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DEPT OF ECOLOGY

FINDINGS FROM LIMITED PHASE II ENVIRONMENTAL ASSESSMENT SEVENTH AVENUE SERVICE 701 S. JACKSON STREET SEATTLE, WASHINGTON

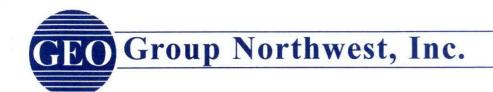
E-0260-2

Prepared for:

Mr. Barry Mar Dott Mar, Inc. P.O. Box 3343 Seattle, Washington 98114

March 15, 2006

Geo Group Northwest, Inc. 13240 NE 20th Street, Suite 10 Bellevue, Washington 98005 Phone: (425) 649-8758 / Fax: (425) 649-8758



March 15, 2006

E-0260-2

Mr. Barry Mar
Dott Mar, Inc.
P.O. Box 3343
Seattle, Washington 98114

Subject:

Findings from Limited Phase II Environmental Assessment

Seventh Avenue Service 701 S. Jackson Street Seattle, Washington

Dear Mr. Mar:

GEO Group Northwest, Inc., has completed its limited Phase II environmental assessment of the property referenced above and located in Seattle, Washington. The Phase II activities were completed consistent with our proposal dated October 20, 2005.

PREVIOUS ASSESSMENT

In 1992, GEO Group Northwest, Inc., performed a limited subsurface assessment at the project site and prepared a report of its results.¹ This assessment included drilling three soil borings (identified as B-1 through B-3 in the previous assessment report; but referred to as H-1 through H-3, respectively, in this letter), collecting soil samples from the borings, and testing selected soil samples for the presence of petroleum hydrocarbons and lead. These borings were located in proximity to three abandoned underground storage tanks on site, and were completed to

Level 2 Site Contamination Assessment, Jackson & 7th Gas Station, 701 South Jackson Street, Seattle, Washington. Geo Group Northwest, Inc., October 14, 1992.

and sample depth relative to possible nearby contaminant sources (such as underground storage tanks or fuel delivery lines).

FINDINGS

Soils encountered in the soil borings typically consisted of medium dense to dense interlayered silt, sandy silt, and silty sand, with lesser relatively clean sand layers. Groundwater was not encountered in the borings, but water seepage was present in some sandy layers located at depths between approximately 7 to 12 feet and also between approximately 20 to 30 feet (relative to the ground surface). Copies of the boring logs are presented in Attachment 1 to this letter.

The laboratory analysis results indicate that the soil samples collected from borings B-1, B-3, and B-4 contain petroleum hydrocarbons. Specifically, the soil samples collected at 12.5 feet in boring B-1, at 10 feet in boring B-3, and at 14 feet in boring B-4 contained gasoline-range hydrocarbons (TPH-G) at concentrations above the Washington State Model Toxics Control Act (MTCA) Method A cleanup level in soil at non-industrial sites. Also, five of the six samples contained benzene at concentrations above the applicable MTCA Method A cleanup level. None of the analyzed samples was reported to contain diesel or heavy oil hydrocarbons at concentrations above the applicable MTCA Method A cleanup level. The analysis results and MTCA Method A cleanup levels are presented in Table 2 at the end of this letter. A copy of the laboratory analysis report is provided in Attachment 2 to this letter.

Volatile organic compounds reported detected in the analyzed soil samples from borings B-3 and B-4 included isomers of trimethylbenzene and propylbenzene, propyltoluene, and naphthalene. These compounds are common minor constituents in gasoline products. With the exception of naphthalene, they do not have individual established cleanup levels. No halogenated volatile organic compounds were reported detected in the analyzed samples.

CONCLUSIONS

Based on the findings presented above, GEO Group Northwest, Inc., concludes that subsurface soils in the vicinity of the abandoned underground storage tanks and the former dispenser island contain gasoline-range hydrocarbons (TPH-G) and one or more BTEX constituents at concentrations above MTCA Method A cleanup levels for soil at non-industrial sites. Also,

GEO Group Northwest, Inc.

depths between 10 and 17.5 feet below the ground surface. The boring locations are illustrated in Plate 2 - Site Plan.

Evidence of petroleum hydrocarbon contamination was noted in the soils encountered in borings H-1 and H-3, according to the previous assessment report. Gasoline-range hydrocarbons and benzene, toluene, ethylbenzene, and xylenes (BTEX constituents) were reported present at concentrations above cleanup levels in a soil sample collected at a depth of 12.5 feet from boring H-1. Gasoline-range and heavier oil-range hydrocarbons were reported present at concentrations above cleanup levels in a soil sample collected at a depth of 7.5 feet from boring H-3. The laboratory analysis results are summarized in Table 1 at the back of this letter.

The cleanup levels cited in the previous assessment report were modified in following years. Based on the current (year 2006) Washington State Model Toxics Control Act Method A cleanup levels, gasoline-range hydrocarbons and BTEX constituents reported detected in the samples from borings H-1 and H-3 exceed the applicable cleanup levels. The oil-range hydrocarbons reported detected in the sample from boring H-3, however, are below the current applicable cleanup level.

CURRENT ASSESSMENT ACTIVITIES

GEO Group Northwest, Inc., supervised the drilling of four exploratory soil borings (identified as B-1 through B-4) on the site during February 1 and 2, 2006. The borings were drilled using a truck-mounted drilling rig with hollow-stem augers. The borings were completed to depths of approximately 40 feet below the ground surface and were backfilled with bentonite after the drilling and sampling work was finished. The boring locations are illustrated in Plate 2 - Site Plan.

A GEO Group Northwest, Inc., geologist logged the borings and collected soil samples for visual evaluation and laboratory analysis. Six soil samples (two from each of borings B-1, B-3, and B-4, where field evidence of petroleum hydrocarbon presence was noted) were sent to an analytical laboratory for testing for petroleum hydrocarbons. Two of these samples (one from boring B-3 and one from boring B-4) also were selected for testing for volatile organic compounds, due to their proximity to the service garages. The samples that were sent for analysis were chosen on the basis of evidence of contamination (such as odor or discoloration)

subsurface soils in the southwestern part of the site contain TPH-G and BTEX constituents at concentrations above applicable cleanup levels. Our interpretation of the approximate lateral extent of soils with petroleum hydrocarbons at concentrations above applicable cleanup levels is illustrated in Plate 3 - Lateral Extent of Petroleum Hydrocarbons in Soil.

The vertical extent of petroleum-impacted soils appears to be limited to a maximum depth of approximately 17 feet at B-1, 18 feet at boring B-3, and 16 feet at boring B-4, based on our observations of soil samples (including checking the samples for hydrocarbon odor) collected from the borings drilled for this assessment. Due to the interlayered character of the silt and sandy soils beneath the site, however, the depth of petroleum-impacted soils at locations away from the borings may vary. In general, it appears that excavating the site to an elevation of approximately 66 feet probably would result in the removal of most or all of the on-site soils that contain TPH-G or BTEX constituents above MTCA Method A cleanup levels, as illustrated in Plate 4 - Vertical Extent of Petroleum Hydrocarbons in Soil.

CLOSING

GEO Group Northwest, Inc., appreciates the opportunity to provide you with environmental consulting services for this project. Please feel free to call us if you have any questions regarding this letter.

