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Consulting Engineers

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October 19 2011 File: PE2357-LET.01

Claridge Homes

2001 - 210 Gladstone Avenue Ottawa, Ontario K2P 0Y6 Geotechnical Engineering Environmental Engineering Hydrogeology Geological Engineering Materials Testing Building Science

www.patersongroup.ca

Attention: Mr. Neil Malhotra

Subject: Supplemental Phase II - Environmental Site Assessment Existing Commercial Property 175 Richmond Road - Ottawa

Dear Sir,

Further to your request and authorization, Paterson Group (Paterson) carried out a supplemental Phase II - Environmental Site Assessment (ESA) program at the aforementioned site. The results of the Supplemental Phase II - ESA are summarized in the following report.

1.0 Background Information

The subject site is located on the west side of Kirkwood Avenue, between Richmond Road and Wilber Avenue in the City of Ottawa, Ontario. The subject property is currently occupied by a two to three (2 to 3) storey commercial structure with a partial basement level. The subject building occupies the majority of the site while small parking areas are located in the northern, southern and western portions of the site. The neighbouring properties are either commercial or residential land. Mr. Neil Malhotra Page 2 File: PE2357-LET.01

2.0 Previous Engineering Report

Paterson previously conducted a Phase I-II ESA on the subject property in November of 2009. At that time, a total of six (6) boreholes were advanced at selected locations on the subject property. The boreholes were placed in areas to address potential environmental concerns with the subject site as well as the neighbouring property to the south (190 Richmond Road) which was a former printing facility. The potential on-site concerns included the former underground furnace oil storage tank in the eastern portion of the subject site, and the former use of the site by General Electric as a manufacturing facility.

Based on soil and groundwater analytical testing, one of the above noted potential concerns was determined to have impacted the subject property. Soil samples obtained from the former underground furnace oil storage tank location in the eastern portion of the property identified petroleum hydrocarbon concentrations in excess of the applicable MOE standards.

As a result of the above noted identified contaminated soil, it was recommended that a supplemental Phase II - ESA be conducted on the subject property. The purpose of the supplemental Phase II - ESA was to delineate the area of previously identified soil contamination and to analyse the groundwater in the area of the former on-site underground furnace oil storage tank.

3.0 Subsurface Investigation

As part of the field program, seven (7) boreholes were placed on the subject property on May 30 and June 8, 2011. The boreholes were conducted by means of a truck mounted drill rig under the full time supervision of Paterson personnel. The boreholes, which were numbered BH1 to BH7, were terminated at depths ranging from 3.4 to 7.3 m below the existing ground surface. Practical auger refusal was encountered in all boreholes. The inferred bedrock was cored in BH6 to ensure that the groundwater table would be intercepted. Three of the boreholes (BH4, BH6 and BH7) were instrumented with groundwater monitoring well installations. The borehole locations are illustrated on the enclosed test hole location plan. The depths at which the split spoon and auger samples were obtained from the test holes are shown as **"SS"** and **"AU"** on the Soil Profile and Test Data sheets enclosed in this report.

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Subsurface Profile

The soil profile encountered consisted of a layer of asphaltic concrete underlain by a layer of granular fill followed by native glacial till which was overlying bedrock. The fill consisted of silty sand gravel. The fill depth ranged from 0.3 to 0.7 m below the existing grade in all boreholes with one exception. The silty sand fill layer extended to 3 m in BH3, which is in the former underground furnace oil storage tank location. The specific details of the soil profile at each test hole location are presented on the enclosed Soil Profile and Test Data sheets.

Monitoring Well Installation

Groundwater monitoring wells were installed in BH4, BH6 and BH7, the location of these boreholes can be seen on the enclosed test hole location plan. Typical monitoring well construction details are described below:

- Slotted 50 mm diameter PVC screen at base of borehole.
- **5**0 mm diameter PVC riser pipe from the top of the screen to ground surface.
- □ No.3 silica sand backfill within annular space around screen.
- **300** mm thick bentonite hole plug directly above PVC slotted screen.
- Clean backfill from top of bentonite plug to the ground surface.

Refer to the Soil Profile and Test Data sheets attached for the actual well construction in BH4, BH6 and BH7.

Soil Sampling Protocol

A total of 43 soil samples were recovered from the test holes by means of stainless steel split spoon or auger sampling. Upon recovery, all samples were immediately sealed in appropriate containers to facilitate a preliminary screening procedure. It should be noted that visual and olfactory observations made regarding the soil samples obtained from BH3 and BH4, in the area of the former underground storage tank nest, identified the potential for petroleum hydrocarbon contamination. No unusual visual or olfactory observations were made regarding soil samples obtained from the remaining boreholes.

All samples recovered as part of this investigation will be stored in the laboratory for a period of one (1) month after issuance of this report. All samples will then be discarded unless this firm is otherwise directed.

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Soil Sample Headspace Analysis

The technical protocol was obtained from Appendix C of the MOE document titled "Interim Guidelines for the Remediation of Petroleum Contamination at Operating Retail and Private Fuel Outlets in Ontario", dated March 1992.

Soil samples recovered at the time of sampling were placed immediately into airtight plastic bags with nominal headspace. All lumps of soil inside the bags were broken by hand, and the soil was allowed to come to room temperature prior to conducting the vapour survey. Allowing the samples to stabilize to room temperature ensures consistency of readings between samples.

To measure the soil vapours, the analyser probe is inserted into the nominal headspace above the soil sample. An RKI Eagle (gastech) with methane elimination and calibrated to hexane was used for this purpose. The sample is agitated/manipulated gently as the measurement is taken. The peak reading registered within the first 15 seconds is recorded as the vapour measurement.

The parts per million (ppm) scale is used to measure concentrations of hydrocarbon vapours that are too low to register on the Lower Explosive Limit (LEL) scale. The explosive point, 100% LEL, represents the leanest mixture which will burn (or explode) if ignited.

The combustible vapour readings were found to range from 0 to 15 ppm in BH1, BH2, BH5, BH6 and BH7. These readings are not considered to be indicative of the presence of significant petroleum hydrocarbon (furnace oil) contamination. However, the combustible vapour readings obtained in BH3 and BH4, (up to 1.7% LEL), are considered to be indicative of petroleum hydrocarbon impact. It should be noted that the vapour results can not be used to identify the presence of heavier petroleum hydrocarbons such as heavy oil. However, heavy oils are not expected to be a concern on the subject site. Please refer to the Soil Profile and Test Data sheets attached for soil sample headspace results.

Groundwater

A return visit to the site was conducted on June 20, 2011 to obtain a stabilized groundwater level and to sample the groundwater from BH4, BH6 and BH7. The groundwater levels in the monitoring wells were found to range from 2.3 to 2.6 m below the existing ground surface. The groundwater level in our previously installed monitoring well (BH1) was also obtained on June 20, 2011. The groundwater level in this borehole was found to be 4.1 m below the existing ground surface. It should be noted that groundwater levels are

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expected to fluctuate throughout the year with seasonal variations. Visual and olfactory observations noted with the groundwater obtained from BH4 indicated the potential for petroleum hydrocarbon contamination. No unusual visual or olfactory observations were noted regarding the groundwater sampled from BH6 and BH7.

4.0_Analytical Test Results

Remediation Standards

The remediation standards for the subject property were obtained from Table 3 of the document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", prepared by the Ontario Ministry of Environment (MOE), July 27, 2009. The MOE Table 3 Standards are based on the following considerations:

- Coarse grained soil conditions.
- Surface soil and groundwater conditions.
- □ Non-potable groundwater situation.
- Residential land use.

Paracel Laboratories (Paracel) of Ottawa, performed the laboratory analysis of the samples submitted for analytical testing. Paracel is a member of the Standards Council of Canada/Canadian Association for Environmental Analytical Laboratories (SCC/CAEAL). Paracel is accredited and certified by SCC/CAEAL for specific tests registered with the association.

Soil

Five (5) soil samples were submitted to Paracel Laboratories for petroleum hydrocarbons PHCs (Fractions 1 to 4) and benzene, toluene, ethylbenzene and xylenes (BTEX) analysis. A copy of the analytical test results is attached to this report.

Parameter	MDL		Sc	oil Sampl (µg/g)	es		Table 3 Standards Residential Land Use (µg/g)							
	(µg/g)	BH3 SS4												
Benzene	0.02	nd	nd	nd	nd	nd	0.21							
Ethylbenzene	0.05	0.26	<u>10.8</u>	nd	nd	nd	2.0							
Toluene	0.05	nd	nd	nd	nd	nd	2.3							
Xylenes (Total)	0.05	nd	<u>45.4</u>	nd	nd	nd	3.1							
F ₁ PHCs (C ₆ -C ₁₀)	10	<u>325</u>	<u>1,060</u>	nd	nd	nd	55							
F ₂ PHCs (C ₁₀ -C ₁₆)	10	<u>2,670</u>	<u>3,360</u>	nd	nd	nd	98							
F ₃ PHCs (C ₁₆ -C ₃₄)	10	<u>2,620</u>	<u>2,710</u>	nd	nd	nd	300							
F ₄ PHCs (C ₃₄ -C ₅₀)	10	nd	nd	PHCs (C ₃₄ -C ₅₀) 10 nd nd nd nd nd 2,800										

No detectable BTEX or PHC concentrations were identified in the soil sample analysed from BH5, BH6 and BH7. Several BTEX and PHC concentrations in excess of the MOE Table 3 standards were identified in the soil samples analysed from BH3 and BH4.

Groundwater

Groundwater samples were collected from the monitoring wells installed in BH4, BH6 and BH7 on June 20, 2011. The water samples were submitted for PHC and volatile organic compounds (VOCs) analysis. The results of the analytical testing, and the selected remediation standards are presented in Tables 2 and 3. A copy of the analytical test results is attached to this report.

Table 2 Analytical Test Results - Groundwater PHCs (Fractions 1 to 4)												
		Ground	lwater Samp	les (µg/L)	NOTING							
Parameter	MDL (ug/L)	BH4 GW1	Stanuarus (µg									
F1 PHCs (C ₆ -C ₁₀)	25	<u>3,770</u>	<u>3,770</u> nd nd 750									
F2 PHCs (C ₁₀ -C ₁₆)	100	46,500	nd	nd	150							
F3 PHCs (C ₁₆ -C ₃₄)	100	<u>27,900</u>	nd	nd	500							
F4 PHCs (C ₃₄ -C ₅₀)	100	nd	nd	nd	500							
Notes: Image: MDL - Method Detection Limit Image: Image: MDL - Not Detected (< MDL)												

No detectable PHC concentrations were identified in the groundwater samples obtained from BH6 and BH7. The PHC (F1, F2 and F3) concentrations identified in the groundwater sample obtained from BH4 were in excess of the MOE Table 3 standards. No detectable PHC (F4) concentration was identified in the groundwater sample obtained from BH4.

