April 19, 2011

ECI Project No. 0402-01

W&R Properties, LLC
C/O JSH Properties,
14900 Interurban Ave South, Ste. 130
Tukwilla, Washington 98168

Re: **Focused Subsurface Investigation**
705 7th Street, Renton, Washington

Mr. Stansfield:

EconCon, Inc., (Environmental Management Services, LLC (EMS) is now ECI), per your request, completed a Focused Subsurface Investigation project at 705 7th Street, Renton, Washington (the "Subject Property"; Figures 1 and 2) on March 24, 2011.

ECI understands that the Subject Property is currently occupied by AIM Aerospace, Inc. (AIM), an aircraft products manufacturer, and is listed as a Large Quantity Generator (LQG) of Hazardous Waste (Resource Conservation & Recovery Act (RCRA) Generator Identification Number WAD060030657).

The scope of this investigation was to ascertain if contaminants consistent with solvents used on the property by AIM, are present in the soil and groundwater underlying the Subject Property. The investigation included the collection and analysis of soil and groundwater from within the property boundary and along the western adjacent rail road spur, at locations cross-gradient and down-gradient in the inferred direction of shallow groundwater flow along the property boundaries. Specifically, samples were obtained from along the western and southern property boundaries, in a storage area on the southern end of the property and along the railroad spur on the western property boundary. Potential contaminants of concern (COCs) for this project are volatile organic compounds (VOCs), as identified in LQG RCRA waste disposal reports on file with the Washington State Department of Ecology (Ecology). This assessment was not intended to delineate the extent of any impacted media identified.

The project scope included the following:

- Underground utility location;
- Preparation of site specific health and safety plan;
- Installation of borings to the groundwater interface;
- Collection and analysis of soil and groundwater samples;
- Preparation of Letter Report documenting site activities, observations, analytical results, and their comparison to applicable Washington State regulatory guidelines.

Subsurface Investigation

ECI mobilized to the site with the drilling subcontractor ESN, Inc. on March 24, 2011. The site specific Health and Safety Plan (HASP) was discussed with field personnel and project specific hazards identified (e.g. chemicals of concern, utility hazards, etc.). ECI selected six boring locations, two along the southern property boundary and four along the western rail road spur adjacent to the western property boundary. These boring locations were selected based on the inferred direction of shallow groundwater flow, following a review of United States Geopolitical Survey (USGS) Topographic Maps, and the locations of the Black River, a tributary of the Green River, as well as the Green River, located west and southwest of the Subject Property. Prior to sampling activities, each boring location was cleared for underground utilities by Mt. View Utility Locating using standard utility location techniques.

Soil and Groundwater Sampling Activities

Using direct push drilling techniques, soil cores were extracted from each soil boring using a two inch diameter by four foot long stainless steel Macro sampler, lined with a disposable acetate liner. Following extraction, each core was examined for field evidence of contaminants (e.g. odor, staining, production of sheen when placed in tap water, etc.).

Soil samples were collected at 5 to 6 feet below ground surface (bgs) from borings B1, B2 and B6 and from 6 to 7 feet bgs from borings B3, B4 & and B5. Soil samples were obtained at the soil / groundwater interface in each boring. Boring locations B1 and B2 were surfaced with asphalt, the remainder of the borings were within gravel. Subsurface soil conditions were similar in all six borings. Gravel fill was observed extending to between six and twelve inches bgs. Gray, dry to moist, medium to fine silty sand intermixed with rounded and angular gravels extended from approximately 12 inches to eight feet bgs, the vertical extent of each boring.

Soil and groundwater samples were collected by a properly trained environmental professional using industry standard sampling techniques. Soil was extracted from each sample core using EPA sampling method 5035, and placed into two laboratory provided 40 milliliter sample containers and one 4 ounce wide mouth sample jar. Each sample was assigned a unique sample identifying number and placed in a climate controlled container maintained at 4º Celsius.

Following soil sampling activities, each boring was converted into a temporary groundwater monitoring well using a properly decontaminated one inch .010 inch slot stainless steel well screen. Groundwater samples were collected using a peristaltic pump and low-flow sampling techniques, with new disposable tubing and decontaminated sampling equipment at each location. Groundwater elevation was measured at approximately six feet bgs in borings B1, B2, and B6 and approximately seven feet bgs in borings B3, B4 and B5. Groundwater samples were collected into new, laboratory provided 40 milliliter sample collection bottles. Each sample was assigned a unique sample identifying number and placed in a climate controlled container maintained at 4º Celsius for transport to the laboratory.

Sample Analysis

Each soil and groundwater sample was analyzed for volatile organic compounds (VOCs) by EPA method 8260B. Soil samples B1-5', B2-5', B3-6', B4-6' and B5-6' were each reported non-detect, below the laboratory method reporting limit, for all analyzed analytes. Groundwater samples B1-H2O, B2-H2O, B3-H2O, B4-H2O and B5-H2O were each reported non-detect, below the laboratory method reporting limit, for all analyzed analytes.

Soil sample B6-5' and groundwater sample B6-H2O were each reported containing Chlorobenzene at 9.8 milligrams per kilogram (mg/kg) and 6,500 micrograms per liter (µg/L) respectively. Sample B6-H2O was also reported containing Vinyl Chloride at 1.1 µg/L, trans-1-2-Dichloroethane at 1.9 µg/L, and cis-1-2-Dichloroethene at 3.5 µg/L.

Of the analytes identified in soil sample B6-5' and groundwater sample B6-H2O, Vinyl Chloride is the only analyte that has a pre-established cleanup level (CUL) in Washington State. The Washington State Department of Ecology (Ecology) Model Toxics Cleanup Regulation, Chapter 173-340 WAC (MTCA) Method A (MTCA-A) Cleanup Level for Vinyl Chloride in ground water is 0.2 µg/L.

To establish appropriate soil and groundwater CULs for analytes without pre-established CULs, Ecology provides a Cleanup Level and Risk Calculations (CLARC) compendium of technical information related to the calculation of cleanup levels under MTCA. Ecology has compiled and calculated technical information to assist in the development of cleanup levels. User access to technical information in the CLARC Information System is initiated by a chemical specific search engine using either the chemical name or Chemical Abstract Service Registry number (CAS#). Using this process, cleanup levels can be determined.

Chlorobenzene (also known as monochlorobenzene; benzene chloride; benzene monochloride; chlorbenzene; chlorbenzol, phenyl chloride) has been a major industrial chemical for at least the last 50 years. It was historically important in the manufacture of chlorinated pesticides, especially DDT, and in the production of phenol and aniline. Chlorobenzene's principal current use is as a chemical intermediate in the production of chemicals such as nitrochlorobenzenes and diphenyl oxide. These chemicals are subsequently used in the production of herbicides, dyestuffs, and rubber chemicals. Additionally, monochlorobenzene is used as a solvent in degreasing processes (e.g., in metal cleaning operations), paints, adhesives, waxes and polishes.

Conclusions

Chemical analysis of soil and groundwater samples collected from boring B6 identified Chlorobenzene at concentrations indicative of a release.[1] Also identified in sample B6-H2O were lower concentrations of Vinyl Chloride, trans-1-2-Dichloroethane, and cis-1-2-

[1] WAC 173-340-200 **"Release**" means any intentional or unintentional entry of any hazardous substance into the environment, including but not limited to the abandonment or disposal of containers of hazardous substances.

Dichloroethene. The concentration of Vinyl Chloride is reported at 1.1 µg/L, exceeding the pre-establisher MTCA-A CUL of 0.2 µg/L. Calculated CULs from CLARC can be determined for Chloroethane, trans-1-2-Dichloroethane, and cis-1-2-Dichloroethene detected in soil and groundwater samples. The information obtained for this study is insufficient to determine the three dimensional extent of the identified contaminants in soil and groundwater.

Further investigation to delineate the extent of soil and groundwater impacts, and establish specific cleanup levels, is warranted.

We appreciate the opportunity to provide environmental consulting services to you on this project. If you have any questions or comments regarding this submittal please do not hesitate to contact us at (253) 238-9270.