Sincerely,

GEO Group Northy

Keith Johnson

Project Geologist

KEITH A. JOHNSON

William Chang, PE

Tilliam le

Principal Engineer

Illustrations

Plate 1 - Site Location Map

Plate 2 - Site Plan

Plate 3 - Lateral Extent of Petroleum Hydrocarbons in Soil

Plate 4 - Vertical Extent of Petroleum Hydrocarbons in Soil

Tables

Table 1 - Soil Analysis Results - August 1992

Table 2 - Soil Analysis Results - February 2006

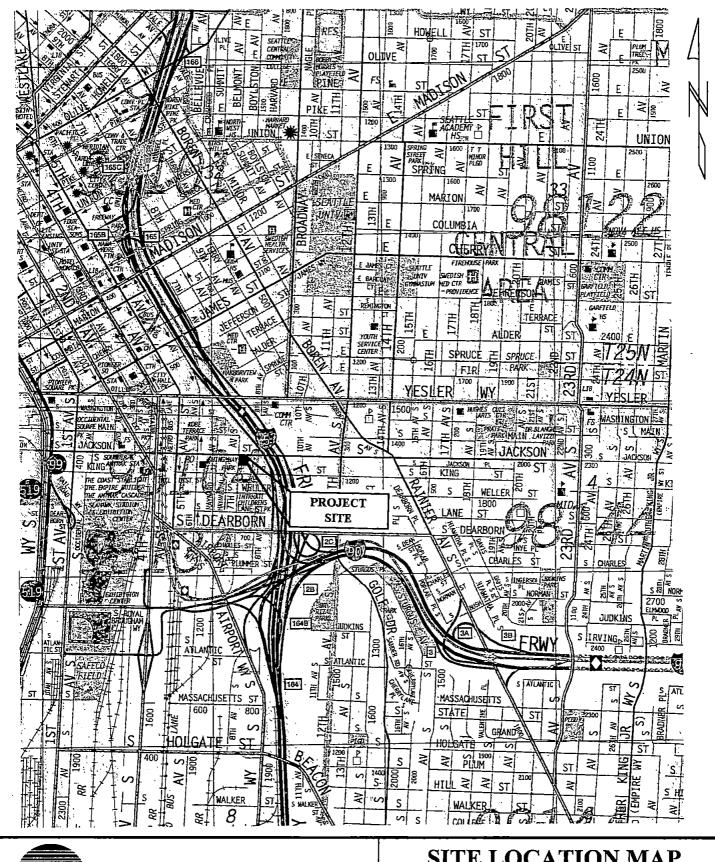
Attachments

Attachment 1 - Soil Classification Legend and Boring Logs

Attachment 2 - Laboratory Analysis Report

ILLUSTRATIONS

E-0260-2





GEO Group Northwest, Inc.

Geotechnical Engineers, Geologists, & **Environmental Scientists**

SITE LOCATION MAP

SEVENTH AVENUE SERVICE 701 S. JACKSON STREET SEATTLE, WASHINGTON

SCALE:

1'' = 1500'

DATE:

3/1/06

MADE:

KJ

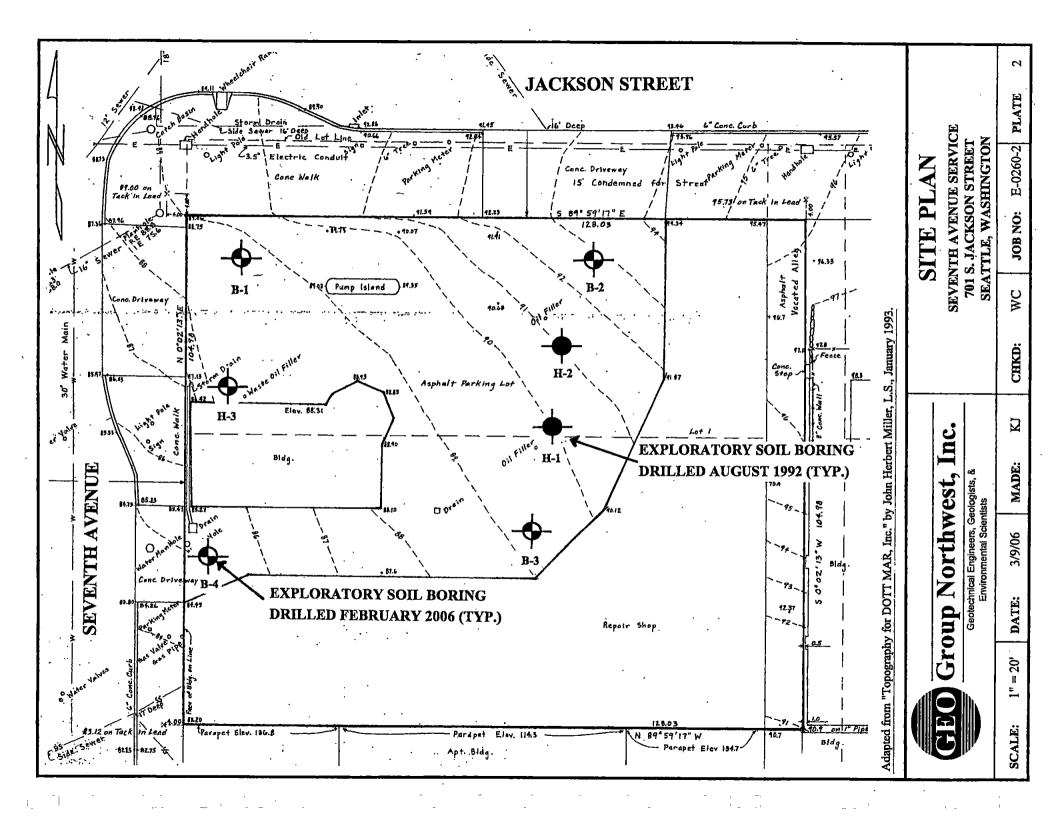
CHKD:

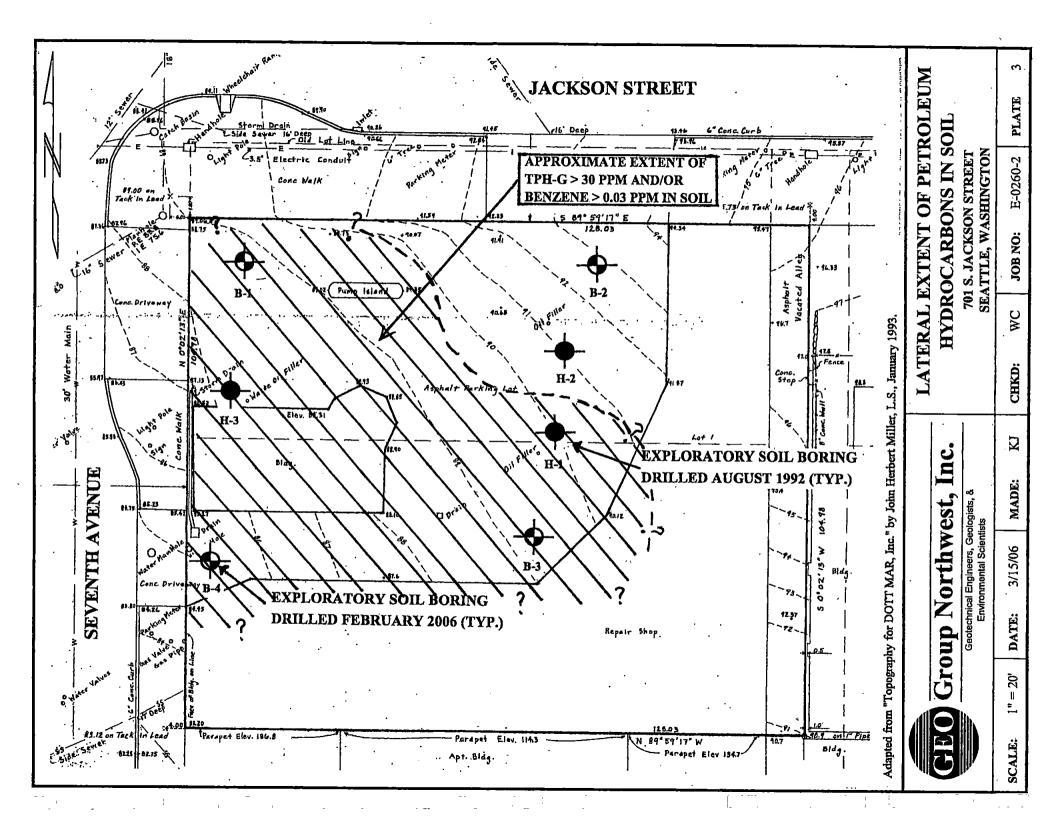
WC

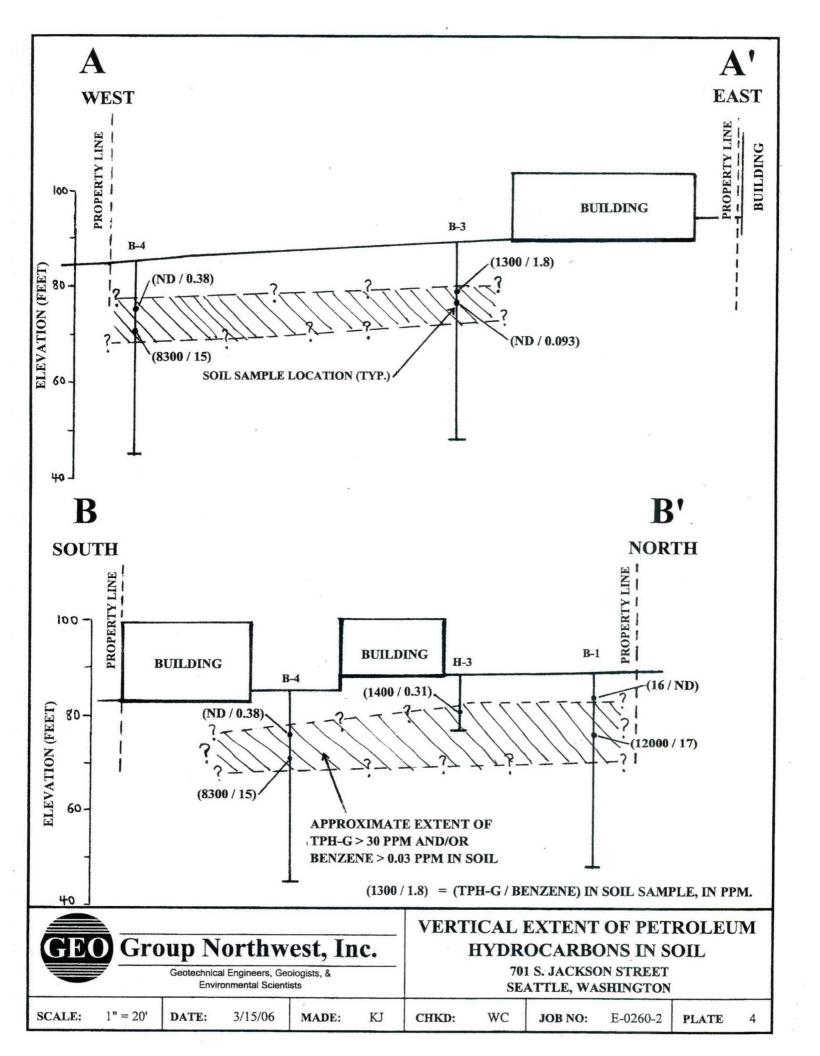
JOB NO:

E-0260-2

PLATE







TABLES

E-0260-2

TABLE 1
SOIL ANALYSIS RESULTS - AUGUST 1992

701 S. Jackson Street, Seattle, Washington

E-0260-2

Boring No.	Depth (feet)	Date Collected	WTPH (ppm)	Total Lead (ppm)	TPH-G (ppm)	TPH-D (ppm)	TPH-O (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)
H-1	8.5 12.5	8/3/92 8/3/92	NT NT	ND 1.5	2.2 6,000	NT NT	NT NT	ND 4	ND 55	ND 66	0.1 330
H-2	7.5	8/3/92	NT	2.2	1.6	NT	NT	ND	ND	ND	ND
H-3	7.5	8/3/92	1,800	3.8	1,400	NT	NT	0.31	1.9	6.2	16
Regulatory C	riteria			250	100/30 1	2000 ²	2000 ²	0.03	7	6	9

Notes:

The borings are identified in the previous assessment report, dated 1992, as B-1, B-2, and B-3.

NT = Not tested.

ND = Not detected. Refer to laboratory report for detection limits.

ppm = parts per million.

Concentrations exceeding regulatory criteria are shown in **bold** print.

TPH-G analyses performed using WTPH-G Method; BTEX analyses performed using EPA Method 8020.

WTPH analysis performed using EPA Method 418.1 Modified.

Regulatory Criteria: Washington State Model Toxics Control Act Method A Cleanup Levels.

¹ Cleanup level is 100 ppm if no benzene is present and if total of toluene, ethylbenzene, and xylenes is less than 1% of the gasoline mixture; otherwise, the cleanup level is 30 ppm.

² Cleanup level applies to the combination of diesel and oil hydrocarbons.

³ BTEX and volatiles analyses for this sample performed using EPA 8260B method.

TABLE 2
SOIL ANALYSIS RESULTS - FEBRUARY 2006

701 S. Jackson Street, Seattle, Washington

E-0260-2

Boring No.	Depth (feet)	Date Collected	TPH-G (ppm)	TPH-D (ppm)	TPH-O (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	Naphthalenes (ppm)
B-1	5	2/1/06	16	ND	ND	ND	ND	ND	0.061	NT
	12.5	2/1/06	12,000	560	ND	17	7.2	210	860	NT
B-3	10	2/1/06	1,300	ND	ND	1.8	4.5	12	35.4	NT
	12.5	2/1/06	ND	ND	ND .	0.093 ³	0.39 3	0.19^{3}	1.08 ³	ND ³
B-4	9	2/2/06	ND	ND	ND	0.38	0.21	0.12	0.19	NT
	14	2/2/06	8,300	280	ND	15 ³	35 ³	100 ³	440 ³	33 ³
Regulatory Cı	riteria		100/30 1	2000 ²	2000 ²	0.03	7	6	9	5

Notes:

NT = Not tested.

ND = Not detected. Refer to laboratory report for detection limits.

ppm = parts per million.

Concentrations exceeding regulatory criteria are shown in **bold** print.

TPH-G and BTEX analyses performed using NWTPH-G Method (except as noted);

TPH-D and TPH-O analyses performed using NWTPH-Dx Method.

Regulatory Criteria: Washington State Model Toxics Control Act Method A Cleanup Levels.

¹ Cleanup level is 100 ppm if no benzene is present and if total of toluene, ethylbenzene, and xylenes is less than 1% of the gasoline mixture; otherwise, the cleanup level is 30 ppm.

² Cleanup level applies to the combination of diesel and oil hydrocarbons.

³ BTEX and volatiles analyses for this sample performed using EPA 8260B method.