Table 3 Analytical Test Results - Groundwater Volatile Organic Compounds (VOCs)

Deremetere	MDL	Groundv	vater Sample	es (µg/L)	MOE Standards (µg/L)
Parameters	(µg/L)	BH4 GW1	BH6 GW1	BH7 GW1	Table 3
Acetone	5.0	72.6	nd	52.4	130,000
Benzene	0.5	32.4	nd	nd	44
Bromodichloromethane	0.5	nd	nd	nd	85,000
Bromoform	0.5	nd	nd	nd	380
Bromomethane	0.5	nd	nd	nd	5.6
Carbon Tetrachloride	0.5	nd	nd	nd	0.79
Chlorobenzene	0.5	nd	nd	nd	630
Chloroethane	1.0	nd	nd	nd	nv
Chloroform	0.5	nd	nd	nd	2.4
Chloromethane	3.0	nd	nd	nd	nv
Dibromochloromethane	0.5	nd	nd	nd	82,000
1,2 - Dibromoethane	0.2	nd	nd	nd	nv
m - Dichlorobenzene	0.5	nd	nd	nd	9,600
o - Dichlorobenzene	0.5	nd	nd	nd	4,600
p - Dichlorobenzene	0.5	nd	nd	nd	8
Dichlorodifluoromethane	0.5	nd	nd	nd	4,400
1,1-Dichloroethane	0.5	nd	nd	nd	320
1,2-Dichloroethane	0.5	nd	nd	nd	1.6
1,1-Dichloroethylene	0.5	nd	nd	nd	1.6
c-1,2-Dichloroethylene	0.5	nd	nd	nd	1.6
t-1,2-Dichloroethylene	1.0	nd	nd	nd	1.6
1,2-Dichloropropane	0.5	nd	nd	nd	16
c-1,3-Dichloropropene	0.5	nd	nd	nd	5.2
t-1,3-Dichloropropene	0.5	nd	nd	nd	0.2
Ethylbenzene	0.5	49.4	nd	nd	2,300
Methyl Ethyl Ketone	5.0	nd	nd	nd	470,000
Methyl Isobutyl Ketone	5.0	nd	nd	nd	140,000
Methyl tert-Butyl Ether	2.0	nd	nd	nd	190
Methylene Chloride	5.0	nd	nd	nd	610
Styrene	0.5	nd	nd	nd	1,300
1,1,1,2-tetrachloroethane	0.5	nd	nd	nd	3.4
1,1,2,2-tetrachloroethane	0.5	nd	nd	nd	3.2
nd - Not Def	od Detection tected (< MDI ent MOE star	_)			

Table 3 (continued) Analytical Test Results - Groundwater Volatile Organic Compounds (VOCs)

Demonsterne	MDL	Groundv	vater Sample	es (µg/L)	MOE Standards (µg/L)				
Parameters	(µg/L)	BH4 GW1	BH6 GW1	BH7 GW1	Table 3				
Tetrachloroethylene	0.5	nd	nd	nd	1.6				
Toluene	0.5	1.1	nd	nd	18,000				
1,1,1-Trichloroethane	0.5	nd	nd	nd	640				
1,1,2-Trichloroethane	0.5	nd	nd	nd	4.7				
Trichloroethylene	0.5	nd	nd	nd	1.6				
Trichlorofluoromethane	1.0	nd	nd	nd	2,500				
1,3,5-Trimethylbenzene	0.5	9.2	nd	nd	nv				
Vinyl Chloride	0.5	nd	nd	nd	0.5				
Total Xylenes	0.5	0.5 1,100 nd nd <i>4,200</i>							
nd - Not De	od Detection tected (< MDI rent MOE star	_)							

The analytical test results did not identify any VOC parameters in excess of the MOE Table 3 standards in the groundwater samples analysed.

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5.0 Assessment and Recommendations

Assessment

A supplemental Phase II - Environmental Site Assessment was carried out at 175 Richmond Road, in the City of Ottawa, Ontario. The purpose of the supplemental Phase II - ESA was to delineate the area of previously identified soil contamination and to analyse the groundwater in the area of the former on-site underground furnace oil storage tank.

Soil

Seven (7) boreholes were placed on the subject property on May 30 and June 8, 2011 at selected locations on the subject property. Visual and olfactory observations regarding the soil samples obtained from BH3 and BH4, in the area of the former underground storage tank nest, identified the potential for petroleum hydrocarbon contamination. Five (5) soil samples were submitted to Paracel Laboratories for PHC and BTEX analysis.

No detectable BTEX or PHC concentrations were identified in the soil samples analysed from BH5, BH6 and BH7. Several BTEX and PHC concentrations in excess of the MOE Table 3 standards were identified in the soil samples analysed from BH3 and BH4.

Water

Groundwater samples were collected from the monitoring wells installed in BH4, BH6 and BH7 on June 20, 2011. The water samples were submitted for PHC and volatile organic compounds (VOCs) analysis. It should be noted that visual and olfactory observations noted with the groundwater obtained from BH4 indicated the potential for petroleum hydrocarbon contamination.

No detectable PHC concentrations were identified in the groundwater samples obtained from BH6 and BH7. The PHC (F1, F2 and F3) concentrations identified in the groundwater sample obtained from BH4 were in excess of the MOE Table 3 standards. No detectable PHC (F4) concentration was identified in the ground water sample obtained from BH4.

The analytical test results did not identify any VOC parameters in excess of the MOE Table 3 standards in the groundwater samples analysed.

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Recommendations

Contaminated soil and groundwater were identified in the area of the former on-site underground storage tank nest, as indicated in the attached plan. It is recommended that a soil and groundwater remediation program be conducted in this area to remove and dispose of the soil and groundwater in excess of the MOE Table 3 standards. This could be done at the time of future site redevelopment as a means of reducing costs. The impacted soil must be disposed of at an approved waste disposal facility. It is also recommended that Paterson personnel be present at the time of the removal of the impacted soil and groundwater to provide direction and to obtain confirmatory samples upon the completion of the remediation program. Mr. Neil Malhotra Page 12 File: PE2357-LET.01

6.0 Statement of Limitations

The client should be aware that any information pertaining to soils and all test hole logs are furnished as a matter of general information only and test hole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those described by the test holes themselves.

This report was prepared for the use of Claridge Homes. Permission from Paterson and Claridge Homes will be required to release this report to any other party.

We trust that this submission will satisfy your present requirements. If you have any questions regarding this report, please contact our office.

Best Regards,

Paterson Group Inc.

Eric Leveque, B.A.

Carlos P. Da Silva, P.Eng

Report Distribution:

- Claridge Homes (3 copies)
- Paterson Group (1 copy)

Attachments:

- Soil Profile and Test Data Sheets
- Analytical Test Results
- Test Hole Location Plan



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SOIL PROFILE AND TEST DATA

Supplemental Ph. II - Environmental Site Assessment 175 Richmond Road

Monitoring Well Construction

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28 Concourse Gate, Unit 1, Ottawa, ON	I K2E 7	7T7			Ot	tawa, On	tario				
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									HOLE NO.	BH 1	
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SOIL DESCRIPTION	PLOT		SAN	IPLE	1	DEPTH	ELEV.		esist. Blows 0 mm Dia. C		
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FILL: Brown silty sand and crushed stone0.60		8 AU 8 7	1				2		······································	······································	
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sand with clay, gravel, cobbles and boulders		ss	6	42	5	4-	- 2		· · · · · · · · · · · · · · · · · · ·		****
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7.29						7-	-		······································	······································	ممعممهم
End of Borehole											
Practical refusal to augering @ 7.29m depth											
(GWL @ 4.11m-June 20/11)											
									200 300 ch 1314 Rdg as Resp. △ Me	. (ppm)	-1 600

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SOIL PROFILE AND TEST DATA

Supplemental Ph. II - Environmental Site Assessment

• Full Gas Resp. \triangle Methane Elim.

28 Concourse Gate, Unit 1, Ottawa, ON K2E 7T7						tawa, Oni					
DATUM TBM - Top spindle of fire hy and Clifton Road. Arbitrary	/drant elevat	locate ion = 1	d on t 00.00	he sou)m.	uthwes	st corner o	of Wilber	Avenue	FILE NO.	PE2357	,
REMARKS BORINGS BY CME 55 Power Auger				D	ATE (30 May 11	I		HOLE NO.	BH 2	
SOIL DESCRIPTION	PLOT		SAN	IPLE		DEPTH	ELEV.		esist. Blows 0 mm Dia. Co		Well
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Asphaltic concrete 0.10 FILL: Brown silty sand and gravel 0.60		AU	1			0-	-			· · · · · · · · · · · · · · · · · · ·	
		ss	2	58	18	1-	-		· • · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
GLACIAL TILL: Grey silty sand with gravel and cobbles		ss	3	50	43	2-	-	·····			¥
		ss	4	59	50+						
3.38	3					3-	_				
End of Borehole											
Practical refusal to augering @ 3.38m depth (GWL @ 2.15m-June 20/11)											
								100 Gasted	200 300 h 1314 Rdg.	400 50 . (ppm)	JÜ

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SOIL PROFILE AND TEST DATA

Gastech 1314 Rdg. (ppm) \blacktriangle Full Gas Resp. \triangle Methane Elim.

28 Concourse Gate, Unit 1, Ottawa,	1, Ottawa, ON K2E 7T7					175 Richmond Road Ottawa, Ontario						
and Clifton Road. Arbitra	ry elevat	locate ion = 1	d on t 100.00	ne sout)m.	hwes	t corner o	t Wilber	Avenue	FILE NO.	PE2357	7	
REMARKS BORINGS BY CME 55 Power Auger				DA	TE 8	3 Jun 11			HOLE NO	BH 3		
SOIL DESCRIPTION	РГОТ		SAN	IPLE		DEPTH	ELEV.		ows/0.3m . Cone	Well		
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GROUND SURFACE	N N		Z	RE	z ⁰	0	00.60	20	40 6	0 80	ΣŬ	
FILL: Crushed stone	.08	& AU	1			0-	-99.63				****	
		ss	2	58	5	1-	-98.63 _		•••••••••••••••			
FILL: Brown silty sand		ss	3	25	1	2-	-97.63				¥	
2	.97	ss	4	33	1	3-	-96.63		····			
GLACIAL TILL: Compact to dense, grey silty sand with gravel, cobbles and boulders		ss	5	67	24				····	······································		
4 End of Borehole	.04 ^^^^	∦ ss	6		50+	4-	-95.63			······································		
Practical refusal to augering @ 4.04m depth												
(GWL @ 2.04m-June 20/11)												
								100	200 30	0 400 5	00	

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SOIL PROFILE AND TEST DATA

Gastech 1314 Rdg. (ppm) \blacktriangle Full Gas Resp. \bigtriangleup Methane Elim.

28 Concourse Gate, Unit 1, Ottawa, Ol	7T7	Ling	175 Richmond Road Ottawa, Ontario						nmental Site Assessment			
DATUM TBM - Top spindle of fire hy and Clifton Road. Arbitrary	ydrant elevat	locate ion = 1	d on t 00.00	he sou)m.				Avenue	FILE	NO.	PE235	7
				-	***	0 1			HOLI	E NO.	BH 4	
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	STRATA	ТҮРЕ	NUMBER	% RECOVERY	N VALUE or RQD				-		Limit %	Monitoring Well Construction
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Trushed stone 0.30		AU AU	1 2						••••••		· · · · · · · · · · · · · · · · · · ·	
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GLACIAL TILL: Compact to dense, brown silty sand with gravel, cobbles and boulders		ss	4	67	19	2-	-97.60			· · · · · · · · · · · · · · · · · · ·		
- grey by 2.2m depth		ss	5	58	23							▼ 750 11111
		ss	6	54	32	3-	-96.60		······	<u>م</u>		
3.99	9\^^^^ 	ss	7		50+				•••••••			
Practical refusal to augering @ 3.99m depth												
(GWL @ 2.33m-June 20/11)												
								100	200	300	400 5	⊣ 500

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EngineersSOIL PROFILE AND TEST DATASupplemental Ph. II - Environmental Site Assessment

Full Gas Resp. \triangle Methane Elim.