Respectively Submitted,

Stephen Spencer
Principal

Enclosures

Attachment A
- Figure 1 – Site Location Map
- Figure 2 – Site Topographic Map
- Figure 3 – Sample Location Map
- Figure 4 – Project Photographs

Attachment B
- Table 1 – Analytical Results – Soil
- Table 2 – Analytical Results – Groundwater
- MTCA Method A Cleanup Levels – WAC 173-340 Tables 720-1 & 740-1

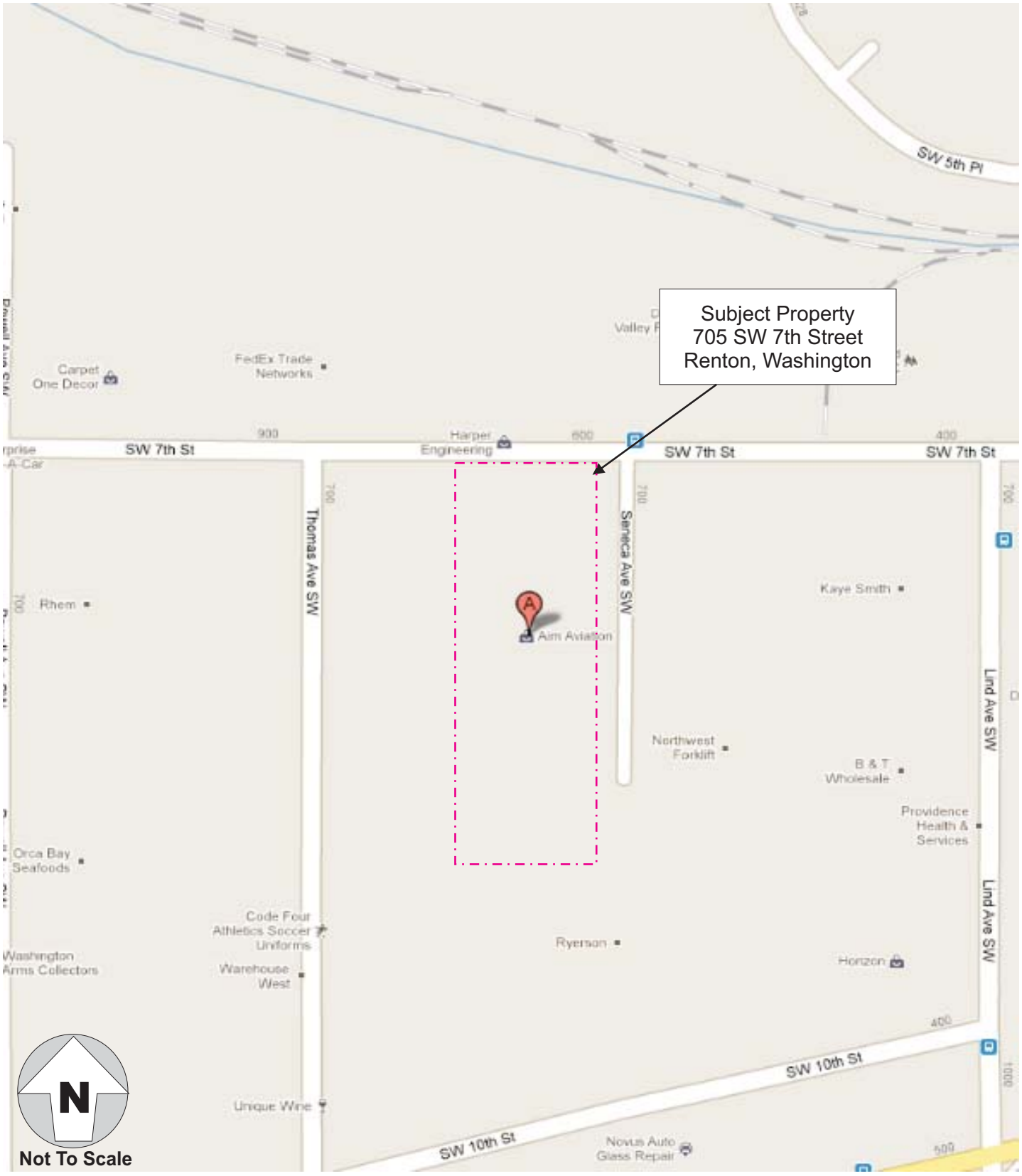
Attachment C
- Boring Logs – 6 Pages

Attachment D
- Laboratory Analytical Results

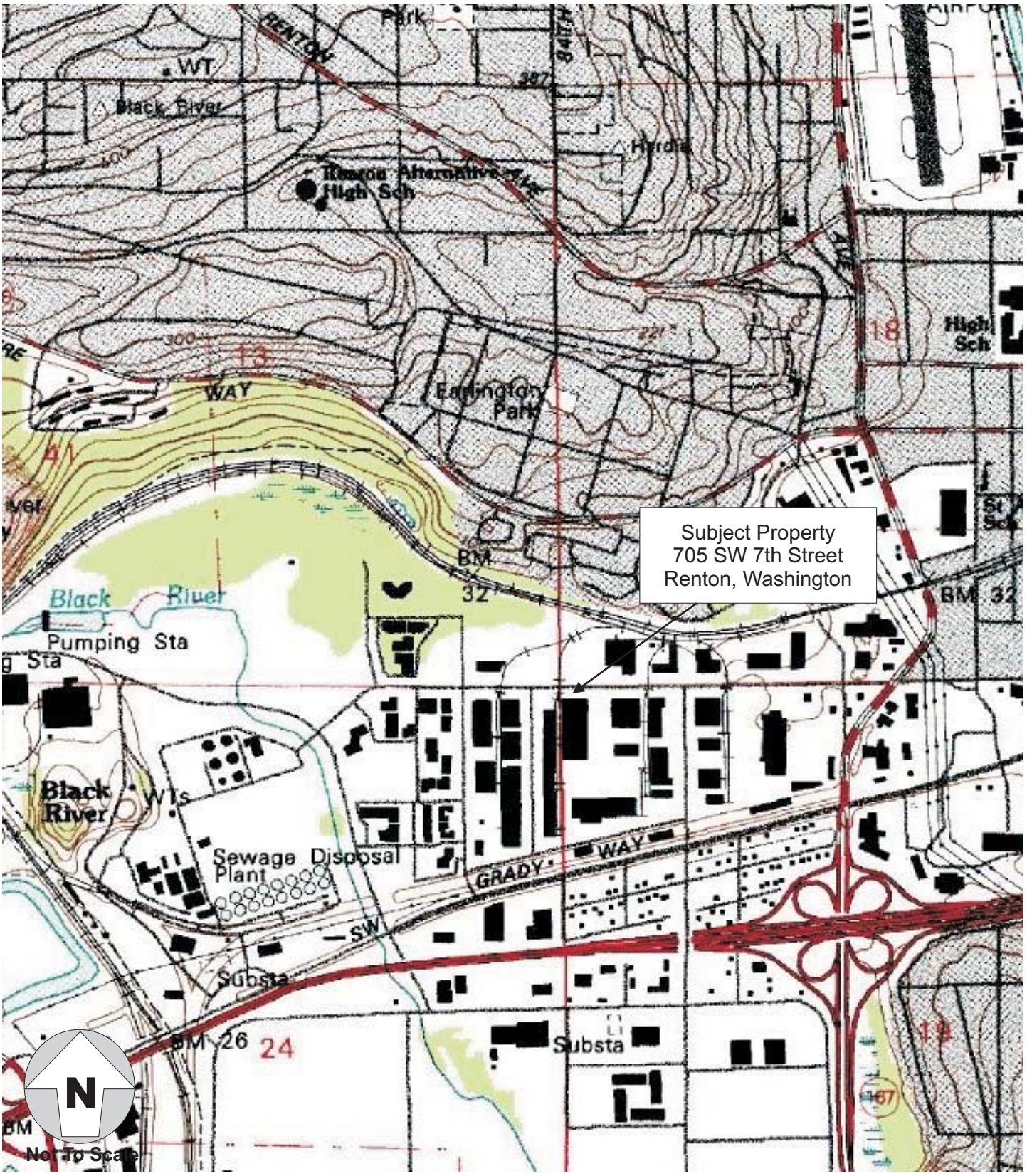
Attachment E
- Professional Qualifications

