



RE: Supplemental Soil Sampling Program
2425 Don Reid Drive – Ottawa, Ontario

To: Mr. Vincent Denomme– Claridge Homes –
vincent.denomme@claridgehomes.com

Date: December 19, 2023

File: PE5607-MEMO.01

Further to your request and authorization, Paterson Group (Paterson) has prepared the following memo highlighting the recent supplemental soil sampling program completed at 2425 Don Reid Drive. The purpose of the sampling program was to characterize the fill material within the proposed future park block, to comply with recommendations made by the City of Ottawa's Environmental Remediation Unit.

Paterson conducted a test pit program at the subject property, on November 16th, 2023, in conjunction with a soil characterization program for the larger parcel of development land. A total of 16 test pits were excavated within the future project area; test pits TP10-23, TP11-23 and TP12-23 were excavated within the future park block at 2425 Don Reid Drive, as shown on Drawing PE5607-3 – Test Hole Location Plan appended to this memo.

The site stratigraphy at 2425 Don Reid Drive generally consisted of a layer of asphalt, followed by fill material consisting of brown silty sand with varying amounts crushed stone underlain by native brown silty clay. The fill material extended to a depth of approximately 0.5-0.7 m below grade. A total of nine grab samples were collected from TP10-23 through TP12-23, at depths ranging from 0 to 1.1 m below existing ground surface. No apparent deleterious materials or any visual or olfactory signs of potential contamination were observed in the samples collected during the field program. A photo ionization detector (PID) was used to measure the volatile organic vapour concentrations. The maximum vapor reading was 0.9 ppm in the soil samples obtained from the 2425 Don Reid Drive property. These results were not considered to be indicative of potential significant contamination from volatile contaminants. Vapour readings are noted on the Soil Profile and Data Sheets attached to this memo.

Three samples of the fill material from the 2425 Don Reid Drive property were submitted for analysis of petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene and xylenes (BTEX), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs) and metals. All the analyzed parameters comply with the applicable MECP Table 3 Residential/Parkland/Institutional (RPI) Standards, apart from marginally elevated concentrations of molybdenum in soil Samples TP10-23-G1 (7.8 ug/g) and TP12-23-G1/G2 (11.8 ug/g).



As a result of the molybdenum exceedances identified in two of the submitted samples, a second sampling program was conducted on December 1st, 2023. In accordance with Section 48 (2) of O.Reg. 153/04, as amended under the Environmental Protection Act, “if two or more samples of soil or sediment are taken from sampling points at the same sampling location that are at the same depth in, on or under the property, the property meets a standard mentioned in subsection (1) if the average of the sampling results meets the standard and in no other circumstances.”

As per Section 48 (4) of the regulation, Samples TP10-23-G1 and TP10-23-G1(2) were taken from sampling points at the same sampling location (an area of the property that does not have a radius larger than 2m) and the same depth. The concentrations of molybdenum identified in these samples were 7.8 ug/g (TP10-23-G1) and 1.6 ug/g (TP10-23-G1(2)). The average of the results is 4.7 µg/g which complies with the MECP Table 3 RPI standard value of 6.9 ug/g.

As per Section 48 (4) of the regulation, Samples TP12-23-G1/G2 and TP12-23-G1/G2(2) were taken from sampling points at the same sampling location (an area of the property that does not have a radius larger than 2m) and the same depth. The concentrations of molybdenum identified in these samples were 11.8 ug/g (TP12-23-G1/G2) and 1.0 ug/g (TP12-23-G1/G2(2)). The average of the results is 6.4 µg/g which complies with the MECP Table 3 RPI standard value of 6.9 ug/g.

Based on our findings, the soil quality at the 2425 Don Reid Drive property complies with MECP Table 3 RPI Standards and is suitable for the proposed future use as parkland. The laboratory certificates of analysis are attached to this memorandum.

We trust that this information satisfies your requirements.

Paterson Group Inc.

Jeremy Camposarcone, B.Eng.

Karyn Munch, P.Eng., Q.P.ESA

Attachments

- Soil Profile and Test Data Sheets
- Laboratory Certificates of Analysis
- Drawing PE5607-3 – Test Hole Location Plan





**PATERSON
GROUP**

SOIL PROFILE AND TEST DATA

PHASE II - ENVIRONMENTAL SITE ASSESSMENT

Walkley Lands, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 372761.187 **NORTHING:** 5027165.132 **ELEVATION:** 85.45

PROJECT: Excess Soil Quality Assessment

FILE NO. PE5607

BORINGS BY: Excavator

REMARKS:

DATE: November 16, 2023

HOLE NO. TP10-23

SAMPLE DESCRIPTION	STRATA PLOT	Sample No.	SAMPLE % RECOVERY	N VALUE or RQD	ANALYTICAL TESTS	DEPTH (m)	PID (ppm)			Gas Tech (ppm)			Monitoring Well Construction
							0	16.67	33.33	50	0	50	
Ground Surface						0							
Asphaltic concrete						0							
FILL: Crushed stone, some sand		G 1			VOCs, PHCs, Metals, PAHs, EC/SAR	0.7							
		G 2				0.5							
Brown SILTY CLAY		G 3				0.8							
End of Test Pit						1							
Terminated in native clay						2							
						3							

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SOIL PROFILE AND TEST DATA
PHASE II - ENVIRONMENTAL SITE ASSESSMENT

Walkley Lands, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 372737.228 **NORTHING:** 5027137.38 **ELEVATION:** 85.66

PROJECT: Excess Soil Quality Assessment

FILE NO. PE5607

BORINGS BY: Excavator

REMARKS:

DATE: November 16, 2023

HOLE NO. TP11-23

SAMPLE DESCRIPTION	STRATA PLOT	Sample No.	SAMPLE % RECOVERY	N VALUE or RQD	ANALYTICAL TESTS	DEPTH (m)	PID (ppm)			Gas Tech (ppm)			Monitoring Well Construction
							0	16.67	33.33	50	0	50	
Ground Surface						0							
FILL: Brown silty sand, some crushed stone		G 1			VOCs, PHCs, Metals, PAHs, EC/SAR	0.3							
0.2 m EL 85.46 m													
FILL: Crushed stone		G 2				0.4							
0.5 m EL 85.16 m													
Brown SILTY CLAY		G 3				0.4							
1.5 m EL 84.16 m													
End of Test Pit													
Terminated in native clay													

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GROUP**

SOIL PROFILE AND TEST DATA

PHASE II - ENVIRONMENTAL SITE ASSESSMENT

Walkley Lands, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 372712.548 **NORTHING:** 5027152.301 **ELEVATION:** 85.65

PROJECT: Excess Soil Quality Assessment

FILE NO. PE5607

BORINGS BY: Excavator

REMARKS:

DATE: November 16, 2023

HOLE NO. TP12-23

SAMPLE DESCRIPTION	STRATA PLOT	Sample No.	SAMPLE % RECOVERY	N VALUE or RQD	ANALYTICAL TESTS	DEPTH (m)	PID (ppm)			Gas Tech (ppm)			Monitoring Well Construction
							0	16.67	33.33	50	0	50	
Ground Surface						0							
Asphaltic concrete						0							
FILL: Crushed stone, some sand		G 1			VOCs, PHCs, Metals, PAHs, EC/SAR	0.4							
		G 2				0.3							
Brown SILTY CLAY		G 3			BTEX/PHCs, Metals, EC/SAR	0.9							
End of Test Pit						1							
Terminated in native clay						2							
						3							

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Certificate of Analysis

Paterson Group Consulting Engineers (Ottawa)

9 Auriga Drive
Ottawa, ON K2E 7T9
Attn: Jeremy Camposarcone

Client PO: 58881
Project: PE5607
Custody:

Report Date: 24-Nov-2023
Order Date: 20-Nov-2023

Order #: 2347075

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

Parcel ID	Client ID	Parcel ID	Client ID
2347075-01	TP1-23-G2	2347075-17	TP13-23-G3
2347075-02	TP2-23-G2	2347075-18	TP14-23-G3
2347075-03	TP3-23-G2	2347075-19	TP15-23-G1
2347075-04	TP4-23-G1	2347075-20	TP16-23-G2
2347075-05	TP5-23-G2	2347075-21	TP16-23-G3
2347075-06	TP5-23-G3	2347075-22	SP-G1
2347075-07	TP6-23-G1	2347075-23	SP-G4
2347075-08	TP7-23-G1	2347075-24	SP-G5
2347075-09	TP7-23-G3	2347075-25	DUP1
2347075-10	TP8-23-G2	2347075-26	DUP2
2347075-11	TP8-23-G3	2347075-27	DUP3
2347075-12	TP9-23-G1	2347075-28	DUP4
2347075-13	TP9-23-G3		
2347075-14	TP10-23-G1		
2347075-15	TP11-23-G1		
2347075-16	TP12-23-G1/G2		

Approved By:



Mark Foto, M.Sc.

