Winnipeg

THE CITY OF WINNIPEG

APPENDIX A

Phase II Environmental Site Assessment and Remediation Action Plan for 849 Ravelston, June 2016

BID OPPORTUNITY NO. 874-2016

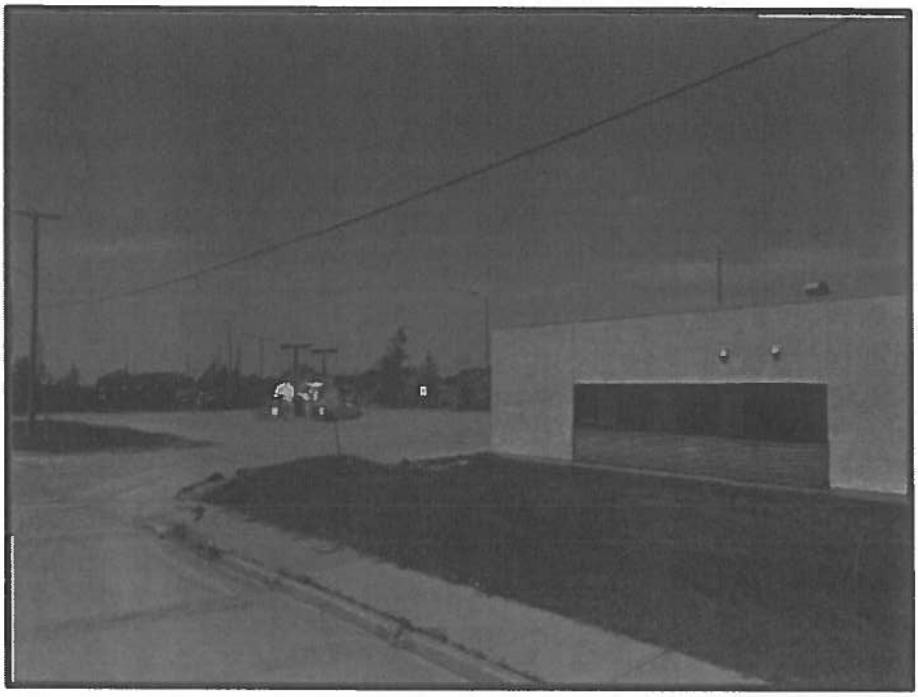
FORMER FUEL SITES SOIL REMEDIATION AT 849 RAVELSTON AND 1500 PLESSIS

Submitted To:

Winnipeg

PHASE II ESA

849 RAVELSTON AVENUE WEST, WINNIPEG, MANITOBA



JULY 2016

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1.0 INTRODUCTION

1.1 Terms of Reference

ENG-TECH Consulting Limited (ENG-TECH) was retained by City of Winnipeg to conduct a Phase II Environmental Site Assessment (ESA) near the abandoned Gasoline and Diesel above ground storage tanks (ASTs) and former underground storage tanks (ASTs) at 849 Ravelston Avenue in Winnipeg, Manitoba. The Site is located on Ravelston Avenue northwest of Plessis Road in the City of Winnipeg, Manitoba as shown in Figures 1 and 2, and Photographs 1 to 4 (Appendix B). Assessment is related to the area near the current aboveground diesel and gasoline storage tanks and the former underground storage tanks located to the northwest of the existing building, any previous tanks, pumps, and spillages beyond the areas of the AST's and UST's are outside this scope of work. In this report, the property will subsequently be referred to as the Site with the investigation limited to the area near the tanks as mentioned above.

ENG-TECH received authorization from Jennefer Larson to proceed with the Phase II ESA on May 5, 2016.

1.2 Objectives

The purpose of the Phase II ESA was to further delineate the presence or absence of petroleum hydrocarbons in the soil in the vicinity of current ASTs and pump islands and in the location of the former USTs and pump island. The land use of the Site is currently commercial, and being proposed for redeveloped having a mixture of commercial and residential buildings.