Attachment A

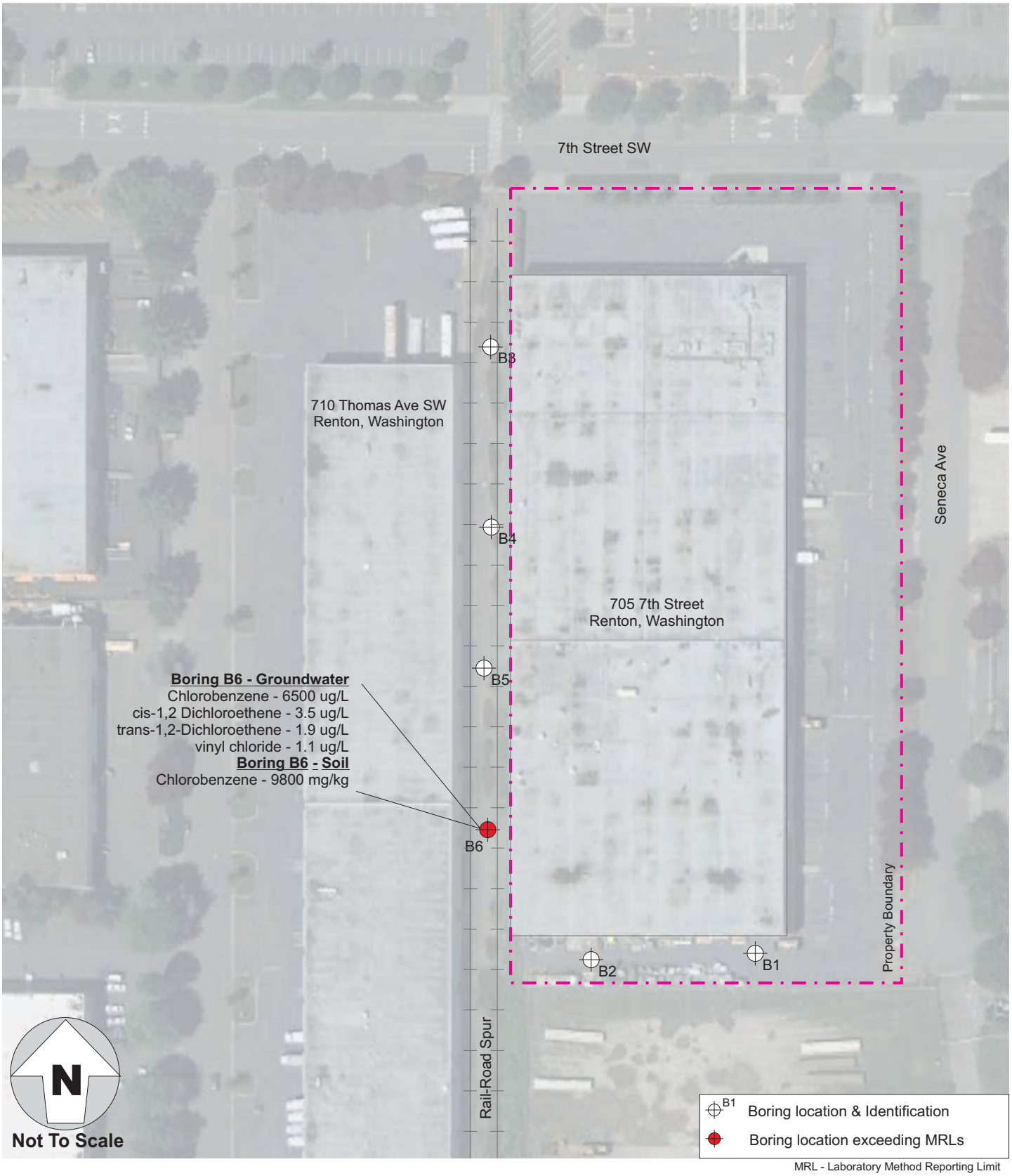
List Of Figures



ecoCON Environmental Services	Site Location Map Focused Subsurface Investigation 705 7th Street Renton, Washington	Date: April 11, 2011 Completed: S. Spencer Checked By: S. Spencer ECI Project No. 0402-01 Version No: 001	Figure No. 01 Sheet 01 of 01



ecoCON Environmental Services	Site Topographic Map Focused Subsurface Investigation 705 7th Street Renton, Washington	Date: April 11, 2011 Completed: S. Spencer Checked By: S. Spencer ECI Project No. 0402-01 Version No: 001	Figure No. 02 Sheet 01 of 01



MRL - Laboratory Method Reporting Limit

ecoCON Environmental Services

Boring Location Map Focused Subsurface Investigation 705 7th Street Renton, Washington	Date:	April 11, 2011	Figure No. 03 Sheet 01 of 01
	Completed:	S. Spencer	
	Checked By:	S. Spencer	
	ECI Project No.	0402-01	
	Version No:	001	

Photo 01 - Boring location B1 - View southwest

Photo 02 - Boring location B2 - View west

Photo 03 - Boring location B3 - View south

Photo 04 - Boring B4 - View south

Photo 05 - Boring location B5 - View south

Photo 06 - Boring location B6 - View south

ecoCON Environmental Services

Project Photographs
Focused Subsurface Investigation
705 7th Street
Renton, Washington

Date:	April 11, 2011
Completed:	S. Spencer
Checked By:	S. Spencer
ECI Project No.	0402-01
Version No:	001

Figure No.
04
Sheet 01 of 01

Attachment B

Project Tables

Table 1 - Soil Sample Analytical Results- Hydrocarbons

Table 2 - Groundwater Sample Analytical Results

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Table 1 - Soil Sample Analysis
Select Volitale Organic Compounds Analysis
705 7th Street SW
Renton, Washington

4/11/2011

Sample Number	Sample Location	Sample Depth	Sample Date	Select Volatile Organic Compounds by EPA Method 8260									
				Vinyl Chloride	Chlorobenzene	1,1-Dichloroethene	Methylene Chloride	trans-1,2-Dichloroethene	*cis* 1,2- Dichloroethene	1,2- Dichloroethane	1,1,1-Trichloroethene	Trichloroethene	Tetrachloroethene
		(feet bgs)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B1-5-6'	Boring 1	5-6' bgs	3/25/2011	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
B2-5-6'	Boring 2	5-6 bgs	3/25/2011	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
B3-5-6'	Boring 3	5-6' bgs	3/25/2011	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
B4-6-7'	Boring 4	6-7' bgs	3/25/2011	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
B5-6-7'	Boring 5	6-7' bgs	3/25/2011	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
B6-5-6'	Boring 6	5'-6' bgs	3/25/2011	<0.05	**9.8**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	Laboratory Method Reporting Limits			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Values are reported in milligrams per kilograms (mg/kg).

< # (ND) = analyte not detected above the analytical method detection limit cited.

bgs=below ground surface

NA=Not Applicable

ECI | environmental services

Table 2 - Groundwater Sample Analysis
Select Volitale Organic Compounds Analysis
705 7th Street SW
Renton, Washington

4/11/2011

Sample Number	Sample Location	Sample Depth	Sample Date	Select Volatile Organic Compounds by EPA Method 8260									
				Vinyl Chloride	Chlorobenzene	1,1-Dichloroethene	Methylene Chloride	trans-1,2-Dichloroethene	*cis* 1,2- Dichloroethene	1,2- Dichloroethane	1,1,1-Trichloroethene	Trichloroethene	Tetrachloroethene
		(bgs)		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
B1-H2O	Boring 1	15 - 20	3/24/2011	<0.2	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B2-H2O	Boring 2	15 - 20	3/24/2011	<0.2	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B3-H2O	Boring 3	15 - 20	3/24/2011	<0.2	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B4-H2O	Boring 4	15 - 20	3/24/2011	<0.2	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B5-H2O	Boring 5	15 - 20	3/24/2011	<0.2	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B6-H2O	Boring 6	15 - 20	3/24/2011	**1.1**	**6500**	<2.0	<1.0	**1.9**	**3.5**	<1.0	<1.0	<1.0	<1.0
Laboratory Method Reporting Limits				<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Values are reported in micrograms per liter (ug/L).

< # (ND) = analyte not detected above the analytical method detection limit cited.

bgs=below ground surface

NA=Not Applicable

Attachment C

Analytical Results

Sample Analytical Results
Sample Chain Of Custody

ESN NORTHWEST, INC. Environmental Services Network

CHAIN-OF-CUSTODY RECORD

CLIENT: EMS

ADDRESS: PO BOX 153 FOX ISLAND, WA 98333

PHONE: 253 921-7059 FAX: 253 3696228

sspencer@emsgroup1lc.com

CLIENT PROJECT #: PROJECT MANAGER: SMS

DATE: 3/24/11 PAGE 1 OF 1

PROJECT NAME: JHL #2

LOCATION: 705 7th ST. KENT

COLLECTOR: SMS/KAS DATE OF COLLECTION 3/24

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: TPH-HCID	TPH - DIESEL & OIL	TPH - GASOLINE	BTEX	VOC 8260/CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos-PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Laboratory Note Number
1. B1-5'	5		Soil	VOA					X															
2. B1-H20	5		H20	VOA					X															
3. B2-H20	5		~~H20~~	VOA					X															
4. B2-5'	5		Soil	VOA					X															
5. B3-6'	6		Soil	VOA					X															
6. B3-H20	6		H20	VOA					X															
7. B4-7'	7	Soil	~~H20~~	VOA					X															
8. B4-H20	7		H20	VOA					X															
9. B5-7'	7		Soil	VOA					X															
10. B5-H20	7		H20	VOA					X															
11. B6-5	5		Soil	VOA					X															
12. B6-H20	5		H20	VOA					X															
13.																								
14.																								
15.																								
16.																								
17.																								
18.																								

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
	3/24/11	[signature]	3/24/11 1200
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ ESN DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Turn Around Time: 24 HR 48 HR (5 DAY)

ESN NORTHWEST CHEMISTRY LABORATORY

EMS
JHL #2 PROJECT
Kent, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Water by Method 8260

Analytical Results

8260B Chlorinated, µg/L		MTH BLK	LCS	LCSD	B1-H2O	B2-H2O	B3-H2O	B4-H2O	B5-H2O	B6-H2O
Matrix	Reporting	Water	Water	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Limits	03/30/11	03/30/11	03/30/11	03/30/11	03/30/11	03/30/11	03/30/11	03/30/11	03/30/11
Dichlorodifluoromethane	1.0	nd			nd	nd	nd	nd	nd	nd
Chloromethane	1.0	nd			nd	nd	nd	nd	nd	nd
Vinyl chloride	0.2	nd	71%	73%	nd	nd	nd	nd	nd	**1.1**
Chloroethane	1.0	nd			nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	1.0	nd			nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	1.0	nd	90%	97%	nd	nd	nd	nd	nd	nd
Methylene chloride	1.0	nd			nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd			nd	nd	nd	nd	nd	**1.9**
1,1-Dichloroethane	1.0	nd			nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd			nd	nd	nd	nd	nd	**3.5**
2,2-Dichloropropane	1.0	nd			nd	nd	nd	nd	nd	nd
Chloroform	1.0	nd	124%	125%	nd	nd	nd	nd	nd	nd
Bromochloromethane	1.0	nd			nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd			nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd			nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd			nd	nd	nd	nd	nd	nd
Carbon tetrachloride	1.0	nd			nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	1.0	nd	122%	125%	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	1.0	nd			nd	nd	nd	nd	nd	nd
Bromodichloromethane	1.0	nd			nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd			nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	1.0	nd			nd	nd	nd	nd	nd	nd
Dibromochloromethane	1.0	nd			nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	110%	90%	nd	nd	nd	nd	nd	nd
Chlorobenzene	1.0	nd	110%	95%	nd	nd	nd	nd	nd	**6,500**
1,1,1,2-Tetrachloroethane	1.0	nd			nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd			nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd			nd	nd	nd	nd	nd	nd
2-Chlorotoluene	1.0	nd			nd	nd	nd	nd	nd	nd
4-Chlorotoluene	1.0	nd			nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd			nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd			nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd			nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd			nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd			nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd			nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd			nd	nd	nd	nd	nd	nd
Surrogate recoveries										
Dibromofluoromethane		90%	96%	99%	97%	102%	99%	113%	101%	107%
Toluene-d8		90%	85%	83%	93%	94%	88%	92%	85%	86%
4-Bromofluorobenzene		112%	101%	93%	93%	106%	123%	101%	132%	105%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN NORTHWEST CHEMISTRY LABORATORY