Lab Supervisor

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	21-Nov-23	21-Nov-23
Conductivity	MOE E3138 - probe @25 °C, water ext	22-Nov-23	22-Nov-23
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	22-Nov-23	22-Nov-23
PHC F1	CWS Tier 1 - P&T GC-FID	21-Nov-23	21-Nov-23
PHC F4G (gravimetric)	CWS Tier 1 - Extraction Gravimetric	23-Nov-23	24-Nov-23
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	21-Nov-23	23-Nov-23
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	22-Nov-23	22-Nov-23
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	21-Nov-23	22-Nov-23
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	21-Nov-23	21-Nov-23
SAR	Calculated	22-Nov-23	22-Nov-23
Solids, %	CWS Tier 1 - Gravimetric	21-Nov-23	22-Nov-23

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP1-23-G2	TP2-23-G2	TP3-23-G2	TP4-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-01	2347075-02	2347075-03	2347075-04	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Physical Characteristics

% Solids	0.1 % by Wt.	88.5	72.9	83.4	76.7	-	-
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General Inorganics

SAR	0.01 N/A	3.73	0.42	0.12	0.32	-	-
Conductivity	5 uS/cm	387	149	138	373	-	-

Metals

Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	1.5	3.3	3.8	4.6	-	-
Barium	1.0 ug/g	29.3	529	212	251	-	-
Beryllium	0.5 ug/g	<0.5	1.1	0.7	0.7	-	-
Boron	5.0 ug/g	<5.0	5.4	6.5	5.8	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	16.0	150	50.5	78.7	-	-
Cobalt	1.0 ug/g	4.2	34.7	14.1	18.8	-	-
Copper	5.0 ug/g	6.5	61.3	30.4	28.0	-	-
Lead	1.0 ug/g	4.7	8.8	6.3	13.3	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	<1.0	4.8	-	-
Nickel	5.0 ug/g	9.5	83.9	31.9	47.2	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	23.5	129	67.2	73.0	-	-
Zinc	20.0 ug/g	30.2	166	79.0	90.4	-	-

Volatiles

Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
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Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP1-23-G2	TP2-23-G2	TP3-23-G2	TP4-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-01	2347075-02	2347075-03	2347075-04	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	99.8%	107%	101%	104%	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	15	<8	<8	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	10	<6	<6	<6	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Acenaphthylene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Anthracene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Benzo [a] anthracene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Benzo [a] pyrene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Chrysene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Fluoranthene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Fluorene	0.02 ug/g	<0.02	-	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	<0.02	-	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP1-23-G2	TP2-23-G2	TP3-23-G2	TP4-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-01	2347075-02	2347075-03	2347075-04	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Semi-Volatiles

1-Methylnaphthalene	0.02 ug/g	<0.02	-	<0.02	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	<0.02	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	-	<0.04	-	-
Naphthalene	0.01 ug/g	<0.01	-	<0.01	-	-
Phenanthrene	0.02 ug/g	<0.02	-	<0.02	-	-
Pyrene	0.02 ug/g	<0.02	-	<0.02	-	-
2-Fluorobiphenyl	Surrogate	68.0%	-	85.3%	-	-
Terphenyl-d14	Surrogate	56.2%	-	67.7%	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP5-23-G2	TP5-23-G3	TP6-23-G1	TP7-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-05	2347075-06	2347075-07	2347075-08	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Physical Characteristics

% Solids	0.1 % by Wt.	96.8	71.3	72.7	95.2	-	-
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General Inorganics

SAR	0.01 N/A	0.09	0.17	0.32	0.11	-	-
Conductivity	5 uS/cm	162	219	125	136	-	-
pH	0.05 pH Units	-	6.86	-	-	-	-

Metals

Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	7.9	3.7	3.0	9.5	-	-
Barium	1.0 ug/g	126	402	357	13.8	-	-
Beryllium	0.5 ug/g	<0.5	1.1	0.9	0.5	-	-
Boron	5.0 ug/g	11.7	9.7	5.4	7.7	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	11.8	150	125	11.6	-	-
Cobalt	1.0 ug/g	8.5	34.6	23.0	9.1	-	-
Copper	5.0 ug/g	8.4	69.7	58.0	8.3	-	-
Lead	1.0 ug/g	17.6	8.7	7.0	17.8	-	-
Molybdenum	1.0 ug/g	5.7	<1.0	<1.0	4.9	-	-
Nickel	5.0 ug/g	16.5	88.5	69.7	16.9	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	1.1	1.0	<1.0	-	-
Vanadium	10.0 ug/g	11.8	133	108	12.1	-	-
Zinc	20.0 ug/g	<20.0	153	131	<20.0	-	-

Volatiles

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP5-23-G2	TP5-23-G3	TP6-23-G1	TP7-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-05	2347075-06	2347075-07	2347075-08	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	90.5%	110%	103%	92.1%	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	6	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	26	<8	<8	42	-	-
F4 PHCs (C34-C50)	6 ug/g	63	<6	<6	181 [1]	-	-
F4G PHCs (gravimetric)	50 ug/g	-	-	-	263	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g	<0.02	-	-	-	-	-
Acenaphthylene	0.02 ug/g	<0.02	-	-	-	-	-
Anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [a] anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	-	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-
Chrysene	0.02 ug/g	<0.02	-	-	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	-	-	-	-
Fluoranthene	0.02 ug/g	<0.02	-	-	-	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP5-23-G2	TP5-23-G3	TP6-23-G1	TP7-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-05	2347075-06	2347075-07	2347075-08	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Semi-Volatiles

Fluorene	0.02 ug/g	<0.02	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	-	-	-	-
Naphthalene	0.01 ug/g	<0.01	-	-	-	-
Phenanthrene	0.02 ug/g	<0.02	-	-	-	-
Pyrene	0.02 ug/g	<0.02	-	-	-	-
2-Fluorobiphenyl	Surrogate	75.5%	-	-	-	-
Terphenyl-d14	Surrogate	63.6%	-	-	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP7-23-G3	TP8-23-G2	TP8-23-G3	TP9-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-09	2347075-10	2347075-11	2347075-12	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Physical Characteristics

% Solids	0.1 % by Wt.	67.7	94.8	70.6	93.3	-	-
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General Inorganics

SAR	0.01 N/A	0.24	0.11	0.16	0.44	-	-
Conductivity	5 uS/cm	226	124	208	109	-	-
pH	0.05 pH Units	-	-	-	7.23	-	-

Metals

Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	3.2	6.2	4.6	2.1	-	-
Barium	1.0 ug/g	412	69.5	375	25.3	-	-
Beryllium	0.5 ug/g	0.9	<0.5	1.0	<0.5	-	-
Boron	5.0 ug/g	6.1	9.7	8.7	5.2	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	140	17.9	129	10.3	-	-
Cobalt	1.0 ug/g	28.7	9.4	30.7	4.2	-	-
Copper	5.0 ug/g	67.2	22.6	60.6	12.6	-	-
Lead	1.0 ug/g	7.3	11.8	9.8	3.5	-	-
Molybdenum	1.0 ug/g	1.2	2.1	1.4	<1.0	-	-
Nickel	5.0 ug/g	80.8	18.6	77.2	8.3	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	124	23.2	118	18.7	-	-
Zinc	20.0 ug/g	151	32.8	138	<20.0	-	-

Volatiles

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP7-23-G3	TP8-23-G2	TP8-23-G3	TP9-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-09	2347075-10	2347075-11	2347075-12	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