1.3 Scope of Work

The Phase II ESA involved the following:

- Clearance of underground utility services.
- A test hole drilling and soil sampling program for petroleum hydrocarbons, including field testing the soil samples for volatile hydrocarbon vapours and the collection of duplicate soil samples for petroleum hydrocarbon laboratory testing.
- A laboratory soil testing program for petroleum hydrocarbons (benzene, toluene, ethyl-benzene, xylene (BTEX), and fractions F1 to F4), glycols, and metals.
- An evaluation of the results.
- An ESA report outlining the work conducted and findings.

1.4 Methodology

The environmental investigation was conducted using guidelines and criteria outlined in publications from American Society for Testing and Materials (ASTM), the Canadian Council of Ministers of the Environment (CCME), Canadian Standards Association and Manitoba Conservation (formerly Manitoba Environment). A bibliography/reference list of the publications is attached.

2.0 SITE CONDITIONS

2.1 Site Location and Description

The Site is located on Ravelston Avenue northwest of Plessis Road in the City of Winnipeg, Manitoba as shown in Figures 1 and 2. The Site is approximately 6,344 square meters in plan, with buildings on Site which are currently unoccupied as the property is schedule for redevelopment, and registered in the City of Winnipeg under certificate of roll number 04005426500. The remainder of the Site is predominately covered with asphalt and limited grass area as shown in Figure 2.

2.2 Site Topography and Drainage

The Site is relatively flat with surface drainage directed overland to catch basin located throughout the Site and on Ravelston Avenue.

2.3 Site Geology and Groundwater

Local geological maps and water well logs show that the subsurface stratigraphy in this area of Winnipeg normally consists of fill soils (such as topsoil and granular), underlain by lacustrine silt and clay ranging in depth from 9.0 to 12.0 m. A deposit of silty till varying in thickness from 6 to 10 m is typically encountered between the lacustrine deposits and the underlain bedrock. Bedrock in this area of Winnipeg typically consists of dolomite with limestone beds of various thicknesses from the Selkirk Member of the Red River Formation. The bedrock formation was formed from the Paleozoic Era during the Ordovician Period.

Near surface groundwater elevations (perched groundwater) can exist at the Site and throughout the area, and will vary on a seasonal basis and from site to site. Perched groundwater elevations are predominantly controlled by site conditions, such as the type and thickness of fill soils. The near static groundwater elevation is encountered at approximately 6 m below existing grade in the underlain high plasticity lacustrine clay deposits. The near static groundwater elevation is controlled by the underlain bedrock aquifer. There are no aquifers above the bedrock. The potential for impact to the aquifer was considered unlikely due to the thickness of the underlain highly plastic clay deposits.

3.0 PHASE II ESA

3.1 Test Hole Drilling

On May 24, 2016 ENG-TECH supervised the drilling of a total of nine (9) test holes (TH1 to TH9) surrounding the gasoline and diesel AST's and the former UST's located northwest of the AST's. Test holes were drilled to a depth of 3.0 to 4.6 m below existing grade using a track mounted Geoprobe 7822DT drill rig equipped with 125 mm diameter solid stem continuous flight augers, owned and operated by Maple Leaf Drilling Ltd. The test holes were backfilled with the soil auger cuttings and bentonite, upon the completion of drilling. The test hole locations are shown on Figure 2, while stratigraphic logs outlining the soil and groundwater conditions are shown in Appendix A.

3.2 Soil Sampling Program

Duplicate soil samples (set of two) were collected at regular depth intervals and at stratigraphic changes from the test holes, and visually classified using the Unified Soil Classification System

(USCS). One of each duplicate set of soil samples collected was subjected to an Ambient Temperature Headspace (ATH) vapour test using a RKI Eagle calibrated using hexane. Briefly, the procedures used for ATH vapour testing were as follows:

- Collect a soil sample and remove the perimeter edges. Cut the sample into small pieces and place them into a plastic sealable bag.
- Induce air into the bag such that the bag is taught and seal the bag.
- Allow the vapours emanating from the soil to accumulate in the headspace of the bag at an ambient temperature for about 15 minutes.
- Measure the hydrocarbon vapour concentration in the headspace of the bag by placing the probe of the RKI Eagle into the bag.