ATTACHMENTS

E-0260-2

LEGEND FOR SOIL CLASSIFICATION AND PENETRATION TEST DATA

				UNIF	IED SOIL C	LASSIFICAT	TION SYSTE	M (USCS)					
. ·	AJOR DI	VISION		GROUP SYMBOL	TYP	'ICAL DESCRI	PTION .	LABORAT	FORY CLASS	IFICATION CR	ITERIA		
		ر .	CLEAN GRAVELS	GW		GRAVELS, GRAVE LITTLE OR NO FIN	EL-SAND MIXTURE, IES	CONTENT	Cu = Cc = (D30	= (D60 / D10) greate) ² / (D10 * D60) be	of than 4 tween 1 and 3		
COARSE-GRAINED	GRAN (More TI Coarse F	an Half	(little or no fines)	GP		DED GRAVELS, AN JRES LITTLE OR N		OF FINES BELOW 5%	CLEAN G	REQUIREMENT			
SOILS	Larger Ti Sie	an No. 4	DIRTY GRAVELS	GM-	SILTY GRAVE	LS, GRAVEL-SAND	SILT MIXTURES	CONTENT OF FINES EXCEEDS	GM: ATTE	OF P.I. LESS THA			
			(with some. fines)	ec	CLAYEY GRAVE	els, gravel-sani	D-CLAY MIXTURES	12%	GC: ATT	ATTERBERG LIMITS ABOVE "A" LI or P.I. MORE THAN 7			
	SAN		CLEAN SANDS	sw	WELL GRADED S	NO FINES	SANDS, LITTLE OR	CONTENT		² (D60 / D10) greate) ² / (D10 * D60) bet			
More Than Half by Weight Larger Than	(More Tr Coarse Fi Smaller Tr Sie	raction is nan No. 4	(little or no fines)	SP	POORLY GRADE	D SANDS, GRAVE OR NO FINES	LLY SANDS, LITTLE	OF FINES BELOW 5%	CLEANS	SANDS NOT MEET REQUIREMENTS			
No. 200 Sieve	2.0	7 .	DIRTY SANDS	SM	SILTY S	ANDS, SAND-SILT	MIXTURES	CONTENT OF FINES		ATTERBERG LIMITS BELOW "A" LINE with P.I. LESS THAN 4			
			(with some fines)	sc	CLAYEY S	ANDS, SAND-CLA	Y MIXTURES	EXCEEDS 12%		BERG LIMITS ABO Mith P.I. MORE TH	·- · · · - · · ·		
	SIL (Below A Plasticity	Line on	Liquid Limit < 50%	ML		TS, ROCK FLOUR, SLIGHT PLASTICE			TY CHART	U-Line			
Fine-Grained Soils	Negligible		Liquid Limit > 50%	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FOR SOIL PASSING NO. 40 SIEVE				СН				
	CLA (Above A Plasticity	-Line on	Liquid Limit < 50%	, CL		S OF LOW PLASTICITY, GRAVELLY, SILTY CLAYS, CLEAN CLAYS		PLASTICITY INDEX (%)	1		A-Line		
Less Than Half by	Negligible		Liquid Limit > 50%	CH	INORGANIC CLA	YS OF HIGH PLAS	TICITY, FAT CLAYS	ASTIC:					
Weight Larger Than No. 200 Sleve	ORGANIC CLA (Below A	YS	Liquid Limit < 50%	OL	PLASTICITY 10			ОН					
	Plasticity		Liquid Limit > 50%	OH	ORGANIC	CLAYS OF HIGH F	PLASTICITY	0 10 20	- MILLO 02	50 60 70	80 90 100		
HIGH	LY ORGAN	IIC SOILS		Pt	PEAT AND (OTHER HIGHLY OR	IGANIC SOILS			LIMIT (%)			
	SOIL P	ARTICLE			GENERAL GUI	DANCE FOR EN	IGINEERING PRO	PERTIES OF SOILS, I	BASED ON STA	ANDARD PENET	RATION TEST		
		— - T	ANDARD SIEV					(GF1) DATA	· -i-		· .		
FRACTION	Pass Sieve	Size (mm)	Retai	Size (mm)	Blow Counts		NDY SOILS			TY & CLAYEY S	OILS		
SILT / CLAY	#200	0.075		(matt)	N .	Relative Density, %	Friction Angle ф, degrees	Description	Blow Counts N	Strength Qu, tsf	Description		
SAND					0-4	0 -15		Very Loose	<2	< 0.25	Very soft		
FINE	#40	0.425	#200	0.075	4-10	15 - 35	26 - 30	Loose	2-4	0,25 - 0,50	Soft		
MEDIUM	#10	2.00	#40	0.425	10 - 30	35 - 65	28 - 35	Medium Dense	4'-8	0.50 - 1.00	Medium Stiff		
COARSE	#4	4.75	#10	2.00	30 - 50	65 - 65	35 - 42	Dense-	8-15	1.00 - 2,00	- Stiff		
GRAVEL.					> 60	85 - 100	38 - 46	Very Dense	. 15 - 30	2.00 - 4.00	Very Stiff		
FINE	0.75"	19 ·	#4	4.75					> 30	> 4.00	Hard		
COARSE	3*	76 0.75" 19											
COBBLES			ım to 203 mm		GEO	Gro	up Noi	rthwest,	Inc.				
BOULDERS	_		> 203 mm		Geotechnical Engineers, Geologi			ngineers, Geologists, &					
OCK FRAGMENTS			> 76 mm				mental Scientists			4 7			
ROCK		>0.76 cub	oic meter in volum	19 ·		P110119 (42	a) (40-01-01	rax (425) 649	-0100	PLATE	A 1		

Page 1 of 2

I	Logged By: KJ		KJ Date Drilled	:			Sur	face Elev.	89 feet
Depth		USCS	Description		<u> </u>	aple	Blow Counts per 6"	Water Content %	Comments
ft.	ft.	Code	Asphalt (2" thick) over concrete (5" to 6" th	ick).	Туре	No.			
5		ML ML	Olive gray SILT, damp, medium dense, rare some oxidation stain (NATIVE SOIL). Gray SILT, damp, medium dense, moist san of sample, hydrocarbon odor.			S1 S2	2,7,9 N=16 5,14,10 N=24	28.2 28.4	
10 _	80	MIL/ SP	Olive gray SILT and SAND, interbedded, de trace oxidation stain in sand, thickly interbed odor.	• •		S3	5,15,13 N=28	4.7	
15 -		SP	Gray SAND, damp to moist, dense, occasion oxidation stain, hydrocarbon odor.	nal silt lenses, no	I	S4	7,16,19 N=35	17.2	
15 _		ML/ SP	Olive gray SILT and gray SAND, interbedd dense, weak hydrocarbon odor.	ed, damp to moist,	上	S5	5,11,22 N=33	28.6	
20 _	70	ML	Olive SILT, damp to moist, medium dense, zones, occasional thin silty sand layers, no h			S6	4,8,13 N=21	27.8	, .
25 _ -		ML/ SM	As above but interbedded with olive gray SI SAND, damp, medium dense, sand is mostly some silt layers contain lesser sand.			S7 (4,10,14 N=24	19.8	
30 _	60	SM	Olive gray SILTY SAND, damp, medium de fine and fine grained, light oxidation stain, o laminae.	-	I	S8	8,11,13 N=24	24.1	
35 _		SP- SM	Olive to brownish gray SAND to SILTY SA dense, thinly bedded, sand is very fine and f occasional silty sand lenses, minor oxidation	ine grained,	T	S9	8,22,31 N=53	17.1	
40	50	SP	Light brown gray SAND, damp, dense, very grained, trace oxidation stain.	fine and fine		S10	9,20,21 N=41	7.5	
LEGE	ND:	<u></u> :	2" O.D. Split-Spoon Sampler 3" O.D. Dames & Moore Sampler 3.25" O.D. Dames & Moore Sampler				d Penetration 7 evel during dri		
	GE(=	Geotechnical Engineers, Geologists, & Environmental Scientists	JOB NO. G-0	SEV 70 SE	ENTH	ING I AVENUE : ACKSON S' LE, WASHII DATE	SERVICE IREET	PLATE A2

Page 2 of 2

			DOMING	, , , ,	. D I						rage 2 of	_
L	ogge	d By:	KJ Date Drilled	:	1/06			Sur	face Elev.		89 feet	
Depth ft.	El. ft.	USCS Code	Description			<u> </u>	nple No.	Blow Counts per 6"	Water Content %		Comments	
11.	IL.	Code			·	Type	INO.			 		
45 _			Bottom of boring: 40.5 feet. Drilling Method: Hollow-stem auger. Sampling Method: 2-inch-O.D. SPT sampl lb. hammer with a 30-inch drop. Groundwater not encountered during drillin									
50			encountered.									
55 _												
60 _												
65 _												
70												•
75												
80												
LEGE	ND:	<u>I</u> :	2" O.D. Split-Spoon Sampler 3" O.D. Dames & Moore Sampler 3.25" O.D. Dames & Moore Sampler	1		\triangle	water I	d Penetration '	illing		· 	
GEO Group Northwest, Inc. Geotechnical Engineers, Geologists, & Environmental Scientists						SEV 70 SI	ENTE	ING I AVENUE ACKSON S LE, WASHI	SERVICE TREET			
				JOE	NO. G	0260		DATE	2/13/06]	PLATE A	.3