	MDL/Units	TP7-23-G3	TP8-23-G2	TP8-23-G3	TP9-23-G1	-	-
Acetone	0.50 ug/g	-	<0.50	<0.50	<0.50	-	-
Benzene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Bromodichloromethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Bromoform	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Bromomethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Carbon Tetrachloride	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Chlorobenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Chloroform	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Dibromochloromethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,1-Dichloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,2-Dichloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,2-Dichloropropane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Ethylbenzene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Hexane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP7-23-G3	TP8-23-G2	TP8-23-G3	TP9-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-09	2347075-10	2347075-11	2347075-12	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	<0.50	<0.50	-	-
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	<0.50	<0.50	-	-
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Methylene Chloride	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Styrene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Tetrachloroethylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Trichloroethylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Vinyl chloride	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
m,p-Xylenes	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	-	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	-	93.0%	108%	93.1%	-	-
Dibromofluoromethane	Surrogate	-	101%	112%	99.8%	-	-
4-Bromofluorobenzene	Surrogate	-	81.6%	97.2%	91.4%	-	-
Benzene	0.02 ug/g	<0.02	-	-	-	-	-
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	-	-
Toluene	0.05 ug/g	<0.05	-	-	-	-	-
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	-	-	-	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP7-23-G3	TP8-23-G2	TP8-23-G3	TP9-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-09	2347075-10	2347075-11	2347075-12	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

Xylenes, total	0.05 ug/g	<0.05	-	-	-	-
Toluene-d8	Surrogate	108%	-	-	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	13	<8	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	60	<6	<6	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g	-	<0.02	-	-	-	-
Acenaphthylene	0.02 ug/g	-	<0.02	-	-	-	-
Anthracene	0.02 ug/g	-	<0.02	-	-	-	-
Benzo [a] anthracene	0.02 ug/g	-	<0.02	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	-	<0.02	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	-	<0.02	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	-	<0.02	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	-	<0.02	-	-	-	-
Chrysene	0.02 ug/g	-	<0.02	-	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	-	<0.02	-	-	-	-
Fluoranthene	0.02 ug/g	-	<0.02	-	-	-	-
Fluorene	0.02 ug/g	-	<0.02	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	-	<0.02	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	-	<0.02	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	-	<0.02	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	-	<0.04	-	-	-	-
Naphthalene	0.01 ug/g	-	<0.01	-	-	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP7-23-G3	TP8-23-G2	TP8-23-G3	TP9-23-G1	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-09	2347075-10	2347075-11	2347075-12	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Semi-Volatiles

Phenanthrene	0.02 ug/g	-	<0.02	-	-	-	-
Pyrene	0.02 ug/g	-	<0.02	-	-	-	-
2-Fluorobiphenyl	Surrogate	-	74.1%	-	-	-	-
Terphenyl-d14	Surrogate	-	64.9%	-	-	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP9-23-G3	TP10-23-G1	TP11-23-G1	TP12-23-G1/G2	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-13	2347075-14	2347075-15	2347075-16	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Physical Characteristics

% Solids	0.1 % by Wt.	71.6	94.5	89.9	91.3	-	-
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General Inorganics

SAR	0.01 N/A	0.47	0.09	0.10	0.21	-	-
Conductivity	5 uS/cm	235	183	119	227	-	-

Metals

Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	3.2	8.1	2.4	11.0	-	-
Barium	1.0 ug/g	398	40.5	27.0	87.2	-	-
Beryllium	0.5 ug/g	1.0	<0.5	<0.5	<0.5	-	-
Boron	5.0 ug/g	6.6	10.1	5.8	9.1	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	136	13.0	10.3	27.6	-	-
Cobalt	1.0 ug/g	25.0	8.9	4.4	15.0	-	-
Copper	5.0 ug/g	64.5	10.6	8.7	17.6	-	-
Lead	1.0 ug/g	7.8	18.6	5.0	23.3	-	-
Molybdenum	1.0 ug/g	<1.0	7.8	<1.0	11.8	-	-
Nickel	5.0 ug/g	77.6	18.2	8.6	30.2	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	1.0	<1.0	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	120	16.3	19.1	28.3	-	-
Zinc	20.0 ug/g	142	20.7	<20.0	34.8	-	-

Volatiles

Acetone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	-	-
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Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP9-23-G3	TP10-23-G1	TP11-23-G1	TP12-23-G1/G2	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-13	2347075-14	2347075-15	2347075-16	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

	TP9-23-G3	TP10-23-G1	TP11-23-G1	TP12-23-G1/G2	-	-
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Bromoform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Bromomethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Chlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Chloroform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Hexane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP9-23-G3	TP10-23-G1	TP11-23-G1	TP12-23-G1/G2	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-13	2347075-14	2347075-15	2347075-16	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	-	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Methylene Chloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Styrene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Trichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Vinyl chloride	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
4-Bromofluorobenzene	Surrogate	96.4%	76.9%	82.2%	91.1%	-	-
Toluene-d8	Surrogate	104%	94.5%	96.9%	96.1%	-	-
Dibromofluoromethane	Surrogate	109%	101%	105%	104%	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	30	<8	31	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	74	16	75	-	-

Semi-Volatiles

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP9-23-G3	TP10-23-G1	TP11-23-G1	TP12-23-G1/G2	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-13	2347075-14	2347075-15	2347075-16	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Semi-Volatiles

Acenaphthene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Acenaphthylene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Anthracene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Benzo [a] anthracene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Benzo [a] pyrene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Benzo [b] fluoranthene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Benzo [g,h,i] perylene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Benzo [k] fluoranthene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Chrysene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Fluoranthene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Fluorene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
1-Methylnaphthalene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
2-Methylnaphthalene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Methylnaphthalene (1&2)	0.04 ug/g	-	<0.04	<0.04	<0.04	-	-
Naphthalene	0.01 ug/g	-	<0.01	<0.01	<0.01	-	-
Phenanthrene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
Pyrene	0.02 ug/g	-	<0.02	<0.02	<0.02	-	-
2-Fluorobiphenyl	Surrogate	-	91.6%	73.8%	76.7%	-	-
Terphenyl-d14	Surrogate	-	72.4%	62.9%	63.6%	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP13-23-G3	TP14-23-G3	TP15-23-G1	TP16-23-G2	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-17	2347075-18	2347075-19	2347075-20	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Physical Characteristics

% Solids	0.1 % by Wt.	77.4	72.2	92.6	95.3	-	-
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General Inorganics

SAR	0.01 N/A	0.62	0.20	0.08	0.07	-	-
Conductivity	5 uS/cm	276	270	169	111	-	-
pH	0.05 pH Units	6.86	-	-	-	-	-

Metals

Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	2.2	3.4	6.1	7.4	-	-
Barium	1.0 ug/g	243	394	150	11.3	-	-
Beryllium	0.5 ug/g	0.7	1.1	<0.5	<0.5	-	-
Boron	5.0 ug/g	<5.0	5.2	10.0	5.1	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	84.9	133	21.7	7.9	-	-
Cobalt	1.0 ug/g	13.2	25.8	8.7	6.3	-	-
Copper	5.0 ug/g	33.4	52.9	14.8	5.4	-	-
Lead	1.0 ug/g	5.6	7.8	19.3	14.2	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	2.8	5.0	-	-
Nickel	5.0 ug/g	43.8	77.3	18.3	12.9	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	1.0	1.0	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	78.5	120	23.8	<10.0	-	-
Zinc	20.0 ug/g	91.3	135	32.2	<20.0	-	-

Volatiles

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP13-23-G3	TP14-23-G3	TP15-23-G1	TP16-23-G2	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-17	2347075-18	2347075-19	2347075-20	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	0.11	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	0.11	<0.05	-	-
Toluene-d8	Surrogate	105%	107%	92.5%	91.6%	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	19	11	8	23	-	-
F4 PHCs (C34-C50)	6 ug/g	93	32	15	79	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP16-23-G3	SP-G1	SP-G4	SP-G5	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-21	2347075-22	2347075-23	2347075-24	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Physical Characteristics

% Solids	0.1 % by Wt.	72.5	85.4	88.6	81.3	-	-
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General Inorganics

SAR	0.01 N/A	0.18	1.11	2.70	2.51	-	-
Conductivity	5 uS/cm	170	288	366	370	-	-
pH	0.05 pH Units	-	-	-	7.30	-	-