28 Concourse Gate, Unit 1, Ottawa, O		175 Richmond Road Ottawa, Ontario									
DATUM TBM - Top spindle of fire h and Clifton Road. Arbitrary REMARKS	ydrant elevat	locate ion = 1	d on t 00.00	he sou)m.	thwes	st corner c	of Wilber	Avenue	FILE NO.	PE2357	1
BORINGS BY CME 55 Power Auger				D	ATE (3 Jun 11			HOLE NO.	BH 5	
BUNINGS BY GIVIL 33 YOWER AUger			C 4 4					Dem D	esist Blow		=
SOIL DESCRIPTION	PLOT			MPLE		DEPTH (m)	ELEV. (m)		esist. Blow 0 mm Dia. C		ng We uction
	STRATA	ТҮРЕ	NUMBER	% RECOVERY	N VALUE or RQD			• Lowe	r Explosive	Limit %	Monitoring Well Construction
GROUND SURFACE			4	RE	z	0-	-99.46	20	40 60	80	2
Asphaltic concrete 0.1		₿ AU	1				2				
		ss	2	58	19	1-	-98.46 _	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
GLACIAL TILL: Compact to dense, brown silty sand with gravel, cobbles and boulders		ss	3	33	92	2-	-97.46		· · · · · · · · · · · · · · · · · · ·		
- grey by 2.2m depth		ss	4	67	28	3-	-96.46				¥
3.8	1	ss	5	71	50+	5	20.40		•••••	•••••••••••••••	
End of Borehole											
Practical refusal to augering @ 3.81m depth											
(GWL @ 2.68m-June 20/111)											
								100 Gasted	200 300 h 1314 Rdg	400 50 g. (ppm)	00

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SOIL PROFILE AND TEST DATA

400

500

100

200

Gastech 1314 Rdg. (ppm) ▲ Full Gas Resp. △ Methane Elim.

300

28 Concourse Gate, Unit 1, Ottawa, ON K2E 7T7						ipplemen 5 Richmo tawa, On	nd Road	Environm	ental Site A	Assessment	t
DATUM TBM - Top spindle of fire hydrand Clifton Road. Arbitrary e	drant elevat	locate ion = 1	d on t 100.00	he sou m.	hwes	st corner c	of Wilber	Avenue	FILE NO.	PE2357	,
REMARKS BORINGS BY CME 55 Power Auger				D	ATE 3	8 Jun 11			HOLE NO.	BH 6	
SOIL DESCRIPTION	ріот		SAMPLI			DEPTH	ELEV.		esist. Blows/0.3m 0 mm Dia. Cone		Well
GROUND SURFACE	STRATA P	ТҮРЕ	NUMBER	% RECOVERY	N VALUE or RQD	(m)	(m)		r Explosive		Monitoring Well Construction
Asphaltic concrete0.05 FILL: Brown silty sand with0.30 gravel		AU AU	1 2			- 0-	-99.27		······································	· · · · · · · · · · · · · · · · · · ·	
		ss	3	50	17	1-	-98.27		•••••••••••••••	······································	
GLACIAL TILL: Compact, brown silty sand with gravel, cobbles and boulders - grey by 2.2m depth		ss	4	75	25	2-	-97.27				
9.0, 0, <u></u>		ss	5	25	27	3-	-96.27				
<u>3.61</u>		ss	6	36	26		2			· · · · · · · · · · · · · · · · · · ·	
BEDROCK: Grey limestone		RC	1	52	0	4-	-95.27	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • •	
End of Borehole											
(GWL @ 2.59m-June 20/11)											

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SOIL PROFILE AND TEST DATA

Supplemental Ph. II - Environmental Site Assessment 175 Richmond Road

200

100

300

Gastech 1314 Rdg. (ppm) ▲ Full Gas Resp. △ Methane Elim.

400

500

28 Concourse Gate, Unit 1, Ottaw			'5 Richmo tawa, On		1						
DATUM TBM - Top spindle of f and Clifton Road. Arbit REMARKS	fire hydrar trary eleva	t locate ation =	ed on t 100.00	the sou)m.	thwes	st corner c	f Wilber	Avenue	FILE NO.	PE2357	
BORINGS BY CME 55 Power Auge	ar			Б		8 Jun 11			HOLE NO.	BH 7	
BORINGS BY CIVIL 33 TOWER Auge			C 4 1		AIE			Dom D	esist Blow		_
SOIL DESCRIPTION	LOT			/IPLE ਮੁ	M -	DEPTH (m)	ELEV. (m)		esist. Blow 0 mm Dia. C		ng We uction
	STRATA	ТҮРЕ	NUMBER	% RECOVERY	N VALUE or RQD			• Lowe	r Explosive	Limit %	Monitoring Well Construction
GROUND SURFACE				<u></u> щ	4	0-	-99.56	20	40 60	80	
Asphaltic concrete FILL: Crushed stone with gravel	0.10	AU	1						· · · · · · · · · · · · · · · · · · ·	•••••••••••••••	
		ss	2	50	19	1-	-98.56		· · · · · · · · · · · · · · · · · · ·	•••••••	
GLACIAL TILL: Compact to dense, brown silty sand with gravel, cobbles and boulders		ŝ, ss	3	92	38	2-	-97.56	4	· · · · · · · · · · · · · · · · · · ·	••••••••••••••••••	
		ÂN ss	4	92	48	2	97.30	······			
		^́∕∕ ĵ∦ ss	5	100	50+	3-	-96.56				
End of Borehole	_ <u>3.45\^^^</u>	^							· • • • • • • • • • • • • • • • • • • •	•••••••	
Practical refusal to augering @ 3.45m depth											
(GWL @ 2.43m-June 20/11)											



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Certificate of Analysis

Paterson Group Consulting Engineers

28 Concourse Gate, Unit 1 Nepean, ON K2E 7T7 Attn: Eric Leveque

Client PO: 10880 Project: PE2357 Custody: 79738 Phone: (613) 226-7381 Fax: (613) 226-6344

Report Date: 30-Jun-2011						
Order Date: 9-Jun-2011						
Revised Report	Order #: 1124174					

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Client ID
BH3-SS4
BH4-SS5
BH5-SS5
BH6-SS6
BH7-SS4

Approved By:

Mark Fiste

Mark Foto, M.Sc. For Dale Robertson, BSc Laboratory Director

Any use of these results implies your agreement that our total liability in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work



Certificate of Analysis Client: Paterson Group Consulting Engineers Client PO: 10880

Project Description: PE2357

Order #: 1124174

Report Date: 30-Jun-2011 Order Date:9-Jun-2011

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date Analysis Date
BTEX	EPA 8260 - P&T GC-MS	10-Jun-11 13-Jun-11
CCME PHC F1	CWS Tier 1 - P&T GC-FID	10-Jun-11 13-Jun-11
CCME PHC F2 - F4	CWS Tier 1 - GC-FID, extraction	14-Jun-11 15-Jun-11
Solids, %	Gravimetric, calculation	15-Jun-11 15-Jun-11

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Page 2 of 7



Order #: 1124174

Report Date: 30-Jun-2011 Order Date:9-Jun-2011

Certificate of Analysis Client: Paterson Group Consulting Engineers

Client PO: 10880	Isuting Engineers	Project Descript	ion: PE2357				
	Client ID: Sample Date: Sample ID: MDL/Units	BH3-SS4 08-Jun-11 1124174-01 Soil	BH4-SS5 08-Jun-11 1124174-02 Soil	BH5-SS5 08-Jun-11 1124174-03 Soil	BH6-SS6 08-Jun-11 1124174-04 Soil		
Physical Characteristics	MDE/Offics	0011	0011	0011	0011		
% Solids	0.1 % by Wt.	89.9	91.5	91.7	88.4		
Volatiles							
Benzene	0.02 ug/g dry	<0.02	<0.02	<0.02	<0.02		
Ethylbenzene	0.05 ug/g dry	0.26	10.8	<0.05	<0.05		
Toluene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05		
m,p-Xylenes	0.05 ug/g dry	<0.05	45.4	<0.05	<0.05		
o-Xylene	0.05 ug/g dry	<0.05	<0.05	<0.05	<0.05		
Xylenes, total	0.05 ug/g dry	<0.05	45.4	<0.05	<0.05		
Toluene-d8	Surrogate	101%	101%	99.3%	99.9%		
Hydrocarbons							
F1 PHCs (C6-C10)	10 ug/g dry	325	1060	<10	<10		
F2 PHCs (C10-C16)	10 ug/g dry	2670	3360	<10	<10		
F3 PHCs (C16-C34)	10 ug/g dry	2620	2710	<10	<10		
F4 PHCs (C34-C50)	10 ug/g dry	<10	<10	<10	<10		
	Client ID: Sample Date: Sample ID:	BH7-SS4 08-Jun-11 1124174-05	-	- -			
	MDL/Units	Soil	-	-	-		
Physical Characteristics % Solids /olatiles	0.1 % by Wt.	90.6	-	-	-		
Benzene	0.02 ug/g dry	<0.02	-	-	-		
		30.0L					
	0.05 ug/g dry	<0.05	-	-	-		
•		<0.05	-	-	-		
Toluene	0.05 ug/g dry 0.05 ug/g dry 0.05 ug/g dry	<0.05		-	-		
Toluene m,p-Xylenes	0.05 ug/g dry 0.05 ug/g dry	<0.05 <0.05	-	-	-		
Toluene m,p-Xylenes o-Xylene	0.05 ug/g dry	<0.05 <0.05 <0.05		-	-		
Toluene m,p-Xylenes o-Xylene Xylenes, total	0.05 ug/g dry 0.05 ug/g dry 0.05 ug/g dry 0.05 ug/g dry	<0.05 <0.05 <0.05 <0.05	- - - -	- - - -	- - - -		
Toluene m,p-Xylenes o-Xylene Xylenes, total Toluene-d8	0.05 ug/g dry 0.05 ug/g dry 0.05 ug/g dry	<0.05 <0.05 <0.05			-		
Toluene m,p-Xylenes o-Xylene Xylenes, total Toluene-d8 Hydrocarbons	0.05 ug/g dry 0.05 ug/g dry 0.05 ug/g dry 0.05 ug/g dry	<0.05 <0.05 <0.05 <0.05 101%	- - - -	- - - -	- - - -		
Toluene m,p-Xylenes o-Xylene Xylenes, total Toluene-d8 Hydrocarbons F1 PHCs (C6-C10)	0.05 ug/g dry0.05 ug/g dry0.05 ug/g dry0.05 ug/g dry0.05 ug/g drySurrogate	<0.05 <0.05 <0.05 <0.05 101% <10	- - - -		- - - -		
Ethylbenzene Toluene m,p-Xylenes o-Xylene Xylenes, total Toluene-d8 Hydrocarbons F1 PHCs (C6-C10) F2 PHCs (C10-C16) F3 PHCs (C16-C34)	0.05 ug/g dry 10 ug/g dry	<0.05 <0.05 <0.05 <0.05 101%	- - - - -	- - - - - -	- - - - -		

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Page 3 of 7



Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 10880

Project Description: PE2357

Order #: 1124174

Report Date: 30-Jun-2011 Order Date:9-Jun-2011

Notes

Method Quality Contro	l: Blank								
Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	10	ug/g						
F2 PHCs (C10-C16)	ND	10	ug/g						
F3 PHCs (C16-C34)	ND	10	ug/g						
F4 PHCs (C34-C50)	ND	10	ug/g						
Volatiles									
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	8.36		ug/g		105	50-140			