EMS
JHL #2 PROJECT
Kent, Washington

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1210 Eastside Street SE Suite 200
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(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260

Analytical Results

8260B Chlorinated, µg/kg		**MTH BLK**	**LCS**	**LCSD**	**B1-5'**	**B2-5'**	**B3-6'**	**B4-7'**
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/25/11	03/25/11	03/25/11	03/25/11	03/25/11	03/25/11	03/25/11
Date analyzed	Limits	03/29/11	03/29/11	03/29/11	03/29/11	03/29/11	03/29/11	03/29/11
Dichlorodifluoromethane	50	nd			nd	nd	nd	nd
Chloromethane	50	nd			nd	nd	nd	nd
Vinyl chloride	50	nd			nd	nd	nd	nd
Chloroethane	50	nd			nd	nd	nd	nd
Trichlorofluoromethane	50	nd			nd	nd	nd	nd
1,1-Dichloroethene	50	nd	129%	138%	nd	nd	nd	nd
Methylene chloride	20	nd			nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd			nd	nd	nd	nd
1,1-Dichloroethane	50	nd			nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd			nd	nd	nd	nd
2,2-Dichloropropane	50	nd			nd	nd	nd	nd
Chloroform	50	nd			nd	nd	nd	nd
Bromochloromethane	50	nd			nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd			nd	nd	nd	nd
1,2-Dichloroethane (EDC)	50	nd			nd	nd	nd	nd
1,1-Dichloropropene	50	nd			nd	nd	nd	nd
Carbon tetrachloride	50	nd			nd	nd	nd	nd
Trichloroethene (TCE)	20	nd	107%	109%	nd	nd	nd	nd
1,2-Dichloropropane	50	nd			nd	nd	nd	nd
Bromodichloromethane	50	nd			nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd			nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd			nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd			nd	nd	nd	nd
1,3-Dichloropropane	50	nd			nd	nd	nd	nd
Dibromochloromethane	50	nd			nd	nd	nd	nd
Tetrachloroethene (PCE)	20	nd			nd	nd	nd	nd
Chlorobenzene	50	nd	109%	113%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd			nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd			nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd			nd	nd	nd	nd
2-Chlorotoluene	50	nd			nd	nd	nd	nd
4-Chlorotoluene	50	nd			nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd			nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd			nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd			nd	nd	nd	nd
1,2-Dibromo-3-Chloropropan	50	nd			nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd			nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd			nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd			nd	nd	nd	nd
Surrogate recoveries								
Dibromofluoromethane		104%	102%	100%	102%	101%	99%	110%
Toluene-d8		111%	104%	105%	110%	107%	109%	109%
4-Bromofluorobenzene		101%	94%	96%	106%	104%	102%	103%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN NORTHWEST CHEMISTRY LABORATORY

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Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260

Analytical Results

8260B Chlorinated, µg/kg		**B5-7'**	**B6-5'**
Matrix		Soil	Soil
Date extracted	Reporting	03/25/11	03/25/11
Date analyzed	Limits	03/29/11	03/29/11
Dichlorodifluoromethane	50	nd	nd
Chloromethane	50	nd	nd
Vinyl chloride	50	nd	nd
Chloroethane	50	nd	nd
Trichlorofluoromethane	50	nd	nd
1,1-Dichloroethene	50	nd	nd
Methylene chloride	20	nd	nd
trans-1,2-Dichloroethene	50	nd	nd
1,1-Dichloroethane	50	nd	nd
cis-1,2-Dichloroethene	50	nd	nd
2,2-Dichloropropane	50	nd	nd
Chloroform	50	nd	nd
Bromochloromethane	50	nd	nd
1,1,1-Trichloroethane	50	nd	nd
1,2-Dichloroethane (EDC)	50	nd	nd
1,1-Dichloropropene	50	nd	nd
Carbon tetrachloride	50	nd	nd
Trichloroethene (TCE)	20	nd	nd
1,2-Dichloropropane	50	nd	nd
Bromodichloromethane	50	nd	nd
cis-1,3-Dichloropropene	50	nd	nd
trans-1,3-Dichloropropene	50	nd	nd
1,1,2-Trichloroethane	50	nd	nd
1,3-Dichloropropane	50	nd	nd
Dibromochloromethane	50	nd	nd
Tetrachloroethene (PCE)	20	nd	nd
Chlorobenzene	50	nd	**9,800**
1,1,1,2-Tetrachloroethane	50	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd
1,2,3-Trichloropropane	50	nd	nd
2-Chlorotoluene	50	nd	nd
4-Chlorotoluene	50	nd	nd
1,3-Dichlorobenzene	50	nd	nd
1,4-Dichlorobenzene	50	nd	nd
1,2-Dichlorobenzene	50	nd	nd
1,2-Dibromo-3-Chloropropan	50	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd

Surrogate recoveries		
Dibromofluoromethane	110%	110%
Toluene-d8	108%	109%
4-Bromofluorobenzene	102%	103%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

CHRONIC TOXICITY SUMMARY

CHLOROBENZENE

(monochlorobenzene; benzene chloride; benzene monochloride; chlorbenzene; chlorbenzol; phenyl chloride)

CAS Registry Number: 108-90-7

I. Chronic Toxicity Summary

Inhalation reference exposure level	**1000** mg/m^3 (300 ppb)
Critical effect(s)	Increased liver weights, hepatocellular hypertrophy, renal degeneration and inflammation, and testicular degeneration in rats
Hazard index target(s)	Alimentary system; kidney; reproductive system

II. Physical and Chemical Properties Summary (HSDB, 1995; CRC, 1994)

Description	Colorless, neutral liquid
Molecular formula	C_6H_5Cl
Molecular weight	112.56 g/mol
Boiling point	132°C
Melting point	–45.2°C
Vapor pressure	11.8 torr at 25°C
Solubility	Practically insoluble in water (0.049 g/100 ml); soluble in alcohol, benzene, chloroform, diethyl ether
Conversion factor	1 ppm = 4.60 mg/m^3 at 25 °C

III. Major Uses and Sources

As one of the most widely used chlorinated benzenes, mono-chlorobenzene has been a major chemical for at least 50 years. It was historically important in the manufacture of chlorinated pesticides, especially DDT, and in the production of phenol and aniline. Monochlorobenzene's principal current use is as a chemical intermediate in the production of chemicals such as nitrochlorobenzenes and diphenyl oxide. These chemicals are subsequently used in the production of herbicides, dyestuffs, and rubber chemicals. Additionally, monochlorobenzene is used as a solvent in degreasing processes (e.g., in metal cleaning operations), paints, adhesives, waxes and polishes (HSDB, 1995; NIOSH, 1993). The annual statewide industrial emissions from facilities reporting under the Air Toxics Hot Spots Act in California based on the most recent inventory were estimated to be 29,451 pounds of chlorobenzene (CARB, 2000).

IV. Effects of Human Exposure

Even though monochlorobenzene has been used industrially for many years, few epidemiologic and/or occupational studies have addressed the potential health status of workers chronically exposed to monochlorobenzene (NIOSH, 1993). A Russian occupational study (Rozenbaum *et al.*, 1947, as reported by the U.S. EPA, 1988) describes multiple central nervous system effects, including headache, numbness, dizziness, cyanosis, hyperesthesia, and muscle spasms, after intermittent exposure over 2 years to monochlorobenzene in a mixed chemical environment. No specific exposure levels or histopathologic data were reported.

Two small studies utilizing volunteers exposed to single doses of monochlorobenzene have reported central nervous system effects (Ogata *et al.*, 1991; Tarkhova, 1965). An exposure chamber study of five volunteers exposed up to 60 ppm monochlorobenzene (276 mg/m^3) for a single 7 hour exposure described acute subjective symptoms such as drowsiness, headache, eye irritation, and sore throat (Ogata *et al.*, 1991). One other human volunteer study described altered electrical activity of the cerebral cortex in four individuals exposed to 43.4 ppm monochlorobenzene vapors for 2.5 minutes (Tarkhova, 1965).

V. Effects of Animal Exposure

No chronic inhalation studies have evaluated the toxicity of monochlorobenzene. Only a single, oral chronic carcinogenicity study (NTP, 1985) has evaluated the long-term adverse affects of monochlorobenzene administration. However, a few subchronic inhalation studies have demonstrated adverse effects on the liver, the kidney, and, to a lesser extent, blood parameters following monochlorobenzene exposure over a period of weeks or months (Dilley, 1977; John *et al.*, 1984; Nair *et al.*, 1987).