Metals

Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	3.5	2.8	2.9	3.0	-	-
Barium	1.0 ug/g	435	133	117	151	-	-
Beryllium	0.5 ug/g	0.9	0.5	<0.5	0.5	-	-
Boron	5.0 ug/g	6.6	6.0	6.3	6.5	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	149	43.8	35.2	45.9	-	-
Cobalt	1.0 ug/g	26.6	9.1	8.9	10.2	-	-
Copper	5.0 ug/g	73.3	27.1	23.0	27.2	-	-
Lead	1.0 ug/g	7.6	21.4	18.5	15.8	-	-
Molybdenum	1.0 ug/g	1.4	1.1	<1.0	<1.0	-	-
Nickel	5.0 ug/g	84.5	25.1	22.7	27.5	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	<1.0	<1.0	1.2	-	-
Vanadium	10.0 ug/g	129	43.3	40.7	48.2	-	-
Zinc	20.0 ug/g	151	114	54.9	79.7	-	-

Volatiles

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	TP16-23-G3	SP-G1	SP-G4	SP-G5	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-21	2347075-22	2347075-23	2347075-24	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	104%	93.5%	95.7%	94.5%	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	28	6	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	32	50	67	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	137 [1]	29	26	-	-
F4G PHCs (gravimetric)	50 ug/g	-	304	-	-	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	DUP1	DUP2	DUP3	DUP4	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-25	2347075-26	2347075-27	2347075-28	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Physical Characteristics

% Solids	0.1 % by Wt.	86.0	94.8	90.4	88.6	-	-
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General Inorganics

SAR	0.01 N/A	3.86	0.10	0.47	2.81	-	-
Conductivity	5 uS/cm	405	164	111	364	-	-
pH	0.05 pH Units	-	-	7.33	-	-	-

Metals

Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	1.1	7.7	1.9	2.7	-	-
Barium	1.0 ug/g	22.7	67.2	27.6	86.6	-	-
Beryllium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Boron	5.0 ug/g	5.4	10.3	7.1	7.3	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	12.1	9.9	8.4	25.6	-	-
Cobalt	1.0 ug/g	3.5	7.7	4.1	6.8	-	-
Copper	5.0 ug/g	5.3	7.7	11.9	17.3	-	-
Lead	1.0 ug/g	3.6	16.5	3.3	14.6	-	-
Molybdenum	1.0 ug/g	<1.0	5.2	<1.0	<1.0	-	-
Nickel	5.0 ug/g	8.4	15.4	8.2	17.6	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	15.6	10.2	14.3	31.0	-	-
Zinc	20.0 ug/g	25.5	28.8	<20.0	41.1	-	-

Volatiles

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	DUP1	DUP2	DUP3	DUP4	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-25	2347075-26	2347075-27	2347075-28	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

	MDL/Units	DUP1	DUP2	DUP3	DUP4	-	-
Acetone	0.50 ug/g	-	-	<0.50	-	-	-
Benzene	0.02 ug/g	-	-	<0.02	-	-	-
Bromodichloromethane	0.05 ug/g	-	-	<0.05	-	-	-
Bromoform	0.05 ug/g	-	-	<0.05	-	-	-
Bromomethane	0.05 ug/g	-	-	<0.05	-	-	-
Carbon Tetrachloride	0.05 ug/g	-	-	<0.05	-	-	-
Chlorobenzene	0.05 ug/g	-	-	<0.05	-	-	-
Chloroform	0.05 ug/g	-	-	<0.05	-	-	-
Dibromochloromethane	0.05 ug/g	-	-	<0.05	-	-	-
Dichlorodifluoromethane	0.05 ug/g	-	-	<0.05	-	-	-
1,2-Dichlorobenzene	0.05 ug/g	-	-	<0.05	-	-	-
1,3-Dichlorobenzene	0.05 ug/g	-	-	<0.05	-	-	-
1,4-Dichlorobenzene	0.05 ug/g	-	-	<0.05	-	-	-
1,1-Dichloroethane	0.05 ug/g	-	-	<0.05	-	-	-
1,2-Dichloroethane	0.05 ug/g	-	-	<0.05	-	-	-
1,1-Dichloroethylene	0.05 ug/g	-	-	<0.05	-	-	-
cis-1,2-Dichloroethylene	0.05 ug/g	-	-	<0.05	-	-	-
trans-1,2-Dichloroethylene	0.05 ug/g	-	-	<0.05	-	-	-
1,2-Dichloropropane	0.05 ug/g	-	-	<0.05	-	-	-
cis-1,3-Dichloropropylene	0.05 ug/g	-	-	<0.05	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	-	-	<0.05	-	-	-
1,3-Dichloropropene, total	0.05 ug/g	-	-	<0.05	-	-	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	-	-	<0.05	-	-	-
Ethylbenzene	0.05 ug/g	-	-	<0.05	-	-	-
Hexane	0.05 ug/g	-	-	<0.05	-	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	DUP1	DUP2	DUP3	DUP4	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-25	2347075-26	2347075-27	2347075-28	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	-	<0.50	-	-
Methyl Isobutyl Ketone	0.50 ug/g	-	-	<0.50	-	-
Methyl tert-butyl ether	0.05 ug/g	-	-	<0.05	-	-
Methylene Chloride	0.05 ug/g	-	-	<0.05	-	-
Styrene	0.05 ug/g	-	-	<0.05	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	-	<0.05	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	-	<0.05	-	-
Tetrachloroethylene	0.05 ug/g	-	-	<0.05	-	-
Toluene	0.05 ug/g	-	-	<0.05	-	-
1,1,1-Trichloroethane	0.05 ug/g	-	-	<0.05	-	-
1,1,2-Trichloroethane	0.05 ug/g	-	-	<0.05	-	-
Trichloroethylene	0.05 ug/g	-	-	<0.05	-	-
Trichlorofluoromethane	0.05 ug/g	-	-	<0.05	-	-
Vinyl chloride	0.02 ug/g	-	-	<0.02	-	-
m,p-Xylenes	0.05 ug/g	-	-	<0.05	-	-
o-Xylene	0.05 ug/g	-	-	<0.05	-	-
Xylenes, total	0.05 ug/g	-	-	<0.05	-	-
Dibromofluoromethane	Surrogate	-	-	107%	-	-
4-Bromofluorobenzene	Surrogate	-	-	83.7%	-	-
Toluene-d8	Surrogate	-	-	90.6%	-	-
Benzene	0.02 ug/g	<0.02	<0.02	-	<0.02	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	<0.05	-
Toluene	0.05 ug/g	<0.05	<0.05	-	<0.05	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	<0.05	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	<0.05	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	DUP1	DUP2	DUP3	DUP4	-	-
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-25	2347075-26	2347075-27	2347075-28	-	-
Matrix:	Soil	Soil	Soil	Soil	-	-
MDL/Units						

Volatiles

Xylenes, total	0.05 ug/g	<0.05	<0.05	-	<0.05	-	-
Toluene-d8	Surrogate	99.4%	97.7%	-	97.0%	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	7	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	94	33	32	81	-	-
F4 PHCs (C34-C50)	6 ug/g	38	22	17	44	-	-

Semi-Volatiles

Acenaphthene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Acenaphthylene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Anthracene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Benzo [a] anthracene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Chrysene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Fluorene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	<0.02	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	<0.04	-	-	-	-
Naphthalene	0.01 ug/g	<0.01	<0.01	-	-	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Client ID:	DUP1	DUP2	DUP3	DUP4		
Sample Date:	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	16-Nov-23 09:00	-	-
Sample ID:	2347075-25	2347075-26	2347075-27	2347075-28		
Matrix:	Soil	Soil	Soil	Soil		
MDL/Units						

Semi-Volatiles

Phenanthrene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Pyrene	0.02 ug/g	<0.02	<0.02	-	-	-	-
2-Fluorobiphenyl	Surrogate	64.4%	81.2%	-	-	-	-
Terphenyl-d14	Surrogate	54.3%	66.5%	-	-	-	-

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Conductivity	ND	5	uS/cm					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G PHCs (gravimetric)	ND	50	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					