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Page 4 of 7



Certificate of Analysis

Client: Paterson Group Consulting Engineers Client PO: 10880

Project Description: PE2357

Order #: 1124174 Report Date: 30-Jun-2011

Order Date:9-Jun-2011

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	10	ug/g dry	ND				40	
F2 PHCs (C10-C16)	ND	10	ug/g dry	ND				50	
F3 PHCs (C16-C34)	15	10	ug/g dry	ND				50	
F4 PHCs (C34-C50)	ND	10	ug/g dry	ND				50	
Physical Characteristics									
% Solids	80.2	0.1	% by Wt.	78.8			1.8	25	
Volatiles									
Benzene	ND	0.02	ug/g dry	ND				50	
Ethylbenzene	ND	0.05	ug/g dry	ND				50	
Toluene	ND	0.05	ug/g dry	ND				50	
m,p-Xylenes	ND	0.05	ug/g dry	ND				50	
o-Xylene	ND	0.05	ug/g dry	ND				50	
Surrogate: Toluene-d8	9.90		ug/g dry	ND	103	50-140			

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Page 5 of 7



Certificate of Analysis Client: Paterson Group Consulting Engineers

Client PO: 10880

Project Description: PE2357

Report Date: 30-Jun-2011 Order Date:9-Jun-2011

Order #: 1124174

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	182	10	ug/g	ND	90.8	80-120			
F2 PHCs (C10-C16)	56	10	ug/g	ND	70.0	61-129			
F3 PHCs (C16-C34)	159	10	ug/g	ND	79.7	61-129			
F4 PHCs (C34-C50)	132	10	ug/g	ND	110	61-129			
Volatiles									
Benzene	3.96	0.02	ug/g	ND	99.1	60-130			
Ethylbenzene	3.79	0.05	ug/g	ND	94.7	60-130			
Toluene	3.83	0.05	ug/g	ND	95.7	60-130			
m,p-Xylenes	7.21	0.05	ug/g	ND	90.1	60-130			
o-Xylene	3.73	0.05	ug/g	ND	93.3	60-130			
Surrogate: Toluene-d8	7.57		ug/g		94.6	50-140			

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Page 6 of 7



Certificate of Analysis Client: Paterson Group Consulting Engineers

Client PO: 10880

Report Date: 30-Jun-2011 Order Date:9-Jun-2011

Project Description: PE2357

Sample and QC Qualifiers Notes

None

Sample Data Revisions

None

Work Order Revisions/Comments:

Revision 1 - This report includes revised client Sample ID's and Project reference.

Other Report Notes:

n/a: not applicable

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCMF PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

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ient Name: PATIERSON	Project	Ref: P	623	63		Waterworks Name						Pag	ge of	ç
Intact Name: EREC LEVIEQUE Idress: 28 CONCOURSE CATE UNET /	Quote #		10880	~ /		Waterworks Numb	er:					Sample Taken by:		
Idress: 28 CONCOURSE	PO #		000			Address:				Prin	Print Name:			
GATE UNET 1		Address:				After hours Conta	et:				Sign	ature:		
lephone: 226-7381	Fax:	veg	ve .		-	Public Health Uni	t:							
Matrix Types: S-Soil/Sed. GW-Ground Water SV	Z2	Water	344	m/Sanita				W Dee	ulated T)				day [] Reg.
nples submitted under: (Indicate ONLY one) D. Reg 153 (511) Table ⊥ □ D. Reg 170/03 □ D. Reg 318. CCME □ D. Reg 243/07 □ D. Reg 319/08 □ Othe	08 🗆 Privat		Type of I	OW Sample	e: R = Raw; 7	T = Treated; D = I er; G = Ground	Distribution	W-Reg	ulated L			Analyses		U-Other
racel Order Number			e	ŝ				~						
1124174	Matrix	Air Volume	Type of Sample	of Containers	Sam	ple Taken	Free / Combined Chlorine Residual mg/L	H=1-1=17	775×					
Sample ID / Location Name	_		E.	#	Date	Time	щ В	00	0	,				
B1+7-554	5				JUNIE	5/11			~					
B1+8-555								V	~					1
13149-555								V	~		1	12	DN	~
B1+10-556		1			V	/		5	/		/			
BI+ 11 - 554	V			V				~	~	1				
5														
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Certificate of Analysis

Paterson Group Consulting Engineers

28 Concourse Gate, Unit 1 Nepean, ON K2E 7T7 Attn: Eric Leveque

Client PO: 10898 Project: PE2357 Custody: 83378 Phone: (613) 226-7381 Fax: (613) 226-6344

Report Date: 15-Jul-2011 Order Date: 13-Jun-2011 Revised Report Order #: 1125092

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

 Paracel ID
 Client ID

 1125092-01
 BH7-GW1

 1125092-02
 BH6-GW1

 1125092-03
 BH4-GW1

Dale Robertson, BSc Laboratory Director

Approved By:

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Certificate of Analysis Client: Paterson Group Consulting Engineers Client PO: 10898

Project Description: PE2357

Order #: 1125092

Report Date: 15-Jul-2011 Order Date:13-Jun-2011

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date Analysis Date
CCME PHC F1	CWS Tier 1 - P&T GC-FID	14-Jun-11 15-Jun-11
CCME PHC F2 - F4	CWS Tier 1 - GC-FID, extraction	14-Jun-11 15-Jun-11
VOCs	EPA 624 - P&T GC-MS	14-Jun-11 15-Jun-11

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Page 2 of 9



Order #: 1125092

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 10898

Project Description: PE2357

Report Date: 15-Jul-2011 Order Date:13-Jun-2011

lient PO: 10898 Project Description: PE2357									
Г	Client ID: Sample Date: Sample ID: MDL/Units	BH7-GW1 13-Jun-11 1125092-01 Water	BH6-GW1 13-Jun-11 1125092-02 Water	BH4-GW1 13-Jun-11 1125092-03 Water	- - - -				
Volatiles									
Acetone	5.0 ug/L	52.4	<5.0	72.6	-				
Benzene	0.5 ug/L	<0.5	<0.5	32.4	-				
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-				
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	-				
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	-				
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	-				
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-				
Chloroethane	1.0 ug/L	<1.0	<1.0	<1.0	-				
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	-				
Chloromethane	3.0 ug/L	<3.0	<3.0	<3.0	-				
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-				
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-				
1,2-Dibromoethane	0.2 ug/L	<0.2	<0.2	<0.2	-				
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-				
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-				
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-				
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-				
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-				
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-				
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-				
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-				
1,2-Dichloroethylene, total	0.5 ug/L	<0.5	<0.5	<0.5	-				
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	-				
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-				
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-				
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	-				
Ethylbenzene	0.5 ug/L	<0.5	<0.5	49.4	-				
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	-				
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	-				
Methyl Butyl Ketone (2-Hexanone	10.0 ug/L	<10.0	<10.0	<10.0	-				
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	-				
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	-				
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	-				

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Client PO: 10898

Order #: 1125092

Report Date: 15-Jul-2011 Order Date:13-Jun-2011

Certificate of Analysis Client: Paterson Group Consulting Engineers

Project Description: PE2357

Sherit 1 O. 10050	Client ID:	BH7-GW1	BH6-GW1	BH4-GW1	-
	Sample Date:	13-Jun-11	13-Jun-11	13-Jun-11	-
	Sample ID:	1125092-01	1125092-02	1125092-03	-
	MDL/Units	Water	Water	Water	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene	0.5 ug/L	<0.5	<0.5	1.1	-
1,2,4-Trichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
1,2,4-Trimethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3,5-Trimethylbenzene	0.5 ug/L	<0.5	<0.5	9.2	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	1100	-
o-Xylene	0.5 ug/L	<0.5	<0.5	6.8	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	1100	-
4-Bromofluorobenzene	Surrogate	113%	112%	105%	-
Dibromofluoromethane	Surrogate	103%	105%	108%	-
Toluene-d8	Surrogate	114%	114%	110%	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	3770	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	46500	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	27900	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-
F1 + F2 PHCs	125 ug/L	<125	<125	50300	-
F3 + F4 PHCs	200 ug/L	<200	<200	27900	-

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Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 10898

Project Description: PE2357

Order #: 1125092 Report Date: 15-Jul-2011

Order Date:13-Jun-2011

Method Quality Control: Bla	ank								
Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Volatiles			. 3						
1,2,4- Trimethylbenzene	ND	0.5	ug/L						
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroethane	ND	1.0	ug/L						
Chloroform	ND	0.5	ug/L						
Chloromethane	ND	3.0	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dibromoethane	ND	0.2	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloroethylene, total	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Butyl Ketone (2-Hexanone)	ND	10.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,2,4-Trichlorobenzene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
1,3,5-Trimethylbenzene	ND	0.5	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	97.6		ug/L		122	50-140			
Surrogate: Dibromofluoromethane	68.3		ug/L		85.4	50-140			
Surrogate: Toluene-d8	88.4		ug/L		110	50-140			
U			- <u>-</u>						

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Analyte

Certificate of Analysis

Client: Paterson Group Consulting Enginee Client PO: 10898

Method Quality Control: Duplica

neers						•	er Date:1	
	Project	Descriptio	n: PE235	7				
licate								
Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes

Hydrocarbons									
F1 PHCs (C6-C10)	588	25	ug/L	491			18.0	30	
Volatiles	000	20	ag/L	101			10.0	00	
				- 1 0			407		
1,2,4- Trimethylbenzene	64.9	0.5	ug/L	54.9			16.7	30	
Acetone	ND	5.0	ug/L	ND			0.0	30	
Benzene	270	0.5	ug/L	247			8.6	30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND ND	0.5	ug/L	ND ND				30 30	
Carbon Tetrachloride Chlorobenzene	ND	0.2 0.5	ug/L ug/L	ND				30 30	
Chloroethane	ND	0.5 1.0	0	ND				30	
Chloroform	ND	0.5	ug/L ug/L	ND				30 30	
Chloromethane	ND	0.5 3.0	ug/L	ND				30 30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dibromoethane	ND	0.2	ug/L	ND				30	
1.2-Dichlorobenzene	ND	0.2	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1.2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	102	0.5	ug/L	82.6			21.4	30	
Hexane	4.54	1.0	ug/L	3.82			17.2	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Butyl Ketone (2-Hexanone)	ND	10.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	841	2.0	ug/L	845			0.5	30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	15.9	0.5	ug/L	14.2			11.5	30	
1,2,4-Trichlorobenzene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	00.07
1,3,5-Trimethylbenzene	4.91	0.5	ug/L	3.45			34.9	30	QR-07
Vinyl chloride	ND	0.5	ug/L	ND			40.0	30	
m,p-Xylenes	168	0.5	ug/L	146			13.8	30	
o-Xylene	65.2	0.5	ug/L	58.6	4 4 4	E0 4 40	10.7	30	
Surrogate: 4-Bromofluorobenzene	91.2		ug/L	ND	114	50-140			
Surrogate: Dibromofluoromethane	68.6		ug/L	ND	85.8	50-140			
Surrogate: Toluene-d8	89.6		ug/L	ND	112	50-140			