The remaining duplicate soil sample from each set collected had the perimeters edges removed and the sample examined for the presence of petroleum hydrocarbon odours and staining, and then:

- If the remaining duplicate soil sample had visual signs of petroleum hydrocarbon staining or petroleum hydrocarbon odours detected, then the soil sample was placed in a clean glass jar and sealed with a Teflon lined lid and placed in a cooler packed with ice.
- If no visual signs of staining or odours were detected then the duplicate soil sample was placed in a sealed bag with a minimal volume of air, and then placed in a cooler packed with ice for potential submission for laboratory analysis after review of the ATH vapour concentration.
- The recorded ATH Vapour concentrations for all samples are reviewed, and if the duplicate soil samples with the highest elevated concentrations had not been placed in jars, then the duplicate soil samples in the coolers were removed and the soil from the sealed bags placed in clean glass jars, sealed with Teflon lids and placed back in the cooler packed with ice.

Upon the completion of the field work, the soil samples in jars in the cooler packed with the ice were transported to ENG-TECH's office, then to ALS Laboratory Group in Winnipeg, Manitoba for analytical testing of petroleum hydrocarbons.

3.3 Analytical Analyses

ATH vapour concentrations (ppm) collected in the field are reported on the test hole logs, and the readings ranged from zero (0) to 240 ppm. Possible slight hydrocarbon odour and/or staining was observed at TH5, TH6, and TH9.

Eight (8) representative soil samples (based on headspace) were selected and submitted to ALS Laboratory Group (an accredited laboratory) and tested for BTEX and fractions F1 to F4. The results are shown in Tables 1 to 4, while a copy of the results from ALS Laboratory Group is shown in Appendix C.

3.4 Remediation Criteria

The results from the analytical analyses were compared to the values outlined in the most recent Canadian Council of the Ministers of the Environment (CCME) publications. The

petroleum hydrocarbons BTEX and fractions F1 to F4 results were compared to the CCME generic and vapour inhalation criteria for commercial land use. Generic criteria for commercial land use would not restrict Site commercial activities. Given the potential for future development of the Site as residential land-use an assessment of the analytical results for BTEX and fractions F1 to F4 following the CCME generic and vapour inhalation criteria for residential land use is warranted.

3.5 Discussion

Stratigraphy

Aboveground Storage Tank and Pump Island

Overall, the stratigraphy at TH1 to TH4 in the vicinity of the AST's consisted of 200 mm thick layer of concrete underlain by a 50 mm thick layer of gravel fill, and was followed by a 965 mm thick layer of clay fill which was underlain by native clay to the depth explored. The gravel fill was medium brown, moist, medium dense, poorly graded, and fine grained, while the clay fill was black, moist, firm, medium plastic, and contained trace silt. The underlying native clay was medium, moist, firm, highly plastic, and contained trace silt.

Former Underground Storage Tank Nest

The stratigraphy at TH5 and TH6 consisted of 2.30 to 4.1 m thick layer of pea gravel which was followed by clay to the depth explored, except at TH6 where auger refusal occured 4.10 m below grade on suspected concrete rubble. The pea gravel encountered was medium brown, moist to wet, loose, poorly graded, medium to fine grained, with a slight hydrocarbon odour detected at 0.8 m below grade. The native clay layer encountered at TH5 at 2.30 m below grade was dark brown, moist, firm, medium plastic, and contained trace silt.

The stratigraphy at TH7 and TH8 consisted of 50 mm thick layer of gravel fill that was underlain by a 1.17 m thick layer of clay fill then native clay to the depth explored. The gravel fill layer was medium brown, moist, medium dense, poorly graded, fine grained while the clay fill layer was dark brown, moist, firm, medium plastic, and contained trace silt. The native clay was dark brown, moist, firm, medium plastic, and contained trace silt.

The stratigraphy at TH9 consisted of a 50 mm thick layer of gravel fill which was followed by a 1.17 m thick layer of clay fill then native clay to the depth explored. The gravel fill and clay fill were similar to what was encountered at TH7 and TH8. The native clay was dark brown, moist, firm, medium plastic, and contained trace silt.