Certificate of Analysis

Report Date: 24-Nov-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.887</i>		%	<i>66.5</i>	<i>50-140</i>			
<i>Surrogate: Terphenyl-d14</i>	<i>0.703</i>		%	<i>52.7</i>	<i>50-140</i>			
Volatiles								
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					

Certificate of Analysis

Report Date: 24-Nov-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1-Dichloroethylene	ND	0.05	ug/g					
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
<i>Surrogate: 4-Bromofluorobenzene</i>	2.73		%	85.3	50-140			
<i>Surrogate: Dibromofluoromethane</i>	3.37		%	105	50-140			
<i>Surrogate: Toluene-d8</i>	2.89		%	90.3	50-140			
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					

Certificate of Analysis

Report Date: 24-Nov-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
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	2.89		%	90.3	50-140			

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	2.99	0.01	N/A	3.28			9.3	30	
Conductivity	933	5	uS/cm	924			0.9	5	
pH	6.95	0.05	pH Units	6.86			1.3	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	1.6	1.0	ug/g	1.5			7.5	30	
Barium	27.7	1.0	ug/g	29.3			5.4	30	
Beryllium	ND	0.5	ug/g	ND			NC	30	
Boron	ND	5.0	ug/g	ND			NC	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium	16.3	5.0	ug/g	16.0			2.3	30	
Cobalt	3.9	1.0	ug/g	4.2			5.1	30	
Copper	6.3	5.0	ug/g	6.5			3.3	30	
Lead	4.7	1.0	ug/g	4.7			0.6	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	9.2	5.0	ug/g	9.5			2.5	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	23.7	10.0	ug/g	23.5			0.4	30	
Zinc	29.5	20.0	ug/g	30.2			2.4	30	
Physical Characteristics									
% Solids	82.2	0.1	% by Wt.	84.4			2.7	25	
Semi-Volatiles									

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	ND	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
<i>Surrogate: 2-Fluorobiphenyl</i>	1.11		%		73.7	50-140			
<i>Surrogate: Terphenyl-d14</i>	0.923		%		61.3	50-140			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	3.31		%		90.8	50-140			

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<i>Surrogate: Dibromofluoromethane</i>	3.79		%		104	50-140			
<i>Surrogate: Toluene-d8</i>	3.41		%		93.7	50-140			
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
<i>Surrogate: Toluene-d8</i>	3.41		%		93.7	50-140			

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	190	7	ug/g	ND	94.8	85-115			
F2 PHCs (C10-C16)	114	4	ug/g	ND	120	60-140			
F3 PHCs (C16-C34)	289	8	ug/g	ND	124	60-140			
F4 PHCs (C34-C50)	189	6	ug/g	ND	129	60-140			
F4G PHCs (gravimetric)	960	50	ug/g	ND	96.0	80-120			
Metals									
Antimony	35.8	1.0	ug/g	ND	71.6	70-130			
Arsenic	52.5	1.0	ug/g	ND	104	70-130			
Barium	58.1	1.0	ug/g	11.7	92.8	70-130			
Beryllium	53.9	0.5	ug/g	ND	108	70-130			
Boron	52.0	5.0	ug/g	ND	102	70-130			
Cadmium	48.8	0.5	ug/g	ND	97.5	70-130			
Chromium	57.8	5.0	ug/g	6.4	103	70-130			
Cobalt	53.8	1.0	ug/g	1.7	104	70-130			
Copper	53.9	5.0	ug/g	ND	103	70-130			
Lead	52.3	1.0	ug/g	1.9	101	70-130			
Molybdenum	49.4	1.0	ug/g	ND	98.5	70-130			
Nickel	55.6	5.0	ug/g	ND	104	70-130			
Selenium	47.9	1.0	ug/g	ND	95.8	70-130			
Silver	44.3	0.3	ug/g	ND	88.6	70-130			
Thallium	48.5	1.0	ug/g	ND	97.0	70-130			
Uranium	51.7	1.0	ug/g	ND	103	70-130			
Vanadium	60.1	10.0	ug/g	ND	101	70-130			
Zinc	60.8	20.0	ug/g	ND	97.5	70-130			
Semi-Volatiles									
Acenaphthene	0.190	0.02	ug/g	ND	101	50-140			
Acenaphthylene	0.212	0.02	ug/g	ND	112	50-140			
Anthracene	0.229	0.02	ug/g	ND	121	50-140			
Benzo [a] anthracene	0.210	0.02	ug/g	ND	112	50-140			
Benzo [a] pyrene	0.150	0.02	ug/g	ND	79.7	50-140			

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [b] fluoranthene	0.200	0.02	ug/g	ND	106	50-140			
Benzo [g,h,i] perylene	0.164	0.02	ug/g	ND	87.1	50-140			
Benzo [k] fluoranthene	0.209	0.02	ug/g	ND	111	50-140			
Chrysene	0.199	0.02	ug/g	ND	106	50-140			
Dibenzo [a,h] anthracene	0.158	0.02	ug/g	ND	83.9	50-140			
Fluoranthene	0.241	0.02	ug/g	ND	128	50-140			
Fluorene	0.191	0.02	ug/g	ND	102	50-140			
Indeno [1,2,3-cd] pyrene	0.172	0.02	ug/g	ND	91.4	50-140			
1-Methylnaphthalene	0.161	0.02	ug/g	ND	85.5	50-140			
2-Methylnaphthalene	0.174	0.02	ug/g	ND	92.3	50-140			
Naphthalene	0.172	0.01	ug/g	ND	91.4	50-140			
Phenanthrene	0.199	0.02	ug/g	ND	106	50-140			
Pyrene	0.242	0.02	ug/g	ND	129	50-140			
<i>Surrogate: 2-Fluorobiphenyl</i>	1.32		%		87.4	50-140			
<i>Surrogate: Terphenyl-d14</i>	1.03		%		68.5	50-140			
Volatiles									
Acetone	10.9	0.50	ug/g	ND	109	50-140			
Benzene	2.91	0.02	ug/g	ND	72.7	60-130			
Bromodichloromethane	3.87	0.05	ug/g	ND	96.9	60-130			
Bromoform	4.18	0.05	ug/g	ND	105	60-130			
Bromomethane	4.20	0.05	ug/g	ND	105	50-140			
Carbon Tetrachloride	4.11	0.05	ug/g	ND	103	60-130			
Chlorobenzene	3.54	0.05	ug/g	ND	88.5	60-130			
Chloroform	3.54	0.05	ug/g	ND	88.6	60-130			
Dibromochloromethane	4.27	0.05	ug/g	ND	107	60-130			
Dichlorodifluoromethane	4.95	0.05	ug/g	ND	124	50-140			
1,2-Dichlorobenzene	3.54	0.05	ug/g	ND	88.5	60-130			
1,3-Dichlorobenzene	3.41	0.05	ug/g	ND	85.2	60-130			
1,4-Dichlorobenzene	4.44	0.05	ug/g	ND	111	60-130			
1,1-Dichloroethane	4.44	0.05	ug/g	ND	111	60-130			
1,2-Dichloroethane	4.43	0.05	ug/g	ND	111	60-130			