One subchronic study evaluated Sprague-Dawley male rats and rabbits exposed to 0, 75, or 200 ppm of monochlorobenzene for 7 hr/day, 5 days/week, for up to 24 weeks (Dilley, 1977). In rats, monochlorobenzene-related toxicity included increased absolute and relative (to brain- or body-weight) organ weights (especially the liver) after 11 and 24 weeks of exposure (LOAEL 75 ppm). Male rabbits also demonstrated increases in liver weight after 24 weeks of exposure (LOAEL = 75 ppm). Some hematological changes were reported in rats including differences in platelet and reticulocyte counts between control and exposed animals; however, some changes observed at 11 weeks were variable and comparable to controls at 24 weeks (red blood cell count, hemoglobin, hematocrit, and white blood cell count). Pathological changes were observed in rats, with occasional focal lesions in the adrenal cortex, tubular lesions in the kidneys, and congestion in the liver and kidneys.

Two other subchronic inhalation studies reported adverse organ effects following monochlorobenzene exposure in rats and rabbits (John *et al.*, 1984; Nair *et al.*, 1987). In the first study, John *et al.* (1984) reported increased liver weights in rats and rabbits following short-term (10 or 13 day, 6 hours/day) monochlorobenzene exposure (LOAEL = 590 ppm in rats and 210 ppm in rabbits). Nair *et al.* (1987) exposed male and female Sprague-Dawley rats to 0, 50, 150, or 450 ppm monochlorobenzene vapors daily for 6 hours over 10-11 weeks prior to mating, and

up to day 20 of gestation for 2 generations. Nair *et al*. found dose-related changes in the livers, kidneys, and testes in both generations of males (F_0 and F_1). Hepatotoxicity occurred as hepatocellular hypertrophy and increased liver weights (mean and absolute) at concentrations greater than 50 ppm (LOAEL = 150 ppm). At this concentration (150 ppm), renal changes included tubular dilation, interstitial nephritis, and foci of regenerative epithelium. Testicular degeneration of the germinal epithelium occurred in both generations of exposed males, but no chlorobenzene-induced adverse effects on reproductive performance or fertility were seen.

VI. Derivation of Chronic Reference Exposure Level (REL)

Study	Nair *et al.* (1987)
Study population	Sprague-Dawley rats (30/sex/group)
Exposure method	Discontinuous inhalation exposures (0, 50, 150, and 450 ppm)
Critical Effects	Increases in absolute and relative liver weights (F_0 and F_1 both sexes), hepatocellular hypertrophy (F_0 and F_1 males), renal degeneration and inflammation (F_0 and F_1 both sexes), testicular degeneration (F_0 and F_1 males).
LOAEL	150 ppm
NOAEL	50 ppm
Exposure continuity	6 hours/day, 7 days/week
Exposure duration	11 weeks
Average experimental exposure	13 ppm for NOAEL group (50 x 6/24)
Human equivalent concentration	26 ppm (gas with systemic effects, based on RGDR = 2.0 for lambda (a) : lambda (h)) (Gargas *et al*., 1989)
LOAEL uncertainty factor	1
Subchronic uncertainty factor	3
Interspecies uncertainty factor	3
Intraspecies uncertainty factor	10
Cumulative uncertainty factor	100
Inhalation reference exposure level	0.3 ppm (300 ppb; 1.0 mg/m^3, 1000 µg/m^3)

Of the three inhalation studies available (Dilley, 1977; John *et al.*, 1984; Nair *et al.*, 1987), the Nair *et al.* (1987) two generational developmental study was selected for identifying a NOAEL and LOAEL. It best presented the histopathology of the adverse effects, and demonstrated a dose response relationship for these effects (statistically significant increases in mean liver weights, incidence of renal changes, and testicular degeneration).

Another subchronic inhalation study (Dilley, 1977) also observed increases in organ weights, including the liver, in rats after 11 and 24 weeks exposure to 75 and 250 ppm monochlorobenzene (LOAEL = 75 ppm), and in rabbits at 24 weeks. Similar adverse liver and kidney effects were found in subchronic oral bioassays (Kluwe *et al.*, 1985; NTP, 1985). These

include increases in liver weight and hepatocellular degeneration in rats (LOAEL = 125 mg/kg/day) and mice (LOAEL = 250 mg/kg/day), and renal necrosis and degeneration in rats (LOAEL = 500 mg/kg/day) and mice (LOAEL = 250 mg/kg/day) after 13 weeks oral exposure to chlorobenzene.

Uncertainty factors are appropriate due to the lack of chronic studies, both animal bioassay and human, and the limited number of subchronic inhalation studies, thereby requiring estimation of the chronic REL from this shorter term, single species study. The magnitude of interspecies variation remains unknown, as few species have been tested and human data for comparison are lacking. However, metabolic studies have demonstrated species variation in the urinary elimination of chlorobenzene metabolites (Ogata and Shimada 1983; Ogata *et al.*, 1991; Yoshida *et al.*, 1986). Humans metabolize and excrete chlorobenzene predominately as free and conjugated forms of 4-chlorocatechol and chlorophenols, while the main rodent urinary metabolite, p-chlorophenylmercapturic acid, is found in minor amounts (<0.5%). No information exists which identifies human subpopulations possibly susceptible to monochlorobenzene exposure.

For comparison with the proposed REL, a REL can be derived from the 24 week LOAEL of 75 ppm for liver effects (Dilley, 1977). The LOAEL is equivalent to a continuous exposure LOAEL of 15.6 ppm. Multiplying by the RGDR of 2 and dividing by a cumulative UF of 100 (3 for LOAEL, 3 for interspecies and 10 for intraspecies) also yields an estimate of 300 ppb.

VII. Data Strengths and Limitations for Development of the REL

The strengths of the inhalation REL for chlorobenzene include the observation of a NOAEL, the availability of subchronic inhalation exposure data from a well-conducted study with histopathological analysis, and the demonstration of a dose-response relationship. Major areas of uncertainty are the lack of adequate human exposure data and limited reproductive toxicity data.

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Table 720-1
Method A Cleanup Levels for Ground Water.[a]

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	5 ug/liter[b]
Benzene	71-43-2	5 ug/liter[c]
Benzo(a)pyrene	50-32-8	0.1 ug/liter[d]
Cadmium	7440-43-9	5 ug/liter[e]
Chromium (Total)	7440-47-3	50 ug/liter[f]
DDT	50-29-3	0.3 ug/liter[g]
1,2 Dichloroethane (EDC)	107-06-2	5 ug/liter[h]
Ethylbenzene	100-41-4	700 ug/liter[i]
Ethylene dibromide (EDB)	106-93-4	0.01 ug/liter[j]
Gross Alpha Particle Activity		15 pCi/liter[k]
Gross Beta Particle Activity		4 mrem/yr[l]
Lead	7439-92-1	15 ug/liter[m]
Lindane	58-89-9	0.2 ug/liter[n]
Methylene chloride	75-09-2	5 ug/liter[o]
Mercury	7439-97-6	2 ug/liter[p]
MTBE	1634-04-4	20 ug/liter[q]
Naphthalenes	91-20-3	160 ug/liter[r]
PAHs (carcinogenic)		See benzo(a)pyrene[d]
PCB mixtures		0.1 ug/liter[s]
Radium 226 and 228		5 pCi/liter[t]
Radium 226		3 pCi/liter[u]
Tetrachloroethylene	127-18-4	5 ug/liter[v]
Toluene	108-88-3	1,000 ug/liter[w]
Total Petroleum Hydrocarbons[x]		
[Note: Must also test for and meet cleanup levels for other petroleum components--see footnotes!]		
Gasoline Range Organics		
Benzene present in ground water		800 ug/liter
No detectable benzene in ground water		1,000 ug/liter
Diesel Range Organics		500 ug/liter
Heavy Oils		500 ug/liter
Mineral Oil		500 ug/liter
1,1,1 Trichloroethane	71-55-6	200 ug/liter[y]
Trichloroethylene	79-01-6	5 ug/liter[z]
Vinyl chloride	75-01-4	0.2 ug/liter[aa]
Xylenes	1330-20-7	1,000 ug/liter[bb]

Footnotes:

a **Caution on misusing this table.** This table has been developed for specific purposes. It is intended to provide conservative cleanup levels for drinking water beneficial uses at sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. This table may not be appropriate for defining cleanup levels at other sites. For these reasons, the values in this table should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceedances of the values in this table do not necessarily mean the ground water must be restored to those levels at all sites. The level of restoration depends on the remedy selected under WAC 173-340-350 through 173-340-390.

b **Arsenic.** Cleanup level based on background concentrations for state of Washington.

c **Benzene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

d **Benzo(a)pyrene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61), adjusted to a 1 x 10^{-5} risk. If other carcinogenic PAHs are suspected of being present at the site, test for them and use this value as the total concentration that all carcinogenic PAHs must meet using the toxicity equivalency methodology in WAC 173-340-708(8).

e **Cadmium.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.62).

f **Chromium (Total).** Cleanup level based on concentration derived using Equation 720-1 for hexavalent chromium. This is a total value for chromium III and chromium VI. If just chromium III is present at the site, a cleanup level of 100 ug/l may be used (based on WAC 246-290-310 and 40 C.F.R. 141.62).

g **DDT (dichlorodiphenyltrichloroethane).** Cleanup levels based on concentration derived using Equation 720-2.

h **1,2 Dichloroethane (ethylene dichloride or EDC)**. Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

i **Ethylbenzene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

j **Ethylene dibromide (1,2 dibromoethane or EDB).** Cleanup level based on concentration derived using Equation 720-2, adjusted for the practical quantitation limit.

k **Gross Alpha Particle Activity, excluding uranium.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.15).

l **Gross Beta Particle Activity, including gamma activity.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.15).

m **Lead.** Cleanup level based on applicable state and federal law (40 C.F.R. 141.80).

n **Lindane.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

o **Methylene chloride (dichloromethane).** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

p **Mercury.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.62).

q **Methyl tertiary-butyl ether (MTBE).** Cleanup level based on federal drinking water advisory level (EPA-822-F-97-009, December 1997).

r **Naphthalenes.** Cleanup level based on concentration derived using Equation 720-1. This is a total value for naphthalene, 1-methyl naphthalene and 2-methyl naphthalene.

s **PCB mixtures.** Cleanup level based on concentration derived using Equation 720-2, adjusted for the practical quantitation limit. This cleanup level is a total value for all PCBs.

t **Radium 226 and 228.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.15).

u **Radium 226.** Cleanup level based on applicable state law (WAC 246-290-310).