Groundwater

TH1 to TH4 and TH7 to TH9 were dry and no sloughing was encountered at the time of drilling, while sloughing and seepage was encountered within the pea gravel at TH5 and TH6 at the time of the drilling.

ATH Vapours

The ATH vapour readings are shown on the test hole summary logs. The vapour concentrations ranged from zero (0) to 240 ppm. slight hydrocarbon odour and/or possible staining was observed at TH5, TH6, and TH9.

Analytical Results

The petroleum hydrocarbons BTEX and fractions F1 to F4 results were compared to the CCME generic and vapour inhalation criteria for both commercial and residential land use due to the potential for future residential development of the Site. Generic criteria for commercial land use would not restrict Site commercial activities.

In the generic situations for both commercial and residential land use the soil sample from TH4 –S4 at 3 m was over the CCME criterion for benzene and TH5-S2 at 0.8 m was over the F2 criterion as shown on Table 1. When the results were compared to vapour inhalation for commercial and residential both sample results were below the applicable CCME criteria as shown on Tables 2 and 4. The remaining samples collected and analysed for petroleum hydrocarbon were all below the laboratory detection limits and therefore below the applicable commercial and residential CCME guidelines under the generic and vapour inhalation criteria.

3.6 Conclusions

Petroleum hydrocarbon concentrations from the soil samples tested from TH4 and TH5 were above select CCME criteria for commercial and residential land uses under the generic situation, but were below the applicable vapour inhalation criteria for both commercial and residential land uses. Therefore, no further action is warranted at this time in the vicinity of the ASTs and former USTs.

Additional sampling and testing can be performed beneath the tanks and pump island during their removal as per the Guideline for Dismantling and Removal of Petroleum Storage Tanks Systems (Manitoba Conservation February 2007), with extra attention in the area of TH4 due to the presence of benzene.

4.0 CLOSURE

The conclusion and recommendations presented in this report were based on the scope of work outlined for the purpose of the investigation, and were prepared in accordance with accepted professional engineering/geo-science principles and practices. However, as with any environmental site assessment the intent is to identify and address, not eliminate, potential environmental concerns.

The observations made at the Site do not apply to areas which could not be observed. In addition, other materials or compounds not investigated or addressed or beyond the scope of work could be present at the Site. If this occurs, ENG-TECH Consulting Limited must be notified to determine whether modification to any part of this report should be conducted. If you have any questions or concerns presented herein, please contact the undersigned.

Sincerely,
ENG-TECH Consulting Limited

PROVINCE OF MANITOBA
C.D. HRYHORUK
REGISTERED PROFESSIONAL ENGINEER
July 13/16

Clark Hryhoruk, M.Sc., P.Eng.
President

CDH/tdr

Prepared By,

Trevor Robertson, B.Sc., EP., C.E.T
Environmental Professional

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LIST OF TABLES

TABLE 1
PETROLEUM HYDROCARBONS IN SOIL (COMMERCIAL SITE CRITERIA FOR GENERIC SITUATION) CONSIDERING INCREMENTAL CANCER RISK OF 10^{-6} FOR BENZENE