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1-Dichloroethylene	4.59	0.05	ug/g	ND	115	60-130			
cis-1,2-Dichloroethylene	2.69	0.05	ug/g	ND	67.3	60-130			
trans-1,2-Dichloroethylene	3.20	0.05	ug/g	ND	80.1	60-130			
1,2-Dichloropropane	2.82	0.05	ug/g	ND	70.5	60-130			
cis-1,3-Dichloropropylene	3.10	0.05	ug/g	ND	77.4	60-130			
trans-1,3-Dichloropropylene	2.87	0.05	ug/g	ND	71.7	60-130			
Ethylbenzene	3.35	0.05	ug/g	ND	83.8	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	2.82	0.05	ug/g	ND	70.6	60-130			
Hexane	3.08	0.05	ug/g	ND	76.9	60-130			
Methyl Ethyl Ketone (2-Butanone)	10.4	0.50	ug/g	ND	104	50-140			
Methyl Isobutyl Ketone	7.05	0.50	ug/g	ND	70.5	50-140			
Methyl tert-butyl ether	10.9	0.05	ug/g	ND	109	50-140			
Methylene Chloride	4.44	0.05	ug/g	ND	111	60-130			
Styrene	3.06	0.05	ug/g	ND	76.5	60-130			
1,1,1,2-Tetrachloroethane	4.36	0.05	ug/g	ND	109	60-130			
1,1,2,2-Tetrachloroethane	3.46	0.05	ug/g	ND	86.4	60-130			
Tetrachloroethylene	3.40	0.05	ug/g	ND	85.1	60-130			
Toluene	3.57	0.05	ug/g	ND	89.2	60-130			
1,1,1-Trichloroethane	3.76	0.05	ug/g	ND	94.0	60-130			
1,1,2-Trichloroethane	3.71	0.05	ug/g	ND	92.8	60-130			
Trichloroethylene	3.70	0.05	ug/g	ND	92.6	60-130			
Trichlorofluoromethane	4.99	0.05	ug/g	ND	125	50-140			
Vinyl chloride	4.31	0.02	ug/g	ND	108	50-140			
m,p-Xylenes	8.17	0.05	ug/g	ND	102	60-130			
o-Xylene	4.40	0.05	ug/g	ND	110	60-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	2.24		%		70.1	50-140			
<i>Surrogate: Dibromofluoromethane</i>	2.21		%		69.0	50-140			
<i>Surrogate: Toluene-d8</i>	2.27		%		70.8	50-140			
Benzene	2.91	0.02	ug/g	ND	72.7	60-130			
Ethylbenzene	3.35	0.05	ug/g	ND	83.8	60-130			
Toluene	3.57	0.05	ug/g	ND	89.2	60-130			

Certificate of Analysis

Report Date: 24-Nov-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	8.17	0.05	ug/g	ND	102	60-130			
o-Xylene	4.40	0.05	ug/g	ND	110	60-130			
Surrogate: Toluene-d8	2.27		%		70.8	50-140			

Certificate of Analysis

Report Date: 24-Nov-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 20-Nov-2023

Client PO: 58881

Project Description: PE5607

Qualifier Notes:

Sample Qualifiers :

- 1: GC-FID signal did not return to baseline by C50

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unless otherwise noted.

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

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.

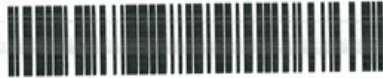
- F2 to F3 ranges corrected for appropriate PAHs where available.

- 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.

- When reported, data for F4G has been processed using a silica gel cleanup.

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 any circumstances be liable to you in connection with this work.



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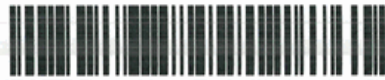
Parcel Order Number
(Lab Use Only)
8347075

Chain Of Custody
(Lab Use Only)

Client Name: Paterson Group Inc.	Project Ref: PE5607	Page 1 of 3
Contact Name: Jeremy Camposarcone	Quote #:	Turnaround Time <input type="checkbox"/> 1 day <input type="checkbox"/> 3 day <input type="checkbox"/> 2 day <input checked="" type="checkbox"/> Regular Date Required: _____
Address: 9 AURIGA DRIVE OTTAWA ON K2E 7T9	PO #: 58881	
Telephone: 613-226-7381	E-mail: kmunch@patersongroup.ca jcamposarcone@patersongroup.ca	

<input type="checkbox"/> REG 153/04 <input type="checkbox"/> REG 406/19		Other Regulation <input type="checkbox"/> REG 558 <input type="checkbox"/> PWQO <input type="checkbox"/> CCME <input type="checkbox"/> MISA <input type="checkbox"/> SU - Sani <input type="checkbox"/> SU - Storm Mun: _____ <input type="checkbox"/> Other: _____		Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)																																																																																																																																																																																																																																																																														
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Comments:			Method of Delivery: Paracel Courier		
Relinquished By (Sign): <i>[Signature]</i>	Received By Driver/Depot:	Received at Lab: HP	Verified By: Hina		
Relinquished By (Print): Jeremy Camposarcone	Date/Time:	Date/Time: Nov 20, 23 11:40	Date/Time: Nov 20, 23 11:44		
Date/Time: 11/20/2023	Temperature: _____ °C	Temperature: 13.6 °C	pH Verified: <input type="checkbox"/>	By: _____	



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Parcel Order Number
(Lab Use Only)
2347075

Chain Of Custody
(Lab Use Only)

Client Name: Paterson Group Inc.	Project Ref: PE5607	Page 2 of 3
Contact Name: Jeremy Camposarcone	Quote #:	Turnaround Time <input type="checkbox"/> 1 day <input type="checkbox"/> 3 day <input type="checkbox"/> 2 day <input checked="" type="checkbox"/> Regular Date Required: _____
Address: 9 AURIGA DRIVE OTTAWA ON K2E 7T9	PO #: 58881	
Telephone: 613-226-7381	E-mail: kmunch@patersongroup.ca jcamposarcone@patersongroup.ca	

<input type="checkbox"/> REG 153/04 <input type="checkbox"/> REG 406/19 Other Regulation		Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)		Required Analysis																	
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Sample ID/Location Name							Date	Time													
1	TP8-23-G3	S		2	11/16/2023			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
2	TP9-23-G1	S		2	11/16/2023			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
3	TP9-23-G3	S		2	11/16/2023			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
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6	TP12-23-G1/G2	S		2	11/16/2023			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
7	TP13-23-G3	S		2	11/16/2023			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
8	TP14-23-G3	S		2	11/16/2023			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
9	TP15-23-G1	S		2	11/16/2023			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
10	TP16-23-G2	S		2	11/16/2023			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				

Comments:			Method of Delivery: Parcel Courier		
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Relinquished By (Print): Jeremy Camposarcone	Date/Time:	Date/Time: Nov 20, 23 17:00	Date/Time: Nov 20, 23 17:50		
Date/Time: 11/20/2023	Temperature: °C	Temperature: 13.6 °C	pH Verified: <input type="checkbox"/>	By:	



Client Name: Paterson Group Inc.	Project Ref: PE5607	Page 3 of 3
Contact Name: Jeremy Camposarcone	Quote #:	Turnaround Time <input type="checkbox"/> 1 day <input type="checkbox"/> 3 day <input type="checkbox"/> 2 day <input checked="" type="checkbox"/> Regular Date Required: _____
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Telephone: 613-226-7381	E-mail: kmunch@patersongroup.ca jcamposarcone@patersongroup.ca	

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Sample ID/Location Name					Date	Time														
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2	SP-G1	S		2	11/16/2023			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	SP-G4	S		2	11/16/2023			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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5	DUP1	S		2	11/16/2023			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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7	DUP3	S		2	11/16/2023			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	DUP4	S		3	11/16/2023			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments:			Method of Delivery:		
Relinquished By (Sign): <i>[Signature]</i>	Received By Driver/Depot:	Received at Lab: HP	Verified By: <i>Paracel Courier</i>		
Relinquished By (Print): Jeremy Camposarcone	Date/Time:	Date/Time: Nov 20, 23 / 17:00	Date/Time: Nov 20, 23 / 17:55		
Date/Time: 11/20/2023	Temperature: _____ °C	Temperature: 13.6 °C	pH Verified: <input type="checkbox"/> By: _____		

Certificate of Analysis

Paterson Group Consulting Engineers (Ottawa)

9 Auriga Drive
Ottawa, ON K2E 7T9
Attn: Jeremy Camposarcone

Client PO: 58988
Project: PE5607
Custody:

Report Date: 6-Dec-2023
Order Date: 1-Dec-2023

Order #: 2348546

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

Parcel ID	Client ID
2348546-01	TP10-23-G1(2)

Approved By:



Mark Foto, M.Sc.