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Order #: 1125092

Report Date: 15-Jul-2011 2011



Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 10898

Method Quality Control: Spike

Project Description: PE2357

Report Date: 15-Jul-2011 Order Date:13-Jun-2011

Order #: 1125092

Hydrocarbons F1 PHCs (CP-C10) 2060 25 ug/L ND 103 68-117 F2 PHCs (C10-C16) 1410 100 ug/L ND 87.8 61-129 F3 PHCs (C16-C34) 1620 100 ug/L ND 84.0 67.5 61-129 Volatiles ug/L ND 100 50.140 Renzene 109 5.0 ug/L ND 90.5 50.140 Bromodichioromethane 36.6 0.5 ug/L ND 90.6 50.140 Bromodichioromethane 36.7 0.5 ug/L ND 96.4 50.140 Carbon Tetrachonide 31.6 0.2 ug/L ND 96.8 50.140 Chioroberzene 38.7 0.5 ug/L ND 71.7 50.140 Chioroberzene 38.7 0.5 ug/L ND 85.0 50.140 Chioroberane 32.7 1.0 ug/L ND 85.0 50.140	Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
F1 PLS (CFC-10) 260 25 upL ND 103 68-117 F2 PHCS (C16-C34) 380 100 upL ND 84.0 61-129 F3 PHCS (C16-C34) 1620 100 upL ND 67.5 61-129 F4 PHCS (C34-C50) 1620 100 upL ND 100 50-140 Acctione 109 5.0 upL ND 84.8 50-140 Bromodichloromethane 38.6 0.5 upL ND 94.8 50-140 Bromodichloromethane 38.6 0.5 upL ND 96.8 50-140 Bromodichloromethane 38.7 0.5 upL ND 78.7 50-140 Carbon Tetrachloride 31.6 0.2 upL ND 78.7 50-140 Chioromethane 37.8 0.5 upL ND 78.7 50-140 Chioromethane 37.8 0.5 upL ND 98.6 50-140 Chioromethane 37.4 0.5 upL ND 98.6 50-140 </td <td>Hydrocarbons</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Hydrocarbons									
F3 PHCs (C16-C34) 3360 100 ug/L ND 64.0 61-129 Volatiles		2060	25	ug/L	ND	103	68-117			
F4 PHCs (C34-C50) 1620 100 ugl. ND 67.5 61-129 Volatiles	F2 PHCs (C10-C16)	1410	100	ug/L	ND	87.8	61-129			
Volatiles	F3 PHCs (C16-C34)	3360	100	ug/L	ND	84.0	61-129			
1,2,4 ND ND 50.40 Aceisone 109 5.0 ug/L ND 80.9 50.40 Bernzene 33.6 0.5 ug/L ND 83.9 50.40 Bromodichloromethane 33.6 0.5 ug/L ND 84.8 50.140 Bromodiorn 38.6 0.5 ug/L ND 98.4 50.140 Choronethane 38.7 0.5 ug/L ND 78.1 50.140 Choronethane 28.7 1.0 ug/L ND 88.6 50.140 Choronethane 28.7 1.0 ug/L ND 88.0 50.140 Choronethane 28.4 3.0 ug/L ND 81.0 50.140 Dichoronethane 28.4 3.0 ug/L ND 85.0 50.140 1.2-Dichoronethane 37.8 0.5 ug/L ND 190 50.140 1.2-Dichoronethane 37.0 0.2 ug/L ND 85.0 50.140 1.2-Dichoronethane 34.0 0.5 ug/L	F4 PHCs (C34-C50)	1620	100	ug/L	ND	67.5	61-129			
Acetone 109 5.0 ug/L ND 109 50-140 Bernzene 38.6 0.5 ug/L ND 99.0 50-140 Bromodichloromethane 38.6 0.5 ug/L ND 98.4 50-140 Bromodichloromethane 38.7 0.5 ug/L ND 98.8 50-140 Carbon Tetrachloride 31.6 0.2 ug/L ND 98.6 50-140 Chloroberzone 38.7 1.0 ug/L ND 85.0 50-140 Chloromethane 32.4 3.0 ug/L ND 85.0 50-140 Dibromochhoromethane 37.8 0.2 ug/L ND 85.0 50-140 1.2-Dichorobenzene 43.4 0.5 ug/L ND 101 50-140 1.2-Dichorobenzene 43.4 0.5 ug/L ND 85.5 50-140 1.2-Dichorobenzene 31.4 0.5 ug/L ND 85.5 50-140 1.2	Volatiles									
Benzene 33.6 0.5 ug/L ND 83.9 50-140 Bromodichinormethane 38.6 0.5 ug/L ND 96.4 50-140 Bromotethane 38.7 0.5 ug/L ND 96.4 50-140 Chiorobenzene 38.7 0.5 ug/L ND 78.1 50-140 Chiorobenzene 28.7 1.0 ug/L ND 77.7 50-140 Chiorobenzene 28.7 1.0 ug/L ND 85.0 50-140 Chiorobenzene 28.7 0.5 ug/L ND 85.0 50-140 Dichiorofirormethane 26.6 1.0 ug/L ND 93.2 50-140 1.2-Dichiorobenzene 40.6 0.5 ug/L ND 195 50-140 1.2-Dichiorobenzene 40.6 0.5 ug/L ND 195 50-140 1.2-Dichiorobenzene 31.4 0.5 ug/L ND 85.5 50-140 1.2-Dichi	1,2,4- Trimethylbenzene	40.0	0.5		ND	100	50-140			
Bromodichioromethane 39.6 0.5 ug/L ND 99.0 50-140 Bromomethane 38.6 0.5 ug/L ND 96.8 50-140 Carbon Tetrachioride 31.6 0.2 ug/L ND 96.8 50-140 Chiorobenzene 38.7 0.5 ug/L ND 96.8 50-140 Chiorobenzene 28.7 1.0 ug/L ND 85.0 50-140 Chiorobenzene 28.7 1.0 ug/L ND 85.0 50-140 Dibromochhoromethane 28.6 1.0 ug/L ND 86.6 50-140 Dibromochhoromethane 26.6 1.0 ug/L ND 66.6 50-140 1.2-Dichorobenzene 43.4 0.5 ug/L ND 109 50-140 1.3-Dichorobenzene 43.4 0.5 ug/L ND 83.5 50-140 1.4-Dichorobenzene 31.4 0.5 ug/L ND 83.5 50-140	Acetone	109	5.0	ug/L	ND	109	50-140			
Bromordorm 38.6 0.5 ug/L ND 96.4 50-140 Carbon Tetrachloride 31.6 0.2 ug/L ND 79.1 50-140 Carbon Tetrachloride 31.6 0.2 ug/L ND 79.1 50-140 Chlorobenzene 38.7 0.5 ug/L ND 85.0 50-140 Chlorobenzene 24.4 3.0 ug/L ND 85.0 50-140 Chlorobenzene 24.4 3.0 ug/L ND 84.5 50-140 Dichorobenzene 26.6 1.0 ug/L ND 94.5 50-140 1.2-Dichorobenzene 43.4 0.5 ug/L ND 109 50-140 1.3-Dichorobenzene 43.4 0.5 ug/L ND 86.8 50-140 1.4-Dichoroethane 33.4 0.5 ug/L ND 86.8 50-140 1.2-Dichoroethylene 31.4 0.5 ug/L ND 86.1 50-140 1	Benzene	33.6	0.5	ug/L	ND	83.9	50-140			
Bromomethane 38.7 0.5 ug/L ND 96.8 50-140 Carbon Tetrachloride 31.6 0.2 ug/L ND 96.8 50-140 Chlorobenzene 38.7 0.5 ug/L ND 96.8 50-140 Chloroberhane 28.7 1.0 ug/L ND 85.0 50-140 Chloromethane 28.4 3.0 ug/L ND 81.0 50-140 Dibromothoromethane 26.6 1.0 ug/L ND 66.6 50-140 1.2-Dichlorobenzene 43.6 0.5 ug/L ND 101 50-140 1.2-Dichlorobenzene 43.4 0.5 ug/L ND 105 50-140 1.2-Dichlorobenzene 34.4 0.5 ug/L ND 86.3 50-140 1.2-Dichlorobenzene 34.4 0.5 ug/L ND 86.3 50-140 1.2-Dichlorobenzene 34.4 0.5 ug/L ND 86.1 50-140	Bromodichloromethane	39.6	0.5	ug/L	ND	99.0	50-140			
Carbon Tetrachloride 31.6 0.2 ug/L ND 79.1 50-140 Chlorobenzene 38.7 0.5 ug/L ND 96.8 50-140 Chlorodirame 34.0 0.5 ug/L ND 85.0 50-140 Chlorodirbane 32.4 3.0 ug/L ND 84.5 50-140 Dichiorodifluoromethane 37.8 0.5 ug/L ND 94.5 50-140 J.2-Dichorodethane 37.8 0.5 ug/L ND 94.5 50-140 J.2-Dichorobenzene 40.6 0.5 ug/L ND 101 50-140 J.4-Dichorobenzene 43.4 0.5 ug/L ND 105 50-140 J.4-Dichorobenzene 43.4 0.5 ug/L ND 85.5 50-140 J.2-Dichorobenzene 43.4 0.5 ug/L ND 85.5 50-140 J.2-Dichoropthane 34.4 0.5 ug/L ND 85.1 50-140	Bromoform	38.6	0.5	ug/L	ND	96.4	50-140			
Chlorobenzene 38.7 0.5 ug/L ND 96.8 50-140 Chlorotorm 34.0 0.5 ug/L ND 81.0 50-140 Chloromethane 32.4 3.0 ug/L ND 81.0 50-140 Dichoronomethane 32.4 3.0 ug/L ND 94.5 50-140 Dichoronothomethane 26.6 1.0 ug/L ND 93.2 50-140 1.2-Dichorobenzene 40.6 0.5 ug/L ND 910 50-140 1.2-Dichorobenzene 43.4 0.5 ug/L ND 109 50-140 1.4-Dichorobenzene 43.4 0.5 ug/L ND 83.5 50-140 1.4-Dichorobenzene 34.4 0.5 ug/L ND 85.5 50-140 1.4-Dichorobenzene 34.0 0.5 ug/L ND 85.1 50-140 1.2-Dichorobenzene 34.0 0.5 ug/L ND 80.140 12.5 50-140 <	Bromomethane	38.7	0.5	ug/L	ND	96.8	50-140			
Chloroschane 28.7 1.0 ug/L ND 71.7 50-140 Chloromethane 32.4 3.0 ug/L ND 81.0 50-140 Dibromochloromethane 37.8 0.5 ug/L ND 94.5 50-140 Dibromothoromethane 37.8 0.5 ug/L ND 96.6 50-140 1,2-Dibromoethane 37.3 0.2 ug/L ND 93.2 50-140 1,2-Dibromoethane 40.6 0.5 ug/L ND 101 50-140 1,3-Dichorobenzene 40.6 0.5 ug/L ND 105 50-140 1,4-Dichoroethane 33.4 0.5 ug/L ND 86.8 50-140 1,2-Dichoroethylene 31.4 0.5 ug/L ND 78.5 50-140 1,2-Dichoroethylene 36.1 0.5 ug/L ND 78.5 50-140 1,2-Dichoroethylene 36.1 0.5 ug/L ND 80.1 50-140	Carbon Tetrachloride	31.6	0.2	ug/L	ND	79.1	50-140			
Chloroform 34.0 0.5 ug/L ND 85.0 50-140 Chloromethane 32.4 30 ug/L ND 81.0 50-140 Dichorochloromethane 26.6 1.0 ug/L ND 66.6 50-140 1.2-Dichorobenzene 37.3 0.2 ug/L ND 66.6 50-140 1.2-Dichorobenzene 40.6 0.5 ug/L ND 101 50-140 1.3-Dichorobenzene 43.4 0.5 ug/L ND 105 50-140 1.4-Dichorobenzene 33.4 0.5 ug/L ND 85.5 50-140 1.1-Dichoroethane 34.7 0.5 ug/L ND 86.8 50-140 1.2-Dichoroethylene 31.4 0.5 ug/L ND 85.1 50-140 cis-1.2-Dichloroethylene 36.1 0.5 ug/L ND 90.3 50-140 cis-1.3-Dichloropropalen 24.5 0.5 ug/L ND 90.0 50-140	Chlorobenzene	38.7	0.5	ug/L	ND	96.8	50-140			
Chloromethane 32.4 3.0 ug/L ND 81.0 50-140 Dibronochloromethane 37.8 0.5 ug/L ND 94.5 50-140 J.2-Dibromoethane 37.8 0.2 ug/L ND 66.6 50-140 J.2-Dichlorobenzene 40.6 0.5 ug/L ND 101 50-140 J.3-Dichlorobenzene 42.0 0.5 ug/L ND 102 50-140 J.4-Dichlorobetnzene 42.0 0.5 ug/L ND 85.5 50-140 J.1-Dichloroethane 31.4 0.5 ug/L ND 86.8 50-140 J.2-Dichloroethylene 31.4 0.5 ug/L ND 85.5 50-140 J.2-Dichloroethylene 36.1 0.5 ug/L ND 85.5 50-140 isi-1.2-Dichloroethylene 36.6 0.5 ug/L ND 90.0 50-140 isi-1.2-Dichloroethylene 36.6 0.5 ug/L ND 90.0 50-140	Chloroethane	28.7	1.0	ug/L	ND	71.7	50-140			
Dibromochloromethane 37.8 0.5 ug/L ND 94.5 50-140 Dichlorodifluoromethane 26.6 1.0 ug/L ND 66.6 50-140 1,2-Dibromoethane 40.6 0.5 ug/L ND 101 50-140 1,3-Dichlorobenzene 40.6 0.5 ug/L ND 102 50-140 1,4-Dichlorobenzene 43.4 0.5 ug/L ND 83.5 50-140 1,4-Dichlorobenzene 33.4 0.5 ug/L ND 86.8 50-140 1,1-Dichloroethane 34.7 0.5 ug/L ND 85.1 50-140 1,2-Dichloroethylene 36.1 0.5 ug/L ND 90.3 50-140 1,2-Dichloroethylene 36.1 0.5 ug/L ND 90.0 50-140 1,2-Dichloropropane 24.5 0.5 ug/L ND 90.0 50-140 112-Dichloropropylene 31.6 0.5 ug/L ND 90.0 50-14	Chloroform	34.0	0.5	ug/L	ND	85.0	50-140			
Dichlorodifluoromethane 26.6 1.0 ug/L ND 66.6 50-140 1,2-Dichlorobenzene 37.3 0.2 ug/L ND 101 50-140 1,2-Dichlorobenzene 43.4 0.5 ug/L ND 109 50-140 1,4-Dichlorobenzene 42.0 0.5 ug/L ND 83.5 50-140 1,1-Dichloroethane 33.4 0.5 ug/L ND 83.5 50-140 1,1-Dichloroethane 34.7 0.5 ug/L ND 86.8 50-140 1,2-Dichloroethylene 34.4 0.5 ug/L ND 85.1 50-140 trans-1,2-Dichloroethylene 36.1 0.5 ug/L ND 90.3 50-140 trans-1,3-Dichloropropylene 36.0 0.5 ug/L ND 90.0 50-140 trans-1,3-Dichloropropylene 36.0 0.5 ug/L ND 90.0 50-140 texp 37.7 0.5 ug/L ND 91.6	Chloromethane	32.4	3.0	ug/L	ND	81.0	50-140			