Page 1 of 2

I	.ogge	ed By:	KJ Date Drilled:	2/1/06			Suri	face Elev.	93 fee	et
Depth	El. ft.	USCS Code	Description)	Sam		Blow Counts per 6"	Water Content %	Comme	nts
ft.	π.	Code	Asphalt (2" thick) over concrete (5" to 6" thick	ck).	Туре	No.				
5	90	ML	Olive gray SILT with little sand and gravel, d crumbly, some oxidation stain (DISTURBED		T	SI	2,3,4 N=7	22.6		
		ML	Gray SILT, damp, medium dense, contains a medium grained sand lens 2" thick, (NATIV)			S2	4,9,12 N=21	30.1		
10		SM/ SP	Olive brown SILTY SAND and SAND, interdense, trace oxidation stain in sand, sand is figrained.			S3	7,12,18 N=30	8.6		
-		SM/ SP	As above, thickly interbedded.			S4	9,16,18 N=34	12.8		
15	80	SP	Olive gray SAND, damp, dense, medium and fines.	fine grained, no		S5	8,16,19 N=35	8.6		
- "		SP	As above.		I	S6	7,16,23 N=39	9.3		
20	70	ML/ SP	Gray SILT and olive gray SAND, interbedde dense, sand is fine and medium grained, some to silty sand.		T	S7	8,10,20 N=30	30.0	-	
25		MIL/ SM	As above but also interbedded with olive gradamp to moist, dense, moist to wet sand lens grained.		T	S8	6,14,22 N=36	26.5		
30	60	SM	Gray SILTY SAND, damp to moist, dense, s fine grained.	and is very fine and	T	S9	8,17,26 N=43	24.9		
35		SM	Olive SILTY SAND, as above.		T	\$10	6,11,20 N=31	25.2		
40										
LEGE	ND:	重	2" O.D. Split-Spoon Sampler 3" O.D. Dames & Moore Sampler 3.25" O.D. Dames & Moore Sampler		SPT = 8		d Penetration ? evel during dri			
Ć	<u>ब</u> ार	₹	Group Northwest, Inc. Geotechnical Engineers, Geologists, & Environmental Scientists		SEV	ENTE	ING I H AVENUE ACKSON S LE, WASHI	SERVICE TREET		
			•	JOB NO. G-0	260		DATE	2/13/06	PLAT	E A4

Page 2 of 2

	DOMING NO. D								rage 2 of 2
Lo	gge	d By:	KJ Date Drilled:	:2/1/06	<u> </u>			face Elev.	93 feet
Depth :		USCS Code	Description		San Type	nple No.	Blow Counts per 6"	Water Content %	Comments
-		SM/ SP	SILTY SAND and SAND, interbedded, of sand predominates, sand is very fine and to occasional silt lenses, minor oxidation states.	fine grained,	Ī	S11	9,20,25 N=45	17.7	
45			Bottom of boring: 41.5 feet. Drilling Method: Hollow-stem auger. Sampling Method: 2-inch-O.D. SPT sample lb. hammer with a 30-inch drop.	er driven using a 140					
50 _			Groundwater not encountered during drillin encountered.	g. No fill					
55 _									
60 _			/						
65									
70 _									
75 _									·
80									
LEGEN	ND:		2" O.D. Split-Spoon Sampler 3" O.D. Dames & Moore Sampler 3.25" O.D. Dames & Moore Sampler		∇	water l	d Penetration	illing	
	E (=	Geotechnical Engineers, Geologists, & Environmental Scientists		SEV 70 SI	ÆNTI 01 S. J	AVENUE ACKSON S LE, WASHI	SERVICE TREET NGTON	·
			<u> </u>	JOB NO. G-0	260		DATE	2/13/06	PLATE _A5_

Page 1 of 2

1	ogge	ed By:	KJ Date Drilled:	2/1/06			Sur	face Elev	89 feet
1 -		USCS	Description		San		Blow Counts per 6"	Water Content %	Comments
ft.	ft.	Code	Asphalt (2" thick) over broken concrete (3"	to 4" thick).	Туре	No.			
5		ML	Olive SILT, damp, medium dense, some min sand, occasional brown clean sand lens (NA	or very fine to fine		S1	3,8,9 N=17	32.9	
		SM- SP	Olive brown SAND to SILTY SAND, damp is fine and medium grained, occasional thin		T	S2	7,13,16 N=29	14.0	
10	80	ML/ SP	Olive gray to gray SILT and SAND, interbed trace oxidation stain, sand is very fine and fit			S3	6,16,19 N=35	22.1	
10 -		ML/ SP	As above, medium dense, weak hydrocarbor	ı odor.		S4	6,10,18 N=28	28.1	
15	·	ML/ SP	As above, but predominantly sand, fine and hydrocarbon odor.	medium grained,		S 5	9,16,28 N=44	9.0	
		ML/ SP	As above, dense, frequent olive to olive gray hydrocarbon odor.	silt layers,		S6	8,17,25 N=42	17.5	
-	70			,	1				
20 _		ML/ SM	Olive to olive gray SILT and SILTY SAND to moist, dense, sand is fine and medium gra layers do not contain fines, light oxidation st odor.	ined, some sand		S7	5,14,22 N=36	19.4	
25 <u> </u>		ML/ SM	As above, sand is fine grained, wet lens of cl	ean sand 2" thick.		S8	10,16,22 N=38	30.2	
30	60	SM	Olive to olive brown SILTY SAND, damp, of stain, sand is very fine grained.	dense, trace oxidation	I	S9	6,13,19 N=32	26.6	
35	50	ML/ SM	Olive brown and olive gray SILT and SILTY dense, sand is fine grained, light oxidation st grained sand lenses 1" thick.		T	S10	8,22,25 N=47	19.9	
40			······································						
LEGE	ND:	I	2" O.D. Split-Spoon Sampler 3" O.D. Dames & Moore Sampler 3.25" O.D. Dames & Moore Sampler		SPT = 3		d Penetration 1 evel during dri		<u> </u>
	GE(7	Group Northwest, Inc. Geotechnical Engineers, Geologists, & Environmental Scientists		SEV 70	ENTI 01 S. J.	ING I HAVENUE : ACKSON S' LE, WASHII	SERVICE TREET	
				JOB NO. G-0	260		DATE	2/13/06	PLATE A6

BORING NO. B-3											Pa	ige 2 of	2
L	.ogge	ed By:	KJ Date D	rilled:	2/1/06				Sur	face Elev.	89	feet	
Depth			<u>-</u> ,				Sam		Blow Counts per 6"	Water Content %	Con	nments	
.ft.	ft.	Code SM	Olive SILTY SAND, damp, very detail and fine grained.	nse, sand	d is very fir	ne	Туре	No. S11	11,26,32 N=58	19.2		_	
45			Bottom of boring: 41 feet. Drilling Method: Hollow-stem auger. Sampling Method: 2-inch-O.D. SPT lb. hammer with a 30-inch drop.		driven usir	ng a 140				ļ			
50 _ _			Groundwater not encountered during encountered.	drilling.	No fill							•	
- - 55		-											
³³ –											F		
60 _													
65 _										•			,
70 _ -													-
75													·
80													
LEGE	ND:		2" O.D. Split-Spoon Sampler 3" O.D. Dames & Moore Sampler 3.25" O.D. Dames & Moore Sampler						d Penetration				
	GE(₹ `	Group Northwest, Inc. Geotechnical Engineers, Geologists, &	- -			SEV 70	ENTE 01 S. J.	ING I AVENUE : ACKSON S JE, WASHI	SERVICE IREET			
			Environmental Scientists	.	JOB NO.	. G-0				2/13/06	PI.	ATE.	Δ7