Table 740-1
Method A Soil Cleanup Levels for Unrestricted Land Uses.[a]

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	20 mg/kg[b]
Benzene	71-43-2	0.03 mg/kg[c]
Benzo(a)pyrene	50-32-8	0.1 mg/kg[d]
Cadmium	7440-43-9	2 mg/kg[e]
Chromium		
Chromium VI	18540-29-9	19 mg/kg[f1]
Chromium III	16065-83-1	2,000 mg/kg[f2]
DDT	50-29-3	3 mg/kg[g]
Ethylbenzene	100-41-4	6 mg/kg[h]
Ethylene dibromide (EDB)	106-93-4	0.005 mg/kg[i]
Lead	7439-92-1	250 mg/kg[j]
Lindane	58-89-9	0.01 mg/kg[k]
Methylene chloride	75-09-2	0.02 mg/kg[l]
Mercury (inorganic)	7439-97-6	2 mg/kg[m]
MTBE	1634-04-4	0.1 mg/kg[n]
Naphthalenes	91-20-3	5 mg/kg[o]
PAHs (carcinogenic)		See benzo(a)pyrene[d]
PCB Mixtures		1 mg/kg[p]
Tetrachloroethylene	127-18-4	0.05 mg/kg[q]
Toluene	108-88-3	7 mg/kg[r]
Total Petroleum Hydrocarbons[s]		
[Note: Must also test for and meet cleanup levels for other petroleum components--see footnotes!]		
Gasoline Range Organics		
Gasoline mixtures without benzene and the total of ethyl benzene, toluene and xylene are less than 1% of the gasoline mixture		100 mg/kg
All other gasoline mixtures		30 mg/kg
Diesel Range Organics		2,000 mg/kg
Heavy Oils		2,000 mg/kg
Mineral Oil		4,000 mg/kg
1,1,1 Trichloroethane	71-55-6	2 mg/kg[t]
Trichloroethylene	79-01-6	0.03 mg/kg[u]
Xylenes	1330-20-7	9 mg/kg[v]

Footnotes:

a **Caution on misusing this table.** This table has been developed for specific purposes. It is intended to provide conservative cleanup levels for sites undergoing routine cleanup actions or for sites with relatively few hazardous substances, and the site qualifies under WAC 173-340-7491 for an exclusion from conducting a simplified or site-specific terrestrial ecological evaluation, or it can be demonstrated using a terrestrial ecological evaluation under WAC 173-340-7492 or 173-340-7493 that the values in this table are ecologically protective for the site. This table may not be appropriate for defining cleanup levels at other sites. For these reasons, the values in this table should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceedances of the values in this table do not necessarily mean the soil must be restored to these levels at a site. The level of restoration depends on the remedy selected under WAC 173-340-350 through 173-340-390.

b **Arsenic.** Cleanup level based on direct contact using Equation 740-2 and protection of ground water for drinking water use using the procedures in WAC 173-340-747(4), adjusted for natural background for soil.

c **Benzene.** Cleanup level based on protection of ground water for drinking water use, using the procedures in WAC 173-340-747(4) and (6).

d **Benzo(a)pyrene.** Cleanup level based on direct contact using Equation 740-2. If other carcinogenic PAHs are suspected of being present at the site, test for them and use this value as the total concentration that all carginogenic PAHs must meet using the toxicity equivalency methodology in WAC 173-340-708(8).

e **Cadmium.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4), adjusted for the practical quantitation limit for soil.

f1 **Chromium VI.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).

f2 **Chromium III.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4). Chromium VI must also be tested for and the cleanup level met when present at a site.

g **DDT (dichlorodiphenyltrichloroethane).** Cleanup level based on direct contact using Equation 740-2.

h **Ethylbenzene.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).

i **Ethylene dibromide (1,2 dibromoethane or EDB).** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4) and adjusted for the practical quantitation limit for soil.

j **Lead.** Cleanup level based on preventing unacceptable blood lead levels.

k **Lindane.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4), adjusted for the practical quantitation limit.

l **Methylene chloride (dichloromethane).** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).

m **Mercury.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).

n **Methyl tertiary-butyl ether (MTBE).** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4).

o **Naphthalenes.** Cleanup level based on protection of ground water for drinking water use, using the procedures described in WAC 173-340-747(4). This is a total value for naphthalene, 1-methyl naphthalene and 2-methyl naphthalene.

p **PCB Mixtures.** Cleanup level based on applicable federal law (40 C.F.R. 761.61). This is a total value for all PCBs.

Attachment D

Boring Logs

EcoCon, Inc.
Environmental Services

Boring Number:	B1	Sheet Number:	1	of	1
Job Name:	705 7th Street		Date:	3/24/2011	
Client:	JHL Properties				
Location:	705 7th Street, Renton, WA				
Casing Depth:	NA	Surface Elevation:		Water Level:	
Well Screen Size:	NA	Drilling Type:	Direct Push	No free water	
Surface Conditions:	Concrete			Drilling:	
Longitude:				Start	Finish
Latitude:		Time:		830	930
Comments:	Driller uses 4' sampler w/ liners				

Inches Driven	Inches Recovered	Sample Number	Sample Depth	Field Reading	Depth to Water	Boring Depth	Soil Description
						0	Asphalt
						1	Silty sand grading to silt, dry to moist
						2	
						3	
						4	
		B1-5-6'				5	
					▽	6	Water was observed at 6.0 feet bgs
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

EcoCon, Inc.
Environmental Services

Boring Number:	B2	Sheet Number:	1	of	1
Job Name:	705 7th Street		Date:	3/24/2011	
Client:	JHL Properties				
Location:	705 7th Street, Renton, WA				
Casing Depth:	NA	Surface Elevation:		Water Level:	
Well Screen Size:	NA	Drilling Type:	Direct Push	No free water	
Surface Conditions:	Concrete			Drilling:	
Longitude:				Start	Finish
Latitude:			Time:	9:30	10:15
Comments:	Driller uses 4' sampler w/ liners				

Inches Driven	Inches Recovered	Sample Number	Sample Depth	Field Reading	Depth to Water	Boring Depth	Soil Description
						0	Asphalt
						1	Silty sand grading to silt, dry to moist
						2	
						3	
						4	
		B2-5-6'				**5**	
					▽	6	Water was observed at 6.0 feet bgs
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

EcoCon, Inc.
Environmental Services

Boring Number:	B3	Sheet Number:	1	of	1	
Job Name:	705 7th Street		Date:	3/24/2011		
Client:	JHL Properties					
Location:	705 7th Street, Renton, WA					
Casing Depth:	NA	Surface Elevation:		Water Level:		
Well Screen Size:	NA	Drilling Type:	Direct Push	No free water		
Surface Conditions:	Concrete			Drilling:		
		Longitude:			Start	Finish
		Latitude:		Time:	10:30	11:30
		Comments:	Driller uses 4' sampler w/ liners			

Inches Driven	Inches Recovered	Sample Number	Sample Depth	Field Reading	Depth to Water	Boring Depth	Soil Description
						0	Asphalt
						1	Silty sand grading to silt, dry to moist
						2	
						3	
						4	
						5	
		B2-6-7'				6	
					▽	7	Water was observed at 7.0 feet bgs
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

EcoCon, Inc.
Environmental Services

Boring Number:	B4	Sheet Number:	1	of	1	
Job Name:	705 7th Street		Date:	3/24/2011		
Client:	JHL Properties					
Location:	705 7th Street, Renton, WA					
Casing Depth:	NA	Surface Elevation:		Water Level:		
Well Screen Size:	NA	Drilling Type:	Direct Push	No free water		
Surface Conditions:	Concrete			Drilling:		
		Longitude:			Start	Finish
		Latitude:		Time:	11:50	12:30
		Comments:	Driller uses 4' sampler w/ liners			

Inches Driven	Inches Recovered	Sample Number	Sample Depth	Field Reading	Depth to Water	Boring Depth	Soil Description
						0	Asphalt
						1	Silty sand grading to silt, dry to moist
						2	
						3	
						4	
						5	
		B2-5-6'			▽	6	Water was observed at 6.0 feet bgs
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