Sample IDs	Parameters								
	BTEX				Total Hydrocarbons				
	Benzene	Toluene	Ethyl Benzene	Xylenes (total)	F1 (C6-C10)	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Total Hydrocarbons
Soil samples obtained from Site (May 24, 2016)									
TH1 – S2@ 0.8 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH2 – S4 @ 2.3 m	0.0053	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH4 – S4 @ 2.3 m	**[0.0072]**	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH4- S5@ 3.0 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH5-S2@ 0.8 m	<0.0050	<0.050	<0.015	<0.071	54	**[543]**	843	150	2590
TH5-S4@ 2.3 m	<0.0050	<0.050	<0.015	<0.071	<10	68	75	<50	143
TH7-S3@ 1.5 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH9-S1@ 0.3 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	94	90	184
1999 CCME *Environmental Quality Guidelines* with 2004 update for Soil at Commercial Site for Generic Situation									
Soil Quality Guideline for Human Health for Fine-grained Surface Soil	0.0068	0.08	0.018	2.4	—	—	—	—	—
Soil Quality Guideline for Human Health for Fine-grained Subsoil	0.0068	0.08	0.018	2.4	—	—	—	—	—
Soil Quality Guideline for Human Health for Coarse-grained Surface Soil	0.030	0.37	0.082	11	—	—	—	—	—
Soil Quality Guideline for Human Health for Coarse-grained Subsoil	0.030	0.37	0.082	11	—	—	—	—	—
2008 CCME *Canada-Wide Standards for Petroleum Hydrocarbons (PHCs) in Soil* at Commercial Site for Generic Situation									
Soil Criteria for Fine-grained Surface Soils	—	—	—	—	320	260	2500	6600	—
Soil Criteria for Fine-grained Surface Soils (where protection of potable groundwater applicable)	—	—	—	—	170	230	2500	6600	—
Soil Criteria for Coarse-grained Surface Soils	—	—	—	—	320	260	1700	3300	—
Soil Criteria for Coarse-grained Surface Soils (where protection of potable groundwater applicable)	—	—	—	—	240	260	1700	3300	—
2008 CCME *Canada-Wide Standards for Petroleum Hydrocarbons (PHCs) in Soil* at Commercial Site for Management Limit									
Soil Criteria for Fine-grained Subsoils	—	—	—	—	800	1000	5000	10000	—
Soil Criteria for Coarse-grained Subsoils	—	—	—	—	700	1000	3500	10000	—

Notes:
1. All concentrations are in mg/kg (ppm).
2. The soil at the site consisted of coarse-grained material
3. Coarse means coarse-textured soil having a median grain size of >75 µm.
4. Concentration exceeding CCME criteria for Site = **[413]**

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TABLE 2
PETROLEUM HYDROCARBONS IN SOIL (COMMERCIAL SITE FOR VAPOUR INHALATION)
CONSIDERING INCREMENTAL CANCER RISK OF 10-6 FOR BENZENE

Sample IDs	Parameters								
	BTEX				Total Hydrocarbons				
	Benzene	Toluene	Ethyl Benzene	Xylenes (total)	F1 (C6-C10)	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Total Hydrocarbons
Soil samples obtained from Site (May 24,2016)									
TH1 – S2@ 0.8 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH2 – S4 @ 2.3 m	0.0053	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH4 – S4 @ 2.3 m	0.0072	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH4- S5@ 3.0 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH5-S2@ 0.8 m	<0.0050	<0.050	<0.015	<0.071	54	543	843	150	2590
TH5-S4@ 2.3 m	<0.0050	<0.050	<0.015	<0.071	<10	68	75	<50	143
TH7-S3@ 1.5 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH9-S1@ 0.3 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	94	90	184
1999 CCME *Environmental Quality Guidelines* with 2004 update for Soil at Commercial Site for Inhalation of Indoor Air Check (Slab-on-grade)									
Soil Quality Guideline for Human Health for Fine-grained Surface Soil	0.28	13000	6500	1600	—	—	—	—	—
Soil Quality Guideline for Human Health for Fine-grained Subsoil	0.29	13000	6700	1600	—	—	—	—	—
Soil Quality Guideline for Human Health for Coarse-grained Surface Soil	0.030	1400	630	160	—	—	—	—	—
Soil Quality Guideline for Human Health for Coarse-grained Subsoil	0.032	1500	670	170	—	—	—	—	—
2008 CCME *Canada-Wide Standards for Petroleum Hydrocarbons (PHCs) in Soil* at Commercial Site for Vapour Inhalation (Indoor)									
Soil Criteria for Fine-grained Surface Soils	—	—	—	—	4600	23000	NA	NA	—
Soil Criteria for Fine-grained Subsoils	—	—	—	—	4600	23000	NA	NA	—
Soil Criteria for Coarse-grained Surface Soils	—	—	—	—	320	1700	NA	NA	—
Soil Criteria for Coarse-grained Subsoils	—	—	—	—	320	1700	NA	NA	—

Notes:
1. All concentrations are in mg/kg (ppm).
2. The soil at the site consisted of fine-grained material.
3. Coarse means coarse-textured soil having a median grain size of >75 µm.
. 4. Concentration exceeding CCME criteria for Site = **[413]**