Lab Supervisor

Certificate of Analysis

Report Date: 06-Dec-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 1-Dec-2023

Client PO: 58988

Project Description: **PE5607**

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	5-Dec-23	5-Dec-23
Solids, %	CWS Tier 1 - Gravimetric	5-Dec-23	6-Dec-23

Certificate of Analysis

Report Date: 06-Dec-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 1-Dec-2023

Client PO: 58988

Project Description: PE5607

Client ID:	TP10-23-G1(2)	-	-	-	-
Sample Date:	01-Dec-23 09:00	-	-	-	-
Sample ID:	2348546-01	-	-	-	-
Matrix:	Soil	-	-	-	-
MDL/Units					

Physical Characteristics

% Solids	0.1 % by Wt.	83.2	-	-	-	-
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Metals

Antimony	1.0 ug/g	<1.0	-	-	-	-
Arsenic	1.0 ug/g	3.6	-	-	-	-
Barium	1.0 ug/g	57.0	-	-	-	-
Beryllium	0.5 ug/g	<0.5	-	-	-	-
Boron	5.0 ug/g	<5.0	-	-	-	-
Cadmium	0.5 ug/g	<0.5	-	-	-	-
Chromium	5.0 ug/g	19.0	-	-	-	-
Cobalt	1.0 ug/g	5.5	-	-	-	-
Copper	5.0 ug/g	13.0	-	-	-	-
Lead	1.0 ug/g	8.6	-	-	-	-
Molybdenum	1.0 ug/g	1.6	-	-	-	-
Nickel	5.0 ug/g	12.6	-	-	-	-
Selenium	1.0 ug/g	<1.0	-	-	-	-
Silver	0.3 ug/g	<0.3	-	-	-	-
Thallium	1.0 ug/g	<1.0	-	-	-	-
Uranium	1.0 ug/g	<1.0	-	-	-	-
Vanadium	10.0 ug/g	24.8	-	-	-	-
Zinc	20.0 ug/g	27.8	-	-	-	-

Certificate of Analysis

Report Date: 06-Dec-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 1-Dec-2023

Client PO: 58988

Project Description: PE5607

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					

Certificate of Analysis

Report Date: 06-Dec-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 1-Dec-2023

Client PO: 58988

Project Description: PE5607

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	8.6	1.0	ug/g	7.9			8.2	30	
Barium	87.5	1.0	ug/g	78.0			11.4	30	
Beryllium	0.8	0.5	ug/g	0.7			6.4	30	
Boron	16.2	5.0	ug/g	15.8			2.4	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium	25.5	5.0	ug/g	24.2			5.1	30	
Cobalt	11.5	1.0	ug/g	10.7			7.5	30	
Copper	21.3	5.0	ug/g	20.1			5.6	30	
Lead	10.7	1.0	ug/g	9.5			12.1	30	
Molybdenum	4.8	1.0	ug/g	4.8			1.4	30	
Nickel	33.1	5.0	ug/g	30.9			7.0	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	1.8	1.0	ug/g	1.7			5.8	30	
Vanadium	36.8	10.0	ug/g	34.7			5.9	30	
Zinc	59.2	20.0	ug/g	55.5			6.5	30	
Physical Characteristics									
% Solids	80.2	0.1	% by Wt.	82.0			2.2	25	

Certificate of Analysis

Report Date: 06-Dec-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 1-Dec-2023

Client PO: 58988

Project Description: PE5607

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	53.7	1.0	ug/g	3.2	101	70-130			
Barium	76.9	1.0	ug/g	31.2	91.4	70-130			
Beryllium	48.6	0.5	ug/g	ND	96.5	70-130			
Boron	51.2	5.0	ug/g	6.3	89.7	70-130			
Cadmium	46.7	0.5	ug/g	ND	93.1	70-130			
Chromium	61.9	5.0	ug/g	9.7	104	70-130			
Cobalt	52.7	1.0	ug/g	4.3	96.9	70-130			
Copper	54.8	5.0	ug/g	8.0	93.6	70-130			
Lead	50.2	1.0	ug/g	3.8	92.9	70-130			
Molybdenum	52.2	1.0	ug/g	1.9	101	70-130			
Nickel	61.7	5.0	ug/g	12.4	98.8	70-130			
Selenium	45.7	1.0	ug/g	ND	90.9	70-130			
Silver	43.3	0.3	ug/g	ND	86.5	70-130			
Thallium	45.7	1.0	ug/g	ND	91.1	70-130			
Uranium	48.1	1.0	ug/g	ND	94.8	70-130			
Vanadium	65.6	10.0	ug/g	13.9	103	70-130			
Zinc	67.9	20.0	ug/g	22.2	91.4	70-130			

Certificate of Analysis

Report Date: 06-Dec-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 1-Dec-2023

Client PO: 58988

Project Description: PE5607

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unless otherwise noted.

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

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 any circumstances be liable to you in connection with this work.



Parent Blvd.
K1G 4J8
17
parlabs.com
s.com

Parcel Order Number (Lab Use Only) <i>2348546</i>	Chain Of Custody (Lab Use Only)
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Client Name: Paterson Group Inc.	Project Ref: PE5607	Page <u>1</u> of <u>1</u>
Contact Name: Jeremy Camposarcone	Quote #:	Turnaround Time <input type="checkbox"/> 1 day <input type="checkbox"/> 3 day <input type="checkbox"/> 2 day <input checked="" type="checkbox"/> Regular Date Required: _____
Address: 9 AURIGA DRIVE OTTAWA ON K2E 7T9	PO #: 58988	
	E-mail: jcamposarcone@patersongroup.ca kmunch@patersongroup.ca	
Telephone: 613-226-7381		

<input checked="" type="checkbox"/> REG 153/04 <input type="checkbox"/> REG 406/19 Other Regulation <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Med/Fine <input type="checkbox"/> REG 558 <input type="checkbox"/> PWQO <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> CCME <input type="checkbox"/> MISA <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> SU - Sani <input type="checkbox"/> SU - Storm <input type="checkbox"/> Table _____ For RSC: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other: _____ Mun: _____		Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)	Required Analysis																		
Sample ID/Location Name		Matrix	Air Volume	# of Containers	Sample Taken		PHC F1-F4 + BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	pH							
1	TP10-23-G1(2)	S		1	Date	Time															
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Comments:			Method of Delivery: <i>Parcels 1 Courier</i>		
Relinquished By (Sign): <i>[Signature]</i>	Received By Driver/Depot:	Received at Lab: <i>HP</i>	Verified By: <i>[Signature]</i>		
Relinquished By (Print): Jeremy Camposarcone	Date/Time:	Date/Time: <i>Dec 1, 23 17:00</i>	Date/Time: <i>Dec 2 20 23 94</i>		
Date/Time: 12/1/2023	Temperature: _____ °C	Temperature: <i>16.1, 10.1 °C</i>	pH Verified: <input type="checkbox"/>	By: <i>NA</i>	

Certificate of Analysis

Paterson Group Consulting Engineers (Ottawa)

9 Auriga Drive
Ottawa, ON K2E 7T9
Attn: Jeremy Camposarcone

Client PO: 58989
Project: PE5607
Custody:

Report Date: 6-Dec-2023
Order Date: 1-Dec-2023

Order #: 2348547

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

Parcel ID	Client ID
2348547-01	TP12-23-G1/G2(2)

Approved By:



Mark Foto, M.Sc.

Lab Supervisor

Certificate of Analysis

Report Date: 06-Dec-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 1-Dec-2023

Client PO: 58989

Project Description: **PE5607**

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	5-Dec-23	5-Dec-23
Solids, %	CWS Tier 1 - Gravimetric	5-Dec-23	6-Dec-23

Certificate of Analysis

Report Date: 06-Dec-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 1-Dec-2023

Client PO: 58989

Project Description: PE5607

Client ID:	TP12-23-G1/G2(2)	-	-	-	-
Sample Date:	01-Dec-23 09:00	-	-	-	-
Sample ID:	2348547-01	-	-	-	-
Matrix:	Soil	-	-	-	-
MDL/Units					

Physical Characteristics

% Solids	0.1 % by Wt.	93.6	-	-	-	-
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Metals

Antimony	1.0 ug/g	<1.0	-	-	-	-
Arsenic	1.0 ug/g	2.0	-	-	-	-
Barium	1.0 ug/g	19.5	-	-	-	-
Beryllium	0.5 ug/g	<0.5	-	-	-	-
Boron	5.0 ug/g	<5.0	-	-	-	-
Cadmium	0.5 ug/g	<0.5	-	-	-	-
Chromium	5.0 ug/g	7.0	-	-	-	-
Cobalt	1.0 ug/g	4.0	-	-	-	-
Copper	5.0 ug/g	8.5	-	-	-	-
Lead	1.0 ug/g	2.3	-	-	-	-
Molybdenum	1.0 ug/g	<1.0	-	-	-	-
Nickel	5.0 ug/g	5.7	-	-	-	-
Selenium	1.0 ug/g	<1.0	-	-	-	-
Silver	0.3 ug/g	<0.3	-	-	-	-
Thallium	1.0 ug/g	<1.0	-	-	-	-
Uranium	1.0 ug/g	<1.0	-	-	-	-
Vanadium	10.0 ug/g	18.4	-	-	-	-
Zinc	20.0 ug/g	<20.0	-	-	-	-