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Page 1 of 2

KJ Logged By: Date Drilled: 2/2/06 Surface Elev. 85 feet Blow Water Sample Comments Counts per Content Depth El. USCS Description 6" ft. ft. Code Type No. Asphalt (3" to 4" thick), concrete slab exposed in borehole side. Olive brown SILT and SILTY SAND, damp to moist, loose, ML/ 1,2,1 SI 26.8 occas. gravel in sample (DISTURBED NATIVE SOIL). SM N=3 80 As above, damp, medium dense, mostly silty sand layers, sand is ML/ 2,5,8 S2 fine and medium grained, occasional clean sand lenses (NATIVE 14.1 SM N=13Olive brown SILTY SAND and gray SAND, interbedded, damp SM/ 4,11,18 S3 13.3 to moist, medium dense, trace oxidation stain, sand is fine and SP N=29 medium grained, hydrocarbon odor. 10 4,12,19 S4 ML Gray SILT and SAND, interbedded, damp, dense, sand is fine N=31 SP and medium grained, hydrocarbon odor, 5,10,18 ML Gray SILT, damp dense, occasional fine sand laminae and thin **S**5 29.6 N=28 lenses, weak hydrocarbon odor. 15 70 5,10,11 ML/ **S6** Gray SILT and SILTY SAND, interbedded, damp, dense, lesser 22.5 N=21 SM sand layers, sand is fine grained, weak hydrocarbon odor. ML Gray SILT, damp, medium dense, occasional fine sand laminae 5,10,15 S7 24.6 N=25 20 and thin lenses, no hydrocarbon odor. ML/ Olive gray SANDY SILT and SILTY SAND, thinly interbedded, 8,12,17 S8 22.3 damp, medium dense, sand is very fine and fine grained, trace N=29 25 60 SM oxidation stain, rare clean sand lenses 2" thick, no hydrocarbon odor. Olive SILTY SAND and SAND, interbedded, damp, very dense, SM/ S9 5,22,33 16.8 N=55 30 SP sand is very fine and fine grained. SP 8,19,21 S10 Olive gray SAND, dry to damp, dense, fine grained, massive. 3.5 N = 4035 50 7,17,17 SP As above, but with some very fine grained sand. S11 3.6 N=34 LEGEND: 2" O.D. Split-Spoon Sampler SPT = Standard Penetration Test 3" O.D. Dames & Moore Sampler water level during drilling 3.25" O.D. Dames & Moore Sampler **BORING LOG** Group Northwest, Inc. SEVENTH AVENUE SERVICE 701 S. JACKSON STREET Geotechnical Engineers, Geologists, & SEATTLE, WASHINGTON **Environmental Scientists** JOB NO. G-0260 DATE 2/13/06 **PLATE**

Page 2 of 2

Logged By: KJ Date Drilled: 2/2/06 Surface Elev. 85 feet Blow Water Sample Comments Counts per Content Depth El. USCS Description -6" % ft. ft. Code Туре No. Bottom of boring: 39.5 feet. Drilling Method: Hollow-stem auger. Sampling Method: 2-inch-O.D. SPT sampler driven using a 140 lb. hammer with a 30-inch drop. 45 Groundwater not encountered during drilling. No fill encountered. 50 55 65 75 80 LEGEND: T 2" O.D. Split-Spoon Sampler SPT = Standard Penetration Test 3" O.D. Dames & Moore Sampler water level during drilling 3.25" O.D. Dames & Moore Sampler **BORING LOG** Group Northwest, Inc. **GEO** SEVENTH AVENUE SERVICE 701 S. JACKSON STREET Geotechnical Engineers, Geologists, & SEATTLE, WASHINGTON **Environmental Scientists**

JOB NO.

G-0260

DATE

2/13/06

PLATE

A9



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

February 15, 2006

Keith Johnson GEO Group Northwest, Inc. 13240 NE 20th Street, Suite 10 Bellevue, WA 98005

Re:

Analytical Data for Project E-0260 Laboratory Reference No. 0602-029

Dear Keith:

Enclosed are the analytical results and associated quality control data for samples submitted on February 2, 2006.

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

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

Sincerely,

David Baumeister Project Manager

Enclosures

Project: E-0260

Case Narrative

Samples were collected on February 1 and 2, 2006 and received by the laboratory on February 2, 2006. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

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

NWTPH Dx Analysis

The Diesel Fuel results reported for samples B-1 12.5' and B-4 14' are being impacted by the presence of Gasoline Range Hydrocarbons.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Volatiles EPA 8260B Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

The value reported for 1,2,4-Trimethylbenzene for sample B-4 14' exceeds the quantitation range and is therefore an estimate.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

NWTPH-G/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

For sample B-4 14', the NWTPH-Gx result did not correlate with the NWTPH-Dx and EPA 8260B results. Therefore, sample B-4 14' was re-analyzed using the EPA 8260B VOA vial instead of the NWTPH-Gx VOA vial.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Project: E-0260

NWTPH-Gx/BTEX

Date Extracted: Date Analyzed:

2-3-06 2-6-06

Matrix: Soil

Units: mg/kg (ppm)

Client ID:

B-1 5'

Lab ID:

02-029-01

B-1 12.5'

02-029-02

	Result	Flags	PQL	Result	Flags	PQL
Benzene	ND		0.020	17		0.24
Toluene	ND		0.047	7.2		1.2
Ethyl Benzene	ND		0.047	210	E ,	1.2
m,p-Xylene	0.061		0.047	700	E	1.2
o-Xylene	ND		0.047	160	E	1.2
TPH-Gas	16		4.7	12000		120
Surrogate Recovery: Fluorobenzene	74%			101%		

Project: E-0260

NWTPH-Gx/BTEX

Date Extracted: Date Analyzed:

2-3-06 2-3&6-06

Matrix: Soil

Units: mg/kg (ppm)

Client ID: Lab ID: B-3 10'

02-029-03

B-3 12.5'

02-029-04

	Result	Flags	PQL	Result	Flags	PQL
Benzene	1.8		0.022			
Toluene	4.5		0.11			
Ethyl Benzene	12		1.1			
m,p-Xylene	27		1.1			
o-Xylene	8.4		0.11	-		
TPH-Gas	1300		110	ND		13
Surrogate Recovery: Fluorobenzene	89%			86%		

Project: E-0260

NWTPH-Gx/BTEX

Date Extracted:

2-3-06

Date Analyzed:

2-3&14-06

Matrix: Soil

Units: mg/kg (ppm)

Client ID:

B-4 9'

B-4 14'

Lab ID:

02-029-06

02-029-07

	Result	Flags	PQL	Result	Flags	PQL
Benzene	0.38		0.021			
Toluene	0.21		0.10			,
Ethyl Benzene	0.12		0.10			
m,p-Xylene	0.19		0.10			
o-Xylene	ND		0.10			
TPH-Gas	ND		10	8300		110
Surrogate Recovery: Fluorobenzene	79%			92%	•	

Project: E-0260

NWTPH-Gx/BTEX METHOD BLANK QUALITY CONTROL

Date Extracted:

2-3-06 2-3-06

Date Analyzed:

Matrix: Soil

Units: mg/kg (ppm)

Lab ID:

MB0203S1

	Result	Flags	PQL
Benzene	ND		0.020
Toluene	ND		0.050
Ethyl Benzene	ND		0.050
m,p-Xylene	ND		0.050
o-Xylene	ND		0.050
TPH-Gas	ND		5.0
Surrogate Recovery: Fluorobenzene	86%		<u>.</u>

Project: E-0260

NWTPH-Gx/BTEX DUPLICATE QUALITY CONTROL

Date Extracted:

2-3-06

Date Analyzed:

2-3-06

Matrix: Soil

Units: mg/kg (ppm)

Lab ID:	02-020-02 Original	02-020-02 Duplicate	RPD	Flags
Benzene	ND	ND	NA	
Toluene	ND	ND	NA	
Ethyl Benzene	ND	ND	NA	
m,p-Xylene	ND	ND	NA	
o-Xylene	ND	ND	NA	
TPH-Gas	ND	ND	NA	
Surrogate Recovery: Fluorobenzene	69%	68%		

