25	.....
Vinyl chloride.....	50	.....

Analyses reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Laboratory Director



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Evergreen Environmental Consulting P.O. Box 17177 Seattle, WA 98107-0877 Attention: John Reese	Client Project ID: 000-9001 Sample Descript: Soil, 10051220 Analysis Method: EPA 5030/8010 Lab Number: 010-0186	Sampled: Oct 5, 1990 Received: Oct 5, 1990 Analyzed: Oct 16, 1990 Reported: Oct 17, 1990
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HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25	.....
Bromoform.....	25	.....
Bromomethane.....	25	.....
Carbon tetrachloride.....	25	.....
Chlorobenzene.....	25	.....
Chloroethane.....	125	.....
2-Chloroethylvinyl ether.....	25	.....
Chloroform.....	25	.....
Chloromethane.....	25	.....
Dibromochloromethane.....	25	.....
1,2-Dichlorobenzene.....	50	.....
1,3-Dichlorobenzene.....	50	.....
1,4-Dichlorobenzene.....	50	.....
1,1-Dichloroethane.....	25	.....
1,2-Dichloroethane.....	25	.....
1,1-Dichloroethene.....	25	.....
Total 1,2-Dichloroethene.....	25	.....
1,2-Dichloropropane.....	25	.....
cis-1,3-Dichloropropene.....	25	.....
trans-1,3-Dichloropropene.....	25	.....
Methylene chloride.....	50	.....
1,1,2,2-Tetrachloroethane.....	25	.....
Trichloroethene.....	25	350
1,1,1-Trichloroethane.....	25	.....
1,1,2-Trichloroethane.....	25	.....
Trichloroethene.....	25	.....
Trichlorofluoromethane.....	25	.....
Vinyl chloride.....	50	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Scot Cocanour
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Evergreen Environmental Consulting	Client Project ID:	000-9001	Sampled:	Oct 5, 1990
P.O. Box 17177	Sample Descript:	Soil, 10051240	Received:	Oct 5, 1990
Seattle, WA 98107-0877	Analysis Method:	EPA 5030/8010	Analyzed:	Oct 16, 1990
Attention: John Reese	Lab Number:	010-0187	Reported:	Oct 17, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	25	.....
Bromoform.....	25	.....
Bromomethane.....	25	.....
Carbon tetrachloride.....	25	.....
Chlorobenzene.....	25	.....
Chloroethane.....	125	.....
2-Chloroethylvinyl ether.....	25	.....
Chloroform.....	25	.....
Chloromethane.....	25	.....
Dibromochloromethane.....	25	.....
1,2-Dichlorobenzene.....	50	.....
1,3-Dichlorobenzene.....	50	.....
1,4-Dichlorobenzene.....	50	.....
1,1-Dichloroethane.....	25	.....
1,2-Dichloroethane.....	25	.....
1,1-Dichloroethene.....	25	.....
Total 1,2-Dichloroethene.....	25	.....
1,2-Dichloropropane.....	25	.....
cis-1,3-Dichloropropene.....	25	.....
trans-1,3-Dichloropropene.....	25	.....
Methylene chloride.....	50	.....
1,1,2,2-Tetrachloroethane.....	25	.....
Tetrachloroethene.....	25	36
1,1,1-Trichloroethane.....	25	.....
1,1,2-Trichloroethane.....	25	.....
Trichloroethene.....	25	.....
Trichlorofluoromethane.....	25	.....
Vinyl chloride.....	50	.....

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Laboratory Director