EcoCon, Inc.
Environmental Services

Boring Number:	B5	Sheet Number:	1	of	1	
Job Name:	705 7th Street		Date:	3/24/2011		
Client:	JHL Properties					
Location:	705 7th Street, Renton, WA					
Casing Depth:	NA	Surface Elevation:		Water Level:		
Well Screen Size:	NA	Drilling Type:	Direct Push	No free water		
Surface Conditions:	Concrete			Drilling:		
		Longitude:			Start	Finish
		Latitude:		Time:	1:30	2:10
		Comments:	Driller uses 4' sampler w/ liners			

Inches Driven	Inches Recovered	Sample Number	Sample Depth	Field Reading	Depth to Water	Boring Depth	Soil Description
						0	Asphalt
						1	Silty sand grading to silt, dry to moist
						2	
						3	
						4	
						5	
		B4-6-7'			▽	6	Water was observed at 7.0 feet bgs
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

EcoCon, Inc.
Environmental Services

Boring Number:	B6	Sheet Number:	1	of	1
Job Name:	705 7th Street		Date:	3/24/2011	
Client:	JHL Properties				
Location:	705 7th Street, Renton, WA				
Casing Depth:	NA	Surface Elevation:		Water Level:	
Well Screen Size:	NA	Drilling Type:	Direct Push	No free water	
Surface Conditions:	Concrete			Drilling:	
Longitude:				Start	Finish
Latitude:			Time:	2:30	3:10
Comments:	Driller uses 4' sampler w/ liners				

Inches Driven	Inches Recovered	Sample Number	Sample Depth	Field Reading	Depth to Water	Boring Depth	Soil Description
						0	Asphalt
						1	Silty sand grading to silt, dry to moist
						2	
						3	
						4	
		B6-5-6'				**5**	
						6	Water was observed at 6.0 feet bgs
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

Attachment E

Professional Qualifications

Environmental Management Services, LLC

Environmental Management Services (EMS) is an environmental contracting and consulting company addressing client's needs throughout the West Coast. Our serves industries include the real estate community, general contractors, property developers and local and state government. We understand the importance of blending a variety of expertise and experience in order to provide our clients the most effective leadership in addressing their specific project needs. Our professionals combine a high level of technical ability with a broad understanding of the overall regulatory compliance requirements.

As an environmental services and consulting company, EMS prides itself maintaining a broad understanding of the most current regulatory compliance requirements, local and state permitting requirements and maintaining contact with our region's environmental advocacy group's positions. EMS provides our clients the services they require by offering cost effective, non-biased, practical, solutions while maintaining positive relations with the regulatory community.

Our associates have completed projects including remedial investigation / feasibility studies (RI/FS), remediation design and management, facility regulatory compliance assessments, due diligence assessments, regulatory compliance training, underground storage tank compliance and hazardous materials management as well as many other environmental compliance related matters for clients throughout the west coast in all avenues of business. The varied background our associates possess compliments the diverse nature of our clientele, providing better understanding of our client's needs and ultimate goals for their projects.

The information in the following pages outlines our professional experience and capabilities in providing environmental management and consulting services. We appreciate your interest in EMS. At your convenience, please feel free to contact our office should you have any questions regarding this document or for more information on the services we provide.

Sincerely,
Environmental Management Services

Stephen M. Spencer
Principal

Stephen M. Spencer
Principal

Mr. Spencer started his career in the environmental services and construction industry in 1987. During his career, he has worked on and successfully completed projects in many varied aspects of the environmental industry. Since 2002, as principal and senior project manager for Environmental Management Services, Mr. Spencer has successfully completed projects for clients throughout the west coast. His forte is in facility assessment, due diligence investigation, health & safety program development and remediation management.

Mr. Spencer has established positive working relationships with regulatory agencies throughout the west coast, affording his clients a superior level of confidence in his approach to their specific project.

His skills as a project manager frequently result in significant savings in both time and budget to his clients. He is proficient in report writing providing a clear, concise detail of project activities including supporting documents and figures. His client's have ranged from property owners and facility operators to the regulatory agencies themselves. His overall understanding of environmental compliance requirements provides a unique perspective on assessing potential and realized environmental risk and a creative understanding of remediation technique.

Robin P. Hamlet, L.G. / L.HG
Sr. Environmental Scientist / Project Manager

- State of Washington Licensed Geologist/Hydrogeologist
- Ecology Licensed Washington State Site Assessor
- Ecology Licensed UST Decommissioning Supervisor
- AHERA Licensed Building Inspector
- OSHA Hazardous Materials & Emergency Response Certified

Robin P. Hamlet is a Licensed Geologist and Hydrogeologist in the State of Washington**.** Mr. Hamlet has 30 years experience in the geological sciences with over 25 years providing professional environmental consulting services. Mr. Hamlet has been involved with environmental investigations working on Environmental Protection Agency (EPA), United States Navy and Air Force environmental projects, as a project geologist and project manager. As a Senior Project Manager in the private sector, Mr. Hamlet has performed multiple Phase I and Phase II Environmental Site Assessments; including geophysical surveys, soil and groundwater studies and has managed the design and implementation of soil and groundwater remediation projects.

As a Licensed Washington State Underground Storage Tank (UST) Decommissioner and Licensed Site Assessor, Mr. Hamlet has managed multiple UST decommissioning and remediation projects, has prepared proposals, final reports, budgets, contracts with subcontractors, negotiated with prospective clients, and coordinated activities with regulatory agencies. Mr. Hamlet has been involved in training personnel in environmental field operations and Health & Safety programs, has working knowledge of state (NW states) and federal environmental regulations and the ASTM standards. As an AHERA Building Inspector, Mr. Hamlet has performed hazardous materials surveys, air monitoring projects as well as providing asbestos abatement projects.

Adam Harris, L.G.
Sr. Environmental Scientist (Contract)

- Master of Science in Sedimentary Geology
- Licensed geologist in California and Washington
- Current OSHA 40 Hour HAZWOPER
- Certified Oracle Database 9 Administrator
- Certified MS Access 2007 Administrator
- Certified ARC/INFO 9.1 Professional

Mr. Harris has a Batchers of Science degree from the University of California (UC), Davis in Environmental & Recourses Sciences, Specializing in Vadose zone and aqueous geochemistry, hydrology, and environmental management. Mr. Harris graduated with Honors and a Citation for excellence. Mr. Harris continued his education, receiving his Masters in Geology from the University of California, Davis. His thesis Topic was: Environmental geochemistry and paleomagnetism of sediment cores obtained from Ocean Drilling Program Leg 169S, Saanich Inlet, British Columbia.

Engineering Geologist,
Leaking Underground Storage Tank Cleanup Program (2001 to 2005)

- Mr. Harris, as a California State Water Recourses Board site manager, implemented state and federal regulations for LUST program. He provided regulatory oversight, reviewed and commented on hydrogeologic reports, plans and findings submitted by other regulated parties for LUST surface spill sites, and surface mines.
- Mr. Harris conducted site investigations, developed site conceptual models, model development, calibration and validation. Further, he reviewed petitions appealing technical decisions of local and regional agencies, Mediated and resolved conflicts between local regulatory agencies and the regulated community.

- Mr. Harris has authored professional opinions, position papers, technical reports, legal orders, notices, presentations and letters for wide stakeholder distribution. Investigated and reported on emerging contaminant fate and transport pathways and collaborated on development and management of statewide online site reporting database.
- Provided technical oversight and guidance to local UST programs, building local program knowledge and ensuring statewide program consistency. Conducted oversight of UST inspections for consistency in program implementation. Introduced legislative concepts resulting in promulgation of new UST regulations.

Geologic Technician - 1999 to 2000

- Mr. Harris participated in international scientific research expedition. Planned transport, set up and operation of environmental analysis laboratory in Antarctica. Investigated and analyzed high-resolution environmental records. Reported research results for publication.

James E. Corcoran, P.E.
Sr. Project Manager / Sr. Project Engineer (Contract)

- Bachelor of Science - Civil Engineering - Oregon State University - 1991
- Washington State Registered Professional Engineer – 1999
- OSHA Hazardous Materials & Emergency Response Certified

Mr. Corcoran has 17 years of experience in Civil Engineering and Project Management. For the past three years, Mr. Corcoran has been the principal of a consulting business that provides civil engineering consulting and site development services including:

- Critical Areas Review
- FEMA floodplain study
- State Environmental Policy Act (SEPA) checklist
- Stormwater Pollution Prevention Plans (SWPPP)
- Spill Prevention, Control, and Countermeasure (SPCC) plans
- Temporary Erosion/Sediment Control (TESC) plans
- Permanent soil stabilization and precise grading plans
- Surface water collection, detention, retention, treatment, and infiltration design
- Construction coordination with utility purveyors
- Site inspection to verify conformance with design intent and contract documents

Mr. Corcoran has provided civil engineering consulting and stormwater management on residential, commercial, and industrial development projects in multiple Washington state jurisdictions including the City of Tacoma, the City of Lacey, the City of Kent, Pierce County, and King County. Specific projects that Mr. Corcoran provided engineering service include:

- Preparing a TESC plan, SPCC plan, and surface water drainage collection and treatment system for a proposed petroleum products recycling process facility which discharges to a municipal storm sewer located in the Port of Tacoma
- Preparing a SEPA checklist, TESC plan, SPCC plan and surface water drainage collection and treatment system for a proposed privately owned fueling facility, which drains to an environmentally sensitive wetland in the City of Kent.
- Preparing a TESC plan, and permanent surface water drainage retention and treatment system, which infiltrates to site soils underlying a proposed commercial retail center in Pierce County.
- Preparing a TESC plan and permanent surface water drainage collection and treatment system which discharges to a municipal storm sewer in the City of Tacoma.
- Preparing a TESC plan and permanent surface water drainage collection, detention and treatment system for a proposed supermarket and commercial retail center located on the Key Peninsula.