1.2-Dibromoethane 37.3 0.2 ug/L ND 93.2 50-140 1.2-Dichorobenzene 40.6 0.5 ug/L ND 101 50-140 1.3-Dichorobenzene 42.0 0.5 ug/L ND 105 50-140 1.4-Dichoroethane 33.4 0.5 ug/L ND 88.5 50-140 1.2-Dichoroethane 34.7 0.5 ug/L ND 88.6 50-140 1.2-Dichoroethylene 31.4 0.5 ug/L ND 88.5 50-140 1.2-Dichoroethylene 36.1 0.5 ug/L ND 80.5 50-140 1.2-Dichoroethylene 36.1 0.5 ug/L ND 90.3 50-140 1.2-Dichoroethylene 36.1 0.5 ug/L ND 90.0 50-140 1.2-Dichoroethylene 36.0 0.5 ug/L ND 90.0 50-140 1.2-Dichoroethylene 36.0 0.5 ug/L ND 91.0 50-140 1.2-Dichoroethylene 36.0 0.5 ug/L ND 91.0	Dibromochloromethane	37.8	0.5	ug/L	ND	94.5	50-140			
1,2-Dichlorobenzene 40.6 0.5 ug/L ND 101 50-140 1,3-Dichlorobenzene 43.4 0.5 ug/L ND 803 50-140 1,4-Dichlorobenzene 33.4 0.5 ug/L ND 83.5 50-140 1,1-Dichloroethane 33.4 0.5 ug/L ND 86.8 50-140 1,1-Dichloroethylene 31.4 0.5 ug/L ND 86.8 50-140 cis-1,2-Dichloroethylene 36.1 0.5 ug/L ND 85.1 50-140 cis-1,2-Dichloroethylene 36.1 0.5 ug/L ND 61.2 50-140 cis-1,3-Dichloropropylene 36.0 0.5 ug/L ND 79.0 50-140 cis-1,3-Dichloropropylene 36.0 0.5 ug/L ND 90.0 50-140 trans-1,3-Dichloropropylene 36.0 0.5 ug/L ND 90.0 50-140 Hexane 29.4 1.0 ug/L ND 91.0 50-140 Methyl Ethyl Ketone (2-Butanone) 91.11 5.0 ug/L	Dichlorodifluoromethane	26.6	1.0		ND	66.6	50-140			
1,2-Dichlorobenzene 40.6 0.5 ug/L ND 101 50-140 1,3-Dichlorobenzene 43.4 0.5 ug/L ND 83.5 50-140 1,4-Dichlorobenzene 33.4 0.5 ug/L ND 83.5 50-140 1,1-Dichloroethane 33.4 0.5 ug/L ND 86.8 50-140 1,1-Dichloroethylene 31.4 0.5 ug/L ND 85.5 50-140 cis-1,2-Dichloroethylene 36.1 0.5 ug/L ND 85.1 50-140 cis-1,3-Dichloroptylene 36.0 0.5 ug/L ND 61.2 50-140 cis-1,3-Dichloropropylene 31.6 0.5 ug/L ND 79.0 50-140 cis-1,3-Dichloropropylene 36.0 0.5 ug/L ND 79.0 50-140 Ethylbenzene 37.7 0.5 ug/L ND 90.0 50-140 Hexane 29.4 1.0 ug/L ND 73.4 50-140 Methyl Ethyl Ketone (2-Butanone) 111 5.0 ug/L ND <td>1,2-Dibromoethane</td> <td>37.3</td> <td>0.2</td> <td>ug/L</td> <td>ND</td> <td>93.2</td> <td>50-140</td> <td></td> <td></td> <td></td>	1,2-Dibromoethane	37.3	0.2	ug/L	ND	93.2	50-140			
1,3-Dichlorobenzene 43.4 0.5 ug/L ND 109 50-140 1,4-Dichlorobenzene 32.4 0.5 ug/L ND 83.5 50-140 1,1-Dichloroethane 31.4 0.5 ug/L ND 86.8 50-140 1,1-Dichloroethylene 31.4 0.5 ug/L ND 86.8 50-140 1,1-Dichloroethylene 36.1 0.5 ug/L ND 85.1 50-140 trans-1,2-Dichloroethylene 36.1 0.5 ug/L ND 61.2 50-140 trans-1,3-Dichloroptroplene 36.0 0.5 ug/L ND 90.3 50-140 trans-1,3-Dichloroptroplene 36.0 0.5 ug/L ND 90.3 50-140 trans-1,3-Dichloroptroplene 36.0 0.5 ug/L ND 90.5 50-140 ttrans-1,3-Dichloroptroplene 36.0 0.5 ug/L ND 94.2 50-140 Hexane 29.4 1.0 ug/L ND 96.0 50-140 Methyl Ethyl Ketone (2-Butanone) 98.0 10.0 <	1,2-Dichlorobenzene	40.6	0.5		ND	101	50-140			
1,4-Dichlorobenzene 42.0 0.5 ug/L ND 105 50-140 1,1-Dichloroethane 33.4 0.5 ug/L ND 83.5 50-140 1,2-Dichloroethylene 31.4 0.5 ug/L ND 85.8 50-140 1,1-Dichloroethylene 31.4 0.5 ug/L ND 85.1 50-140 1,2-Dichloroethylene 36.1 0.5 ug/L ND 85.1 50-140 1,2-Dichloroptylene 36.1 0.5 ug/L ND 90.3 50-140 1,2-Dichloroptyplene 36.6 0.5 ug/L ND 79.0 50-140 trans-1,3-Dichloropropylene 36.6 0.5 ug/L ND 79.0 50-140 Hexane 29.4 1.0 ug/L ND 73.4 50-140 Methyl Ethyl Ketone (2-Butanone) 111 5.0 ug/L ND 111 5.0 Methyl Ityl Ketone (2-Hexanone) 88.0 10.0 ug/L ND 106 50-140 Methyl Ityl Ketone (2-Hexanone) 31.6 5.0 ug/L	1,3-Dichlorobenzene	43.4	0.5		ND	109	50-140			
1,1-Dichloroethane 33.4 0.5 ug/L ND 83.5 50-140 1,2-Dichloroethylene 31.4 0.5 ug/L ND 86.8 50-140 1,1-Dichloroethylene 31.4 0.5 ug/L ND 85.1 50-140 cis-1,2-Dichloroethylene 36.1 0.5 ug/L ND 90.3 50-140 1,2-Dichloroethylene 36.1 0.5 ug/L ND 91.3 50-140 1,2-Dichloroptopylene 36.6 0.5 ug/L ND 90.3 50-140 cis-1,3-Dichloropropylene 36.0 0.5 ug/L ND 91.2 50-140 trans-1,3-Dichloropropylene 36.0 0.5 ug/L ND 94.2 50-140 Hexane 29.4 1.0 ug/L ND 94.2 50-140 Methyl Ehyl Ketone (2-Butanone) 111 5.0 ug/L ND 111 50-140 Methyl Isbutyl Ketone 106 5.0 ug/L ND 98.0 50-140 Methyl Isbutyl Ketone 106 5.0 ug/L	1,4-Dichlorobenzene	42.0	0.5		ND	105	50-140			
1,2-Dichloroethylene34.70.5ug/LND86.850-1401,1-Dichloroethylene31.40.5ug/LND78.550-140cis-1,2-Dichloroethylene36.10.5ug/LND85.150-1401,2-Dichloroptylene36.10.5ug/LND61.250-1401,2-Dichloroptylene31.60.5ug/LND90.050-1401,2-Dichloroptylene31.60.5ug/LND90.050-140trans-1,3-Dichloroptylene36.00.5ug/LND94.250-140trans-1,3-Dichloroptylene37.70.5ug/LND94.250-140Hexane29.41.0ug/LND73.450-140Methyl Ethyl Ketone (2-Butanone)1115.0ug/LND98.050-140Methyl Isobutyl Ketone1065.0ug/LND10550-140Methyl Isobutyl Ketone31.95.0ug/LND10550-140Methyl Isobutyl Ketone31.95.0ug/LND93.950-140Methylene Chloride31.95.0ug/LND93.950-140Methylene Chloride31.95.0ug/LND93.950-1401,1,2-Tetrachloroethane35.20.5ug/LND93.950-1401,1,2-Tetrachloroethane35.00.5ug/LND78.850-1401,1,2-Tichloroethane31.70.5ug/L <td>1,1-Dichloroethane</td> <td>33.4</td> <td>0.5</td> <td></td> <td>ND</td> <td>83.5</td> <td>50-140</td> <td></td> <td></td> <td></td>	1,1-Dichloroethane	33.4	0.5		ND	83.5	50-140			
1,1-Dichloroethylene 31.4 0.5 ug/L ND 78.5 50-140 cis-1,2-Dichloroethylene 36.0 0.5 ug/L ND 85.1 50-140 trans-1,2-Dichloroethylene 36.1 0.5 ug/L ND 61.2 50-140 1,2-Dichloropropane 24.5 0.5 ug/L ND 61.2 50-140 cis-1,3-Dichloropropylene 31.6 0.5 ug/L ND 90.0 50-140 ttrans-1,3-Dichloropropylene 36.0 0.5 ug/L ND 90.0 50-140 Hexane 29.4 1.0 ug/L ND 73.4 50-140 Methyl Ethyl Ketone (2-Butanone) 111 5.0 ug/L ND 98.0 50-140 Methyl Isobutyl Ketone (2-Hexanone) 98.0 10.0 ug/L ND 98.0 50-140 Methyl Isobutyl Ketone (2-Hexanone) 98.0 10.0 ug/L ND 106 50-140 Methyl Isobutyl Ketone 106 5.0 ug/L ND 106 50-140 Methyl Isobutyl Ketone 31.9	1,2-Dichloroethane	34.7	0.5		ND	86.8	50-140			
cis-1,2-Dichloroethylene34.00.5ug/LND85.150-140trans-1,2-Dichloroptropane36.10.5ug/LND90.350-1401,2-Dichloroptropane24.50.5ug/LND61.250-140cis-1,3-Dichloroptropylene36.00.5ug/LND90.050-140trans-1,3-Dichloroptropylene36.00.5ug/LND94.250-140Ethylbenzene37.70.5ug/LND73.450-140Methyl Ethyl Ketone (2-Butanone)1115.0ug/LND98.050-140Methyl Isobutyl Ketone1065.0ug/LND98.050-140Methyl Isobutyl Ketone1065.0ug/LND10650-140Methyl Isobutyl Ketone1065.0ug/LND10550-140Methyl Isobutyl Ketone31.95.0ug/LND10550-140Methyl Isobutyl Ketone31.95.0ug/LND93.950-1401,1,2-Tetrachloroethane35.20.5ug/LND93.950-1401,1,2-Tetrachloroethane31.70.5ug/LND79.450-1401,1,2-Trichloroethane31.70.5ug/LND79.450-1401,1,2-Trichloroethane31.70.5ug/LND79.450-1401,1,2-Trichloroethane31.70.5ug/LND79.450-1401,1,2-Trichloroethane31.7<	1,1-Dichloroethylene	31.4	0.5		ND	78.5	50-140			
trans-1,2-Dichloroethylene36.10.5ug/LND90.350-1401,2-Dichloropropane24.50.5ug/LND61.250-140cis-1,3-Dichloropropylene31.60.5ug/LND79.050-140trans-1,3-Dichloropropylene36.00.5ug/LND94.250-140Ethylbenzene37.70.5ug/LND94.250-140Methyl Ethyl Ketone (2-Butanone)1115.0ug/LND94.250-140Methyl Isobutyl Ketone (2-Hexanone)98.010.0ug/LND98.050-140Methyl Isobutyl Ketone1065.0ug/LND10650-140Methyl Isobutyl Ketone31.95.0ug/LND10550-140Methylene Choride31.95.0ug/LND10550-140Methylene Choride31.95.0ug/LND93.950-140Methylene Choride35.20.5ug/LND93.950-1401,1,2-Tetrachloroethane35.20.5ug/LND93.950-1401,1,2-Tetrachloroethane31.70.5ug/LND79.250-1401,2,4-Trichloroethane31.70.5ug/LND79.250-1401,2,4-Trichloroethane35.00.5ug/LND79.450-1401,1,2-Trichloroethane35.00.5ug/LND78.850-1401,1,2-Trichloroethane35.0	cis-1,2-Dichloroethylene	34.0	0.5		ND	85.1	50-140			
1,2-Dichloropropane24.50.5ug/LND61.250-140cis-1,3-Dichloropropylene31.60.5ug/LND79.050-140trans-1,3-Dichloropropylene36.00.5ug/LND90.050-140Ethylbenzene37.70.5ug/LND94.250-140Methyl Ethyl Ketone (2-Butanone)1115.0ug/LND73.450-140Methyl Butyl Ketone (2-Hexanone)98.010.0ug/LND98.050-140Methyl Isobutyl Ketone1065.0ug/LND10650-140Methyl Isobutyl Ketone1052.0ug/LND10550-140Methyl Iert-butyl ether1052.0ug/LND10550-140Methyl Iert-butyl ether37.60.5ug/LND93.950-1401,1,2-Tetrachloroethane35.20.5ug/LND93.950-1401,1,2-Tetrachloroethane35.20.5ug/LND88.150-1401,1,2-Tetrachloroethane31.70.5ug/LND79.250-1401,1,2-Tetrachloroethane31.70.5ug/LND79.450-1401,1,2-Tetrachloroethane31.70.5ug/LND79.450-1401,1,2-Tetrachloroethane31.70.5ug/LND79.450-1401,1,2-Tetrachloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane </td <td>trans-1,2-Dichloroethylene</td> <td>36.1</td> <td>0.5</td> <td></td> <td>ND</td> <td>90.3</td> <td>50-140</td> <td></td> <td></td> <td></td>	trans-1,2-Dichloroethylene	36.1	0.5		ND	90.3	50-140			
cis-1,3-Dichloropropylene31.60.5ug/LND79.050-140trans-1,3-Dichloropropylene36.00.5ug/LND90.050-140Ethylbenzene37.70.5ug/LND94.250-140Hexane29.41.0ug/LND73.450-140Methyl Ethyl Ketone (2-Butanone)1115.0ug/LND11150-140Methyl Isobutyl Ketone (2-Hexanone)98.010.0ug/LND10650-140Methyl Isobutyl Ketone1065.0ug/LND10550-140Methyl Isobutyl Ketone1052.0ug/LND10550-140Methylene Chloride31.95.0ug/LND79.850-140Styrene37.60.5ug/LND93.950-1401,1,2.2-Tetrachloroethane35.20.5ug/LND93.950-1401,1,2.2-Tetrachloroethane31.70.5ug/LND92.550-1401,1,2.4-Trichloroethane31.70.5ug/LND79.450-1401,1,2.4-Trichloroethane31.70.5ug/LND79.850-1401,1,2.2-Tetrachloroethane31.70.5ug/LND79.450-1401,1,2.4-Trichloroethane31.70.5ug/LND79.450-1401,1,2.4-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5 </td <td></td> <td>24.5</td> <td>0.5</td> <td></td> <td>ND</td> <td>61.2</td> <td>50-140</td> <td></td> <td></td> <td></td>		24.5	0.5		ND	61.2	50-140			