Project: E-0260

NWTPH-Gx/BTEX MS/MSD QUALITY CONTROL

Date Extracted:

2-3-06

Date Analyzed:

2-3-06

Matrix: Soil

Units: mg/kg (ppm)

Spike Level (ppm):

2.50

Lab ID:	02-020-01 MS	Percent Recovery	02-020-01 MSD	Percent Recovery	RPD	Flags
Benzene	8.40	78	8.41	78	. 0	
Toluene	10.3	77	10.3	78	0	
Ethyl Benzene	2.51	94	2.46	92	. 2	
m,p-Xylene	2.69	93	2.65	91	2	
o-Xylene	2.55	94	2.51	92	2	

Surrogate Recovery:

Fluorobenzene

75%

76%

Project: E-0260

NWTPH-Dx

Date Extracted:
Date Analyzed:

2-7-06 2-7-06

Matrix:

Soil

Units:

mg/kg (ppm)

Client ID: B-1 5' B-1 12.5' B-3 10' Lab ID: 02-029-01 02-029-02 02-029-03 Diesel Range: ND 560 ND PQL: 28 31 30 Identification: Diesel Fuel#2 Lube Oil Range: ND ND ND PQL: 62 57 60 Identification: Surrogate Recovery o-Terphenyl: 84% 98% 112% Flags: Y Y,Z Y

NWTPH-Dx

Date Extracted: Date Analyzed:

2-7-06 2-7-06

Matrix:

Soil

Units:

mg/kg (ppm)

Client ID:	B-3 12.5'	B-4 9'	B-4 14'
Lab ID:	02-029-04	02-029-06	02-029-07
	÷.		
Diesel Range:	ND	ND	. 280
PQL:	27	28	31
	~ !	20	01
Identification:		deplies to	Diesel Fuel#2
Lube Oil Range:	ND	ND	ND
PQL:	54	55	62
Identification:			
Surrogate Recovery			
o-Terphenyl:	106%	112%	119%
Flags:	Υ	Υ	Y,Z

Project: E-0260

NWTPH-Dx METHOD BLANK QUALITY CONTROL

Date Extracted: 2-7-06
Date Analyzed: 2-7-06

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

MB0207S2

Diesel Range:

ND

PQL:

25

Identification:

__

Lube Oil Range:

ND

PQL:

50

Identification:

Surrogate Recovery

o-Terphenyi:

100%

Flags:

Y

Project: E-0260

NWTPH-Dx DUPLICATE QUALITY CONTROL

Date Extracted: 2-7-06
Date Analyzed: 2-7-06

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

02-040-01

02-040-01 DUP

Diesel Range:

10500

11200

PQL:

1300

1300

RPD: .

7

Surrogate Recovery

o-Terphenyl:

__

Flags:

Y,S

Y,S

Project: E-0260

VOLATILES by EPA 8260B

Page 1 of 2

Date Extracted: 2-3-06 Date Analyzed: 2-3-06

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

02-029-04

Client ID: B-3 12.5'

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.057
Chloromethane	ND		0.057
Vinyl Chloride	ND		0.057
Bromomethane	ND		0.057
Chloroethane	ND		0.057
Trichlorofluoromethane	ND		0.057
1,1-Dichloroethene	ND		0.057
Acetone	ND		0.28
lodomethane	ND		0.28
Carbon Disulfide	ND		0.057
Methylene Chloride	ND		0.28
(trans) 1,2-Dichloroethene	ND		0.057
Methyl t-Butyl Ether	ND		0.057
1,1-Dichloroethane	ND		0.057
Vinyl Acetate	ND		0.28
2,2-Dichloropropane	ND		0.057
(cis) 1,2-Dichloroethene	ND		0.057
2-Butanone	ND		0.28
Bromochloromethane	ND		0.057
Chloroform	ND		0.057
1,1,1-Trichloroethane	ND		0.057
Carbon Tetrachloride	ND		0.057
1,1-Dichloropropene	ND		0.057
Benzene	0.093		0.057
1,2-Dichloroethane	ND		0.057
Trichloroethene	ND		0.057
1,2-Dichloropropane	ND		0.057
Dibromomethane	ND	٠	0.057
Bromodichloromethane	ND		0.057
2-Chloroethyl Vinyl Ether	ND		0.28
(cis) 1,3-Dichloropropene	ND		0.057
Methyl Isobutyl Ketone	ND		0.28
Toluene	0.39		0.057
(trans) 1,3-Dichloropropene	ND		0.057

VOLATILES by EPA 8260B Page 2 of 2

Lab ID: 02-029-04 Client ID: B-3 12.5'

Compound	Resuits	Flags	PQL
1,1,2-Trichloroethane	ND	_	0.057
Tetrachloroethene	ND		0.057
1,3-Dichloropropane	ND		0.057
2-Hexanone	ND		0.28
Dibromochloromethane	ND		0.057
1,2-Dibromoethane	ND		0.057
Chlorobenzene	ND		0.057
1,1,1,2-Tetrachloroethane	ND		0.057
Ethylbenzene	0.19		0.057
m,p-Xylene	0.72		0.11
o-Xylene	0.36		0.057
Styrene	ND		0.057
Bromoform	ND		0.057
isopropylbenzene	ND		0.057
Bromobenzene	ND		0.057
1,1,2,2-Tetrachloroethane	ND		0.057
1,2,3-Trichloropropane	ND	•	0.057
n-Propylbenzene	ND		0.057
2-Chlorotoluene	ND		0.057
4-Chlorotoluene	ND		0.057
1,3,5-Trimethylbenzene	0.091		0.057
tert-Butylbenzene	ND		0.057
1,2,4-Trimethylbenzene	0.31		0.057
sec-Butylbenzene	ND		0.057
1,3-Dichlorobenzene	ND		0.057
p-isopropyitoluene	^ ND	•	0.057
1,4-Dichlorobenzene	ND		0.057
1,2-Dichlorobenzene	ND		0.057
n-Butylbenzene	ND		0.057
1,2-Dibromo-3-chloropropane	ND		0.28
1,2,4-Trichlorobenzene	ND		0.057
Hexachlorobutadiene	ND		0.28
Naphthalene	ND		0.057
1,2,3-Trichlorobenzene	, ND		0.057

	Percent	Control
Surrogate	Recovery	Limits
Dibromofluoromethane	98	71-126
. Toluene, d8	99	73-130
4-Bromofluorobenzene	110	70-130

Project: E-0260

VOLATILES by EPA 8260B Page 1 of 2

Date Extracted: Date Analyzed:

2-3-06 2-3-06

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

02-029-07

Client ID:

B-4 14'

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND ·		1.1
Chloromethane	ND		1.1
Vinyl Chloride	ND	•	1.1
Bromomethane	ND		1.1
Chloroethane	NĎ		1.1
Trichlorofluoromethane	ND		1.1
1,1-Dichloroethene	ND		1.1
Acetone	ND		5.7
Iodomethane	ND		5.7
Carbon Disulfide	ND		1.1
Methylene Chloride	ND		5.7
(trans) 1,2-Dichloroethene	ND		1.1
Methyl t-Butyl Ether	ND		1.1
1,1-Dichloroethane	ND		1.1
Vinyl Acetate	МD		5.7
2,2-Dichloropropane	ND		1.1
(cis) 1,2-Dichloroethene	ND	•	1.1
2-Butanone	ND		5.7
Bromochloromethane	ND		1.1
Chloroform	ND		1.1
1,1,1-Trichloroethane	ND		1.1
Carbon Tetrachloride	ND		1.1
1,1-Dichloropropene	ND		1.1
Benzene	15		1.1
1,2-Dichloroethane	ND		1.1
Trichloroethene	ND		1.1
1,2-Dichloropropane	ND		1.1
Dibromomethane	ND	•	1.1
Bromodichloromethane	ND		1.1
2-Chloroethyl Vinyl Ether	ND		5.7
(cis) 1,3-Dichloropropene	ND		1.1
Methyl Isobutyl Ketone	ND		5.7
Toluene	35	•	1.1
(trans) 1,3-Dichloropropene	ND		1.1