Collette Foley, B.S. Geology
Environmental Scientist / Geologist

- Ecology Licensed Site Assessor
- Ecology Licensed UST Decommissioning Supervisor
- AHERA Licensed Building Inspector
- OSHA Compliance Supervisor
- OSHA Hazardous Materials & Emergency Response Certified

Ms. Foley has been conducting Phase I and II Environmental Site Assessments of commercial, industrial, multi- and single-family residential properties throughout western Washington since 2004. Ms. Foley performs a variety of activities associated with completing due diligence investigations including, but not limited to current and historical site research, regulatory agency file reviews, and subsurface investigations including drilling soil borings and installing monitoring wells to determine the presence and outcome of contamination in soil and groundwater.

Additionally, Ms. Foley completes asbestos "*Good Faith*" surveys prior to demolition or renovation of buildings; conducts project oversight for UST removals; and provides extensive environmental consulting as requested. Ms. Foley received her Bachelors degree in Geology and Environmental Science in 2003 from Pacific Lutheran University and has over two years experience as a field geologist / hydrogeologist performing regional hydrogeologic characterization and production well drilling.

Kevin Foley, B.S. Environmental Science, AICP
Sr. Environmental Planner

- AICP Certified Planners
- Washington State Commercial Real Estate Agent

Mr. Foley currently serves as EMS's main point of contact to assist in the resolution of land use, zoning and permitting issues at the local, state and federal level. He has extensive experience in helping prepare and process development proposals for vacant property and the expansion or renovation of developed sites. He also coordinates certain baseline/investigative work by coordinating land surveys needs, sensitive area analysis and the completion of civil design plans for roads, water, traffic and storm water requirements.

Gina Mulderig, B.S. Chemistry
Environmental Scientist / Chemist

- Ecology Licensed Site Assessor
- Ecology Licensed UST Decommissioning Supervisor
- AHERA Licensed Building Inspector
- Certified Erosion and Sediment Control Lead
- OSHA Hazardous Materials & Emergency Response Certified

Ms. Mulderig received her Bachelors degree in Chemistry from the University of Puget Sound in 1979. Ms. Mulderig has been working in the environmental regulatory compliance field since 1985, starting her career with a position as an environmental analyst for Weyerhaeuser Company. Her fifteen year position at Weyerhaeuser required a thorough knowledge of environmental regulatory compliance, focusing on groundwater monitoring, waste water management, storm water management and facility compliance audits.

Ms. Mulderig worked with two local environmental services / consulting firms from 2000 until 2007, greatly increasing her overall regulatory compliance, hydrogeology and environmental engineering knowledge and experience.

Her position with EMS as a Project Manager / Environmental Scientist provides a vast knowledge base to EMS clients in multiple areas of regulatory compliance and environmental science.

Kaitlyn Allegretti, B.S. Geology
Environmental Scientist / Technician

- Ecology Licensed UST Decommissioning Supervisor
- Ecology Licensed Site Assessor
- AHERA Licensed Building Inspector
- OSHA Hazardous Materials & Emergency Response Certified

Ms. Allegretti serves as a site manager and field technical for EMS. Ms. Allegretti graduated from the University of Dayton (2005) with a Bachelor's degree in Geology. Ms. Allegretti's primary responsibilities are field work including monitoring well sampling, underground storage tank closure and decommissioning and asbestos inspections. Ms. Allegretti was licensed as an AHERA building inspector and UST Decommissioner within the first 60 days of her employment.

During her two years with EMS, Ms. Allegretti has completed in excess of fifty Phase I Environmental Site Assessments and in excess of 20 commercial underground storage tank closure projects.

James D. Coppernoll, L.G. / L.HG (Sub-Consultant)
Licensed Geologist / Hydrogeologist

- Washington State Licensed Geologist and Hydrogeologist
- Ecology Licensed Site Assessor

James D. Coppernoll is a Washington State licensed Geologist and Hydrogeologist with thirteen years of experience practicing environmental geology in the Northwest. During his career, Mr. Coppernoll worked with clients ranging from major oil companies and national corporations to local businesses to identify, manage, and resolve their environmental problems and helped local agencies, businesses, and individuals with their environmental, geological, and regulatory issues.

Mr. Coppernoll has conducted various environmental and geological investigations ranging from numerous Phase I Environmental Assessments to contaminated site investigations and remedial planning and implementation as well as land use and development studies in Washington, Oregon, Idaho, Montana, and Alaska, and has frequently acted as a regulatory liaison and client representative in third-party negotiations.

Mr. Coppernoll managed all phases of assessment and remediation at dozens of retail and bulk fuel facilities for major oil companies in the Northwest including: excavation and disposal of contaminated soil; free product recovery; feasibility studies; and design, installation, and

operation/maintenance of in-situ soil and ground water remediation systems. Mr. Coppernoll managed many of these sites from initial assessment through remediation and closure with the state.

Mr. Coppernoll has conducted geological investigations and assessments for diverse property development projects in the northwest including landfills, hot springs, and residential properties. The purpose of these assessments and investigations was to provide professional and reliable information for use in developing sensitive areas properties.

Professional References

Diamond Parking Services
Mr. Bob Turley, CFO
3161 Elliott Ave. Ste. 200
Seattle, Washington 98121
(206) 284-3100 (Client)

Republic Services / Regional Disposal
Leslie Whiteman, Special Waste Manager
54 South Dawson Street
Seattle, Washington 98134
(206) 332-7711 (Client)

Michael J. Goldfarb Enterprises, LLC
Brett Goldfarb, President
1420 Fifth Avenue. Suite 2625
Seattle, WA 98101-2333

Joe Hall Construction
Robert Walker, Project Manager
1317 54th Ave. E.
Tacoma, Washington 98424
(253) 922-6815 (Client)

The Wattles Company
Craig Wattles, President
35800 2249th Ave SE
Enumclaw, Washington 98022
(253) 272-7205

R.W. Rhine, Inc.
Mr. Joel D. Simmonds, President
1124 112th St. East
Tacoma, Washington 98445
(253) 531-9548 (Client)

Baseline Engineering, Inc.
Terry Ferguson
1910 64th Ave. West
Fircrest, WA 98466
(253) 565-4491 (Client)

CAM Properties
Mr. Peter Coates, President
18420 68th Avenue
Kent, Washington 98032
(425) 251-3268 (Client)

Best Parking Lot Services
Rebecca Craig, Owner
PO Box 159
Sumner, Washington 98390
(253) 863-3330 (Client)

Gallanar Inc. / Independent Fuels
Mike Gallanar, President
PO Box 15661
Seattle, Washington 98115
(206) 779-8860 (Client)

Financial Institution References

First Savings Bank Northwest
Mr. John Wallace, Sr. Vice President
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400 Industrial Drive, Suite 110
Tukwila, Washington 98188
(206) 719-0118

West Coast Bank
Mr. Robert Salvador, Vice President
Commercial Lending
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Tukwila, Washington 98188
(206) 719-0118

KeyBank
Jennifer E. Ringenbach, Vice President
Commercial Lending
1101 Pacific Avenue
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Tacoma, Washington 98411-5500

Washington Trust Bank
Mr. Jack Heath, President
PO Box 2127
Spokane, Washington 99210-2127
(509) 353-3897

Washington First International Bank
Kathleen Herdlein
Manager
9709 Third Ave NE, Suite 110
Seattle, Washington
(206) 830-7156

Commercial Real Estate References

Johnson Commercial
Tim Johnson, President
11120 Gravely Lake Drive SW
Lakewood, Washington 984999
(253) 589-9999 / tim@tjcp.biz

CB Richard Ellis | Brokerage Services
John Bauder, Vice President
1145 Broadway Plaza, Suite 1000
Tacoma, WA 98402
(253) 596-0047 / John.Bauder@cbre.com

Neil Walter Company
Bruce Valentine, Principal
Foss Landing
1940 East D Street, Suite 100
Tacoma, Washington 98421
(253) 779-2400/bvalentine@neilwalter.com

PDSK Properties, Inc.
Paul Krakow, President
PO Box 98630
Lakewood, WA 98496-8630
(253) 627-4070

Public Agency References

Tacoma Pierce County Health Department
Rob Olsen, Special Inspector
3629 South D Street, MS 170
Tacoma, WA 98418-6813
(253) 798-2855 - Office

Tacoma Pierce County Health Department
Sharon Bell, Special Inspector
3629 South D Street, MS 170
Tacoma, WA 98418-6813
(253) 798-2891 – Office

Tacoma Public Utilities
Paris Um, Health & Safety Manager
3628 South 35th Street
Tacoma, WA 98411-0007
(253) 502-8555 - Office

Pierce County
Rick Tacket, Property Manager
1102 Broadway
Tacoma, Washington 98402
(253) 798-6200

Washington Department of Ecology
Carol Johnston, Site Manager / Inspector
PO Box 47775
Olympia, WA 98504-7775
(360) 407-6263 – Office

King County DDES
Elizabeth Deraitus Abatement Manager
900 Oakesdale Ave SW
Renton, WA 98057-5212
206-296-7090

Yakima County
Mark Cleaver, Project Engineer
128 N. 2nd Street, Fourth Floor
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Washington Department of Ecology
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