trans-1,3-Dichloropropylene36.00.5ug/LND90.050-140Ethylbenzene37.70.5ug/LND94.250-140Hexane29.41.0ug/LND73.450-140Methyl Ethyl Ketone (2-Butanone)1115.0ug/LND11150-140Methyl Butyl Ketone (2-Hexanone)98.010.0ug/LND98.050-140Methyl Isobutyl Ketone1065.0ug/LND10650-140Methyl lesobutyl Ketone1052.0ug/LND10550-140Methyl ether1052.0ug/LND79.850-140Methylene Chloride31.95.0ug/LND93.950-140Styrene37.60.5ug/LND99.950-1401,1,2-Tetrachloroethane35.00.5ug/LND99.950-1401,1,2-Tetrachloroethane35.00.5ug/LND99.950-1401,1,2-Tetrachloroethane31.70.5ug/LND79.450-1401,1,2-Trichloroethane31.70.5ug/LND79.450-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND79.450-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND <t< td=""><td>cis-1,3-Dichloropropylene</td><td>31.6</td><td>0.5</td><td></td><td>ND</td><td>79.0</td><td>50-140</td><td></td><td></td><td></td></t<>	cis-1,3-Dichloropropylene	31.6	0.5		ND	79.0	50-140			
Ethylbenzene37.70.5ug/LND94.250-140Hexane29.41.0ug/LND73.450-140Methyl Ethyl Ketone (2-Hexanone)1115.0ug/LND11150-140Methyl Isobutyl Ketone (2-Hexanone)98.010.0ug/LND98.050-140Methyl Isobutyl Ketone (2-Hexanone)98.010.0ug/LND10650-140Methyl Isobutyl Ketone1065.0ug/LND10550-140Methyl Ietr-butyl ether1052.0ug/LND79.850-140Methylene Chloride31.95.0ug/LND93.950-140Styrene37.60.5ug/LND93.950-1401,1,2-Tetrachloroethane40.00.5ug/LND99.950-1401,1,2-Tetrachloroethane35.20.5ug/LND88.150-1401,2,4-Trichloroethane31.70.5ug/LND79.250-1401,2,4-Trichloroethane31.70.5ug/LND79.450-1401,1,1-Trichloroethane31.70.5ug/LND78.850-1401,1,2-Trichloroethane31.70.5ug/LND78.850-1401,1,2-Trichloroethane31.70.5ug/LND78.850-1401,1,2-Trichloroethane31.70.5ug/LND78.850-1401,1,2-Trichloroethylene31.10.5		36.0	0.5		ND	90.0	50-140			
Hexane29.41.0ug/LND73.450-140Methyl Ethyl Ketone (2-Butanone)1115.0ug/LND11150-140Methyl Butyl Ketone (2-Hexanone)98.010.0ug/LND98.050-140Methyl Isobutyl Ketone (2-Hexanone)1065.0ug/LND10650-140Methyl Isobutyl Ketone1065.0ug/LND10550-140Methyl ether1052.0ug/LND79.850-140Methylene Chloride31.95.0ug/LND93.950-140Styrene37.60.5ug/LND99.950-1401,1,2-Tetrachloroethane40.00.5ug/LND99.950-1401,1,2-Tetrachloroethane37.00.5ug/LND92.550-140Tetrachloroethylene37.00.5ug/LND79.250-1401,2,4-Trichloroethane31.70.5ug/LND79.450-1401,2,4-Trichloroethane31.70.5ug/LND79.450-1401,1,1-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Tichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane33.11.0ug/L <td< td=""><td></td><td>37.7</td><td>0.5</td><td></td><td>ND</td><td>94.2</td><td>50-140</td><td></td><td></td><td></td></td<>		37.7	0.5		ND	94.2	50-140			
Methyl Ethyl Ketone (2-Butanone)1115.0ug/LND11150-140Methyl Butyl Ketone (2-Hexanone)98.010.0ug/LND98.050-140Methyl Isobutyl Ketone1065.0ug/LND10650-140Methyl tert-butyl ether1052.0ug/LND10550-140Methylene Chloride31.95.0ug/LND79.850-140Styrene37.60.5ug/LND93.950-1401,1,2-Tetrachloroethane40.00.5ug/LND99.950-1401,1,2.2-Tetrachloroethane35.20.5ug/LND88.150-140Tetrachloroethylene37.00.5ug/LND92.550-1401,2,4-Trichlorobenzene31.70.5ug/LND79.450-1401,2,4-Trichloroethane35.00.5ug/LND79.450-1401,2,4-Trichloroethane35.00.5ug/LND79.450-1401,1,1-Trichloroethane31.70.5ug/LND78.850-1401,1,2-Trichloroethane35.00.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane33.11.0 <td>Hexane</td> <td>29.4</td> <td>1.0</td> <td></td> <td>ND</td> <td>73.4</td> <td>50-140</td> <td></td> <td></td> <td></td>	Hexane	29.4	1.0		ND	73.4	50-140			
Methyl Butyl Ketone (2-Hexanone)98.010.0ug/LND98.050-140Methyl Isobutyl Ketone1065.0ug/LND10650-140Methyl tert-butyl ether1052.0ug/LND10550-140Methylene Chloride31.95.0ug/LND79.850-140Styrene37.60.5ug/LND93.950-1401,1,2-Tetrachloroethane40.00.5ug/LND99.950-1401,1,2,2-Tetrachloroethane35.20.5ug/LND88.150-140Tetrachloroethylene37.00.5ug/LND79.250-1401,2,4-Trichlorobenzene31.70.5ug/LND79.450-1401,1,2-Trichloroethane35.00.5ug/LND79.450-1401,2,4-Trichloroethane31.50.5ug/LND79.450-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.10.0ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND82.650-140	Methyl Ethyl Ketone (2-Butanone)	111	5.0		ND	111	50-140			
Methyl Isobutyl Ketone1065.0ug/LND10650-140Methyl tert-butyl ether1052.0ug/LND10550-140Methylene Chloride31.95.0ug/LND79.850-140Styrene37.60.5ug/LND93.950-1401,1,2-Tetrachloroethane40.00.5ug/LND99.950-1401,1,2,2-Tetrachloroethane35.20.5ug/LND88.150-140Tetrachloroethylene37.00.5ug/LND92.550-140Toluene31.70.5ug/LND79.250-1401,2,4-Trichloroethane35.00.5ug/LND79.450-1401,1,1-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane33.11.0ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND11650-140		98.0	10.0		ND	98.0	50-140			
Methyl tert-butyl ether1052.0ug/LND10550-140Methylene Chloride31.95.0ug/LND79.850-140Styrene37.60.5ug/LND93.950-1401,1,2-Tetrachloroethane40.00.5ug/LND99.950-1401,1,2,2-Tetrachloroethane35.20.5ug/LND88.150-140Tetrachloroethylene37.00.5ug/LND92.550-140Toluene31.70.5ug/LND79.250-1401,2,4-Trichloroethane35.00.5ug/LND79.450-1401,1,1-Trichloroethane35.00.5ug/LND79.450-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,3-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.10.0ug/LND88.650-1401,1,3-Trichloroethane31.10.5ug/LND78.850-1401,1,3-Trichloroethane31.10.5ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND11650-140	Methyl Isobutyl Ketone	106	5.0		ND	106	50-140			
Methylene Chloride31.95.0ug/LND79.850-140Styrene37.60.5ug/LND93.950-1401,1,2-Tetrachloroethane40.00.5ug/LND99.950-1401,1,2,2-Tetrachloroethane35.20.5ug/LND88.150-140Tetrachloroethylene37.00.5ug/LND92.550-140Toluene31.70.5ug/LND79.250-1401,2,4-Trichloroethane31.70.5ug/LND79.450-1401,1,1-Trichloroethane35.00.5ug/LND87.650-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.11.0ug/LND82.650-1401,1,3-Trimethylbenzene46.50.5ug/LND11650-140		105	2.0		ND	105	50-140			
Styrene37.60.5ug/LND93.950-1401,1,2-Tetrachloroethane40.00.5ug/LND99.950-1401,1,2,2-Tetrachloroethane35.20.5ug/LND88.150-140Tetrachloroethylene37.00.5ug/LND92.550-140Toluene31.70.5ug/LND79.250-1401,2,4-Trichlorobenzene31.70.5ug/LND79.450-1401,1,1-Trichloroethane35.00.5ug/LND87.650-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.11.0ug/LND82.650-140Trichloroethylene25.80.5ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND11650-140		31.9	5.0		ND	79.8	50-140			
1,1,2-Tetrachloroethane40.00.5ug/LND99.950-1401,1,2,2-Tetrachloroethane35.20.5ug/LND88.150-140Tetrachloroethylene37.00.5ug/LND92.550-140Toluene31.70.5ug/LND79.250-1401,2,4-Trichloroethane31.70.5ug/LND79.450-1401,1,1-Trichloroethane35.00.5ug/LND87.650-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.10.5ug/LND78.850-140Trichloroethylene25.80.5ug/LND64.650-140Trichlorofluoromethane33.11.0ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND11650-140	Styrene	37.6	0.5		ND	93.9	50-140			
1,1,2,2-Tetrachloroethane35.20.5ug/LND88.150-140Tetrachloroethylene37.00.5ug/LND92.550-140Toluene31.70.5ug/LND79.250-1401,2,4-Trichlorobenzene31.70.5ug/LND79.450-1401,1,1-Trichloroethane35.00.5ug/LND87.650-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane31.50.5ug/LND78.850-140Trichloroethylene25.80.5ug/LND64.650-140Trichlorofluoromethane33.11.0ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND11650-140										
Tetrachloroethylene37.00.5ug/LND92.550-140Toluene31.70.5ug/LND79.250-1401,2,4-Trichlorobenzene31.70.5ug/LND79.450-1401,1,1-Trichloroethane35.00.5ug/LND87.650-1401,1,2-Trichloroethane31.50.5ug/LND78.850-1401,1,2-Trichloroethane25.80.5ug/LND64.650-140Trichlorofluoromethane33.11.0ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND11650-140		35.2	0.5		ND	88.1	50-140			
Toluene31.70.5ug/LND79.250-1401,2,4-Trichlorobenzene31.70.5ug/LND79.450-1401,1,1-Trichloroethane35.00.5ug/LND87.650-1401,1,2-Trichloroethane31.50.5ug/LND78.850-140Trichloroethylene25.80.5ug/LND64.650-140Trichlorofluoromethane33.11.0ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND11650-140	Tetrachloroethylene	37.0	0.5		ND	92.5	50-140			
1,2,4-Trichlorobenzene31.70.5ug/LND79.450-1401,1,1-Trichloroethane35.00.5ug/LND87.650-1401,1,2-Trichloroethane31.50.5ug/LND78.850-140Trichloroethylene25.80.5ug/LND64.650-140Trichlorofluoromethane33.11.0ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND11650-140										
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1,1,2-Trichloroethane31.50.5ug/LND78.850-140Trichloroethylene25.80.5ug/LND64.650-140Trichlorofluoromethane33.11.0ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND11650-140										
Trichloroethylene25.80.5ug/LND64.650-140Trichlorofluoromethane33.11.0ug/LND82.650-1401,3,5-Trimethylbenzene46.50.5ug/LND11650-140										
Trichlorofluoromethane 33.1 1.0 ug/L ND 82.6 50-140 1,3,5-Trimethylbenzene 46.5 0.5 ug/L ND 116 50-140										
1,3,5-Trimethylbenzene 46.5 0.5 ug/L ND 116 50-140	,									
VITYLCHIUHUE 41.0 U.3 UU/L IND 104 30-140	Vinyl chloride	41.8	0.5	ug/L	ND	104	50-140			