Certificate of Analysis

Report Date: 06-Dec-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 1-Dec-2023

Client PO: 58989

Project Description: PE5607

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					

Certificate of Analysis

Report Date: 06-Dec-2023

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 1-Dec-2023

Client PO: 58989

Project Description: PE5607

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	8.6	1.0	ug/g	7.9			8.2	30	
Barium	87.5	1.0	ug/g	78.0			11.4	30	
Beryllium	0.8	0.5	ug/g	0.7			6.4	30	
Boron	16.2	5.0	ug/g	15.8			2.4	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium	25.5	5.0	ug/g	24.2			5.1	30	
Cobalt	11.5	1.0	ug/g	10.7			7.5	30	
Copper	21.3	5.0	ug/g	20.1			5.6	30	
Lead	10.7	1.0	ug/g	9.5			12.1	30	
Molybdenum	4.8	1.0	ug/g	4.8			1.4	30	
Nickel	33.1	5.0	ug/g	30.9			7.0	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	1.8	1.0	ug/g	1.7			5.8	30	
Vanadium	36.8	10.0	ug/g	34.7			5.9	30	
Zinc	59.2	20.0	ug/g	55.5			6.5	30	
Physical Characteristics									
% Solids	80.2	0.1	% by Wt.	82.0			2.2	25	

Certificate of Analysis

Report Date: 06-Dec-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 1-Dec-2023

Client PO: 58989

Project Description: PE5607

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Arsenic	53.7	1.0	ug/g	3.2	101	70-130			
Barium	76.9	1.0	ug/g	31.2	91.4	70-130			
Beryllium	48.6	0.5	ug/g	ND	96.5	70-130			
Boron	51.2	5.0	ug/g	6.3	89.7	70-130			
Cadmium	46.7	0.5	ug/g	ND	93.1	70-130			
Chromium	61.9	5.0	ug/g	9.7	104	70-130			
Cobalt	52.7	1.0	ug/g	4.3	96.9	70-130			
Copper	54.8	5.0	ug/g	8.0	93.6	70-130			
Lead	50.2	1.0	ug/g	3.8	92.9	70-130			
Molybdenum	52.2	1.0	ug/g	1.9	101	70-130			
Nickel	61.7	5.0	ug/g	12.4	98.8	70-130			
Selenium	45.7	1.0	ug/g	ND	90.9	70-130			
Silver	43.3	0.3	ug/g	ND	86.5	70-130			
Thallium	45.7	1.0	ug/g	ND	91.1	70-130			
Uranium	48.1	1.0	ug/g	ND	94.8	70-130			
Vanadium	65.6	10.0	ug/g	13.9	103	70-130			
Zinc	67.9	20.0	ug/g	22.2	91.4	70-130			

Certificate of Analysis

Report Date: 06-Dec-2023

Client: Paterson Group Consulting Engineers (Ottawa)

Order Date: 1-Dec-2023

Client PO: 58989

Project Description: PE5607

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

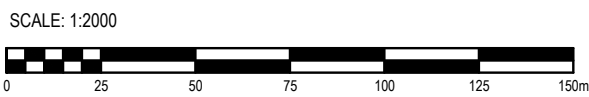
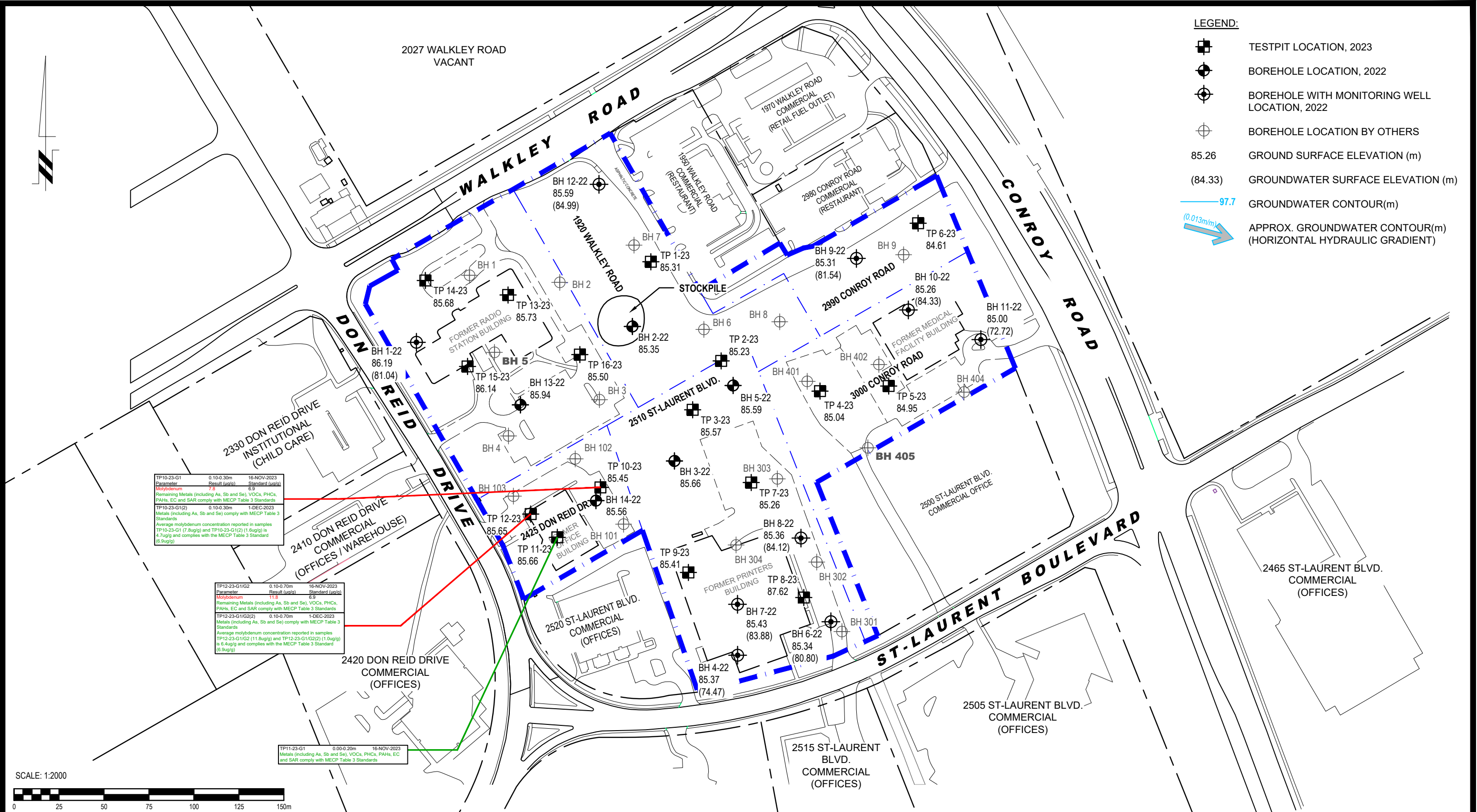
RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unless otherwise noted.

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

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 any circumstances be liable to you in connection with this work.



NO.	REVISIONS	DATE	INITIAL

CLARIDGE HOMES
EXCESS SOIL QUALITY ASSESSMENT
2502 & 2510 ST. LAURENT BLVD., 1890, 1900 & 1920 WALKLEY ROAD,
2425 DON REID DRIVE AND 2990 & 3000 CONROY ROAD
OTTAWA, ONTARIO

Title: **TEST HOLE LOCATION PLAN**

Scale:	1:2000	Date:	12/2023
Drawn by:	ZS	Report No.:	PE5607-3
Checked by:	JC	Dwg. No.:	PE5607-3
Approved by:	KM	Revision No.:	

p:\autocad\drawings\environmental\pe5607-3-testhole location plan (december 2023).dwg