Project: E-0260

VOLATILES by EPA 8260B Page 2 of 2

Lab ID: 02-029-07 Client ID: B-4 14'

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND	J	1.1
Tetrachloroethene	ND		1.1
1,3-Dichloropropane	ND		1.1
2-Hexanone	ND		5.7
Dibromochloromethane	ND		1.1
1,2-Dibromoethane	ND		1.1
Chlorobenzene	ND		1.1
1,1,1,2-Tetrachloroethane	ND		1.1
Ethylbenzene	100		1.1
m,p-Xylene	330		2.3
o-Xylene	110		1.1
Styrene	ND		- 1.1
Bromoform	ND		1.1
Isopropylbenzene	18		1.1
Bromobenzene	ND		1.1
1,1,2,2-Tetrachloroethane	ND		1.1
1,2,3-Trichloropropane	ND		1.1
n-Propylbenzene	69		1.1
2-Chlorotoluene	ND		1.1
4-Chlorotoluene	ND		1.1
1,3,5-Trimethylbenzene	120		1.1
tert-Butylbenzene	ND		1.1
1,2,4-Trimethylbenzene	290	E	1.1
sec-Butylbenzene	11		1.1
1,3-Dichlorobenzene	ND		1.1
p-Isopropyltoluene	5.5	•	1.1
1,4-Dichlorobenzene	ND		1.1
1,2-Dichlorobenzene	ND		1.1
n-Butylbenzene	31		1.1
1,2-Dibromo-3-chloropropane	ND		5.7
1,2,4-Trichlorobenzene	ND		1.1
Hexachlorobutadiene	ND		5.7
Naphthalene	33		1.1
1,2,3-Trichlorobenzene	ND		1.1

	Percent	Control
Surrogate	Recovery	Limits
Dibromofluoromethane	99	71-126
. Toluene, d8	89	73-130
4-Bromofluorobenzene	104	70-130

Project: E-0260

VOLATILES by EPA 8260B METHOD BLANK QUALITY CONTROL

Page 1 of 2

Date Extracted:

2-3-06

Date Analyzed:

2-3-06

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

MB0203S1

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

~...

Date of Report: February 15, 2006 Samples Submitted: February 2, 2006 Laboratory Reference: 0602-029

Project: E-0260

VOLATILES by EPA 8260B METHOD BLANK QUALITY CONTROL

Page 2 of 2

Lab ID:

MB0203S1

O	Describe	Place	DO1
Compound 1,1,2-Trichloroethane	Results ND	Flags	PQL 0.0010
Tetrachloroethene	ND		0.0010
	ND ND		0.0010
1,3-Dichloropropane 2-Hexanone	ND ND		0.0010
Dibromochloromethane	ND		0.0030
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
• • •	ND ND		0.0010
Ethylbenzene	ND ND		0.0010
m,p-Xylene			0.0020 0.0010
o-Xylene	ND ND		0.0010
Styrene Bromoform	ND .		0.0010
Isopropylbenzene	ND ND	-	0.0010
Bromobenzene			0.0010
1,1,2,2-Tetrachloroethane	ND ND		0.0010 0.0010
1,2,3-Trichloropropane			0.0010
n-Propylbenzene	ND ND		
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND ND		0.0010 0.0010
1,3,5-Trimethylbenzene			
tert-Butylbenzene	ND ND		0.0010
1,2,4-Trimethylbenzene	ND		0.0010
sec-Butylbenzene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
p-isopropyltoluene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
n-Butylbenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND ND		0.0050
1,2,4-Trichlorobenzene Hexachlorobutadiene	ND ND		0.0010 0.0050
	ND ND		0.0050
Naphthalene	ND ND		0.0010
1,2,3-Trichlorobenzene	י ואון		0.0010

	Percent	Control					
Surrogate	Recovery	Limits					
Dibromofluoromethane	91	71-126					
Toluene, d8	101	73-130					
4-Bromofluorobenzene	109	70-130					

Project: E-0260

VOLATILES by EPA 8260B SB/SBD QUALITY CONTROL

Date Extracted:

2-3-06

Date Analyzed:

2-3-06

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

SB0203S1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	0.0500	0.0492	98	0.0472	94	70-130	
Benzene	0.0500	0.0488	98	0.0464	93	70-130	
Trichloroethene	0.0500	0.0506	101	0.0474	95	70-130	
Toluene	0.0500	0.0503	101	0.0458	92	70-130	
Chlorobenzene	0.0500	0.0511	102	0.0482	96	70-130	

		RPD	
	RPD	Limit	Flags
1,1-Dichloroethene	4	11	
Benzene	5	11	
Trichloroethene	7	13	
Toluene	9	11	
Chlorobenzene	6	12	

% MOISTURE

Date Analyzed:

2-3-06

Client ID	Lab ID	% Moisture				
B-1 5'	02-029-01	12				
B-1 12.5'	02-029-02	19				
B-3 10'	02-029-03	17				
B-3 12.5'	02-029-04	8				
B-4 9'	02-029-06	9				
B-4 14'	02-029-07	19				



Data Qualifiers and Abbreviations

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E The value reported exceeds the quantitation range and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- G Insufficient sample quantity for duplicate analysis.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- O Hydrocarbons indicative of diesel fuel are present in the sample and are impacting the gasoline result.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical _____
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a silica gel cleanup procedure.
- Y Sample extract treated with an acid/silica gel cleanup procedure.
- Z The Diesel Range result is being impacted by the presence of Gasoline Range Hydrocarbons.
- ND Not Detected at PQL
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference

OnSite		Cl	Chain of Custody Page / of /																				
Environmental Inc. 14848 NE 95th Street • Redmond, WA 98052		Turnaround Request (in working days)			Laboratory Number:									02-029									
Phone: (425) 883-3881 • Fax: (425) 885-4803 Company: GEO Group Northwest Inc Project Number:		(Check One)			(Check One)							Requested Analysis											
Project Number: E- 02-60 Project Name:		mė Day		1 Day					8260B				<u> </u>										
701 St Jackson St., Seattle, WA Project Manager: Keith Johnson	☐ 2 C	oay andard (7 w		3 Day ays)		×		89	Halogenated Volatiles by 8260B	8270C	/ SIM		81A	151A	tals (8)								
Sampled by: Keith Johnson	-	(ot	her)		WMTPH-HCID	NWTPH-GX/BTEX	ă	Volatiles by 8260B	nated Vo	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	fotal RCRA Metals (8)	Vetals	y 1664					٩	sture
	Date Sampled	Time Sampled	Matrix		NWTP	NWTP	NWTPH-Dx	Votatile	Haloge	Semivo	PAHs b	PCBs t	Pesticic	Herbici	Total R	TCLP Metals	HEM by 1664	VPH	표			Ногъ	% Moisture
1 B-1 5'	2/1/06	19130	Soil	1 40x		X	X				·												メ
Z B-1 12.5'	2/1/06	10:20	Soil	".		X	X												·				X
3 8-3 10'	2/1/06	3:10,	Soil	"		X	Х																×
4 B-3 12.5'	2/1/06	3115	Soil	2 VOA 1 402		×	X	X															X
5 B-4 7.5'	2/2/06	8:30	Soil	11 11																		X	
6 B-4 9'	2/2/08	9:00	Sil	1 40A 1 402		X	Х																×
7 8-4 14'	2/2/06	9:40	Spil	2 VOA 1 402		X	メ	X						ļ									X
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Signature		Company				Date			Time			Con	meni	s/Spe	cial I	nstruc	tions						
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Received by																							

Chromatograms with final report

Reviewed by/Date

ION : W

Reviewed by/Date