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SARNIA 123 Christina St. N. Sarnia, ON N7T 5T7

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Certificate of Analysis Client: Paterson Group Consulting Engineers

Client PO: 10898

Project Description: PE2357

Order #: 1125092

Report Date: 15-Jul-2011 Order Date:13-Jun-2011

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	76.4	0.5	ug/L	ND	95.6	50-140			
o-Xylene	37.5	0.5	ug/L	ND	93.7	50-140			
Surrogate: 4-Bromofluorobenzene	88.2		ug/L		110	50-140			
Surrogate: 4-Bromofluorobenzene	77.5		ug/L		96.8	50-140			
Surrogate: Dibromofluoromethane	43.8		ug/L		54.7	50-140			
Surrogate: Dibromofluoromethane	72.8		ug/L		91.0	50-140			
Surrogate: Toluene-d8	46.9		ug/L		58.6	50-140			
Surrogate: Toluene-d8	68.7		ug/L		85.9	50-140			

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SARNIA 123 Christina St. N. Sarnia, ON N7T 5T7

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Certificate of Analysis Client: Paterson Group Consulting Engineers

Client PO: 10898

Project Description: PE2357

Order #: 1125092

Report Date: 15-Jul-2011 Order Date:13-Jun-2011

Sample and QC Qualifiers Notes

1-QR-07: Duplicate result exceeds RPD limits due to non-homogeneity between multiple sample vials.

Sample Data Revisions

None

Work Order Revisions/Comments:

Revision 1 - This report includes revised client Sample ID's and Project reference.

Other Report Notes:

n/a: not applicable MDL: Method Detection Limit Source Result: Data used as source for matrix and duplicate samples %REC: Percent recovery.

RPD: Relative percent difference.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

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OPARACEL LABORATORIES LTD.	RES	STED PONSI IABLE	VE.					30	Ottawa t:	. Laurent Blvd , ON K1G 4J8 613-731-9577 800-749-1947	Chan	n of Custo (lab use only)	ody	
OTTAWA NIAGARA FALLS MISSISS	AUGA @	SAR	NIA		R	eg. Drinking Wa	ter	e: p	f:	613-731-9064 tracellabs.com		83378	3	
Client Name: Paterson Group	Project	Ref:	62	363		aterworks Name:					P			
Contact Name: Eric Ledeaul	Quote #	1				aterworks Numbe	er:					ample Taken by:		
Address: 28 concourse gate	PO #	lo	899	2	A	Address:						Dan. S		
gate gate	E-mail	mail Address:			A	After hours Contact:					Signature:			
Telephone: 613 226-7381	Fax:	dos la	pares.	songic	p,ca P	Public Health Unit:						TAT: 1-day 2-day Reg.		
Matrix Types: S-Soil/Sed. GW-Ground Water SW	V-Surface	Water	SS-Stor	m/Sanita	ry Sewer D'	W-Drinking V	Vater RD	W.Re	mlated	Drinking W	IAI:	I-day 2-day R	eg.	
Samples submitted under: (Indicate ONLY one) □ 0. Reg 153 (511) Table <u>3</u> □ 0. Reg 170/03 □ 0. Reg 318/(□ CCME □ 0. Reg 243/07 □ 0. Reg 319/08 □ Other)8 🗖 Privat		Type of 1	DW Sampl	$e: \mathbf{R} = Raw; \mathbf{T}$	= Treated; D = D ; G = Ground V	istribution		guiateu		ired Analys		r	
Paracel Order Number	Matrix	Air Volume	Type of Sample	of Containers	Sampl	Time Line Combined		Btcx	PHC'S (FI-FIL)					
Sample ID / Location Name			H.	#	Date	Time	E Q		Hd					
1 BHIL-GWI	GW			2	13/06/11	9:30gw		1	,					
2 BHII-GWI	GW			\	13/06/11	9:30an			/					
3 BH 10 - GW	GN			2	13/06/11	9: 40an								
4 BH10-GW1	GW			V	3/04/1	9:40 an			~					
5 BH8- GW1	GW			2	12/14/11	10: Quan		\checkmark						
6 BHB- GWI	GW			1	13/11/11	10: 00au		V						
7					-109 11	10.0000	1							
8														
9														
10														
Comments: * New Guidelines	* Dec	an	twr	vere	neces	sarya	25	Pres	ervation	Verification		Temperature 17	8.	
Relinquished By (Print & Sign): Day Smith Destroy	Receive		A	10.00			Lab Use Onl		neu oy.		101	1		
Date/Time: 13 06/11	Driver/ Date/T	Depot:	Harry		a	Lab: M Date/Time:	1	1-	4:5	Verified By: Date/Tin	1kg	MUT	-	
ChainOfCustody Rev 2.0. January 2010						V	June 1	9/11	- T .0		- Ja 1	1:2lea	<u></u>	