5. NA = Not Applicable

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TABLE 3
PETROLEUM HYDROCARBONS IN SOIL (RESIDENTIAL SITE CRITERIA FOR GENERIC SITUATION) CONSIDERING INCREMENTAL CANCER RISK OF 10^{-6} FOR BENZENE

Sample IDs	Parameters								
	BTEX				Total Hydrocarbons				
	Benzene	Toluene	Ethyl Benzene	Xylenes (total)	F1 (C6-C10)	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Total Hydrocarbons
Soil samples obtained from Site (May 24,2016)									
TH1 – S2@ 0.8 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
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TH4 – S4 @ 2.3 m	**[0.0072]**	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH4- S5@ 3.0 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH5-S2@ 0.8 m	<0.0050	<0.050	<0.015	<0.071	54	**[543]**	843	150	2590
TH5-S4@ 2.3 m	<0.0050	<0.050	<0.015	<0.071	<10	68	75	<50	143
TH7-S3@ 1.5 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH9-S1@ 0.3 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	94	90	184
1999 CCME *Environmental Quality Guidelines* with 2004 update for Soil at Residential Site for Generic Situation									
Soil Quality Guideline for Human Health for Fine-grained Surface Soil	0.0068	0.08	0.018	2.4	—	—	—	—	—
Soil Quality Guideline for Human Health for Fine-grained Subsoil	0.0068	0.08	0.018	2.4	—	—	—	—	—
Soil Quality Guideline for Human Health for Coarse-grained Surface Soil	0.0095	0.37	0.082	11	—	—	—	—	—
Soil Quality Guideline for Human Health for Coarse-grained Subsoil	0.0095	0.37	0.082	11	—	—	—	—	—
2008 CCME *Canada-Wide Standards for Petroleum Hydrocarbons (PHCs) in Soil* at Residential Site for Generic Situation									
Soil Criteria for Fine-grained Surface Soils	—	—	—	—	210	150	1300	5600	—
Soil Criteria for Fine-grained Surface Soils (where protection of potable groundwater applicable)	—	—	—	—	170	230	—	—	—
Soil Criteria for Coarse-grained Surface Soils	—	—	—	—	210	150	—	—	—
Soil Criteria for Coarse-grained Surface Soils (where protection of potable groundwater applicable)	—	—	—	—	240	320	1700	3300	—
2008 CCME *Canada-Wide Standards for Petroleum Hydrocarbons (PHCs) in Soil* at Residential Site for Management Limit									
Soil Criteria for Fine-grained Subsoils	—	—	—	—	800	1000	5000	10000	—
Soil Criteria for Coarse-grained Subsoils	—	—	—	—	700	1000	3500	10000	—

Notes:
1. All concentrations are in mg/kg (ppm).
2. The soil at the site consisted of coarse-grained material
3. Coarse means coarse-textured soil having a median grain size of >75 µm.
4. Concentration exceeding CCME criteria for Site = **[413]**

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TABLE 4
PETROLEUM HYDROCARBONS IN SOIL (RESIDENTIAL SITE FOR VAPOUR INHALATION)
CONSIDERING INCREMENTAL CANCER RISK OF 10-6 FOR BENZENE

Sample IDs	Parameters								
	BTEX				Total Hydrocarbons				
	Benzene	Toluene	Ethyl Benzene	Xylenes (total)	F1 (C6-C10)	F2 (C10-C16)	F3 (C16-C34)	F4 (C34-C50)	Total Hydrocarbons
Soil samples obtained from Site (May 24,2016)									
TH1 – S2@ 0.8 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH2 – S4 @ 2.3 m	0.0053	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH4 – S4 @ 2.3 m	0.0072	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH4- S5@ 3.0 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH5-S2@ 0.8 m	<0.0050	<0.050	<0.015	<0.071	54	543	843	150	2590
TH5-S4@ 2.3 m	<0.0050	<0.050	<0.015	<0.071	<10	68	75	<50	143
TH7-S3@ 1.5 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	<50	<50	<76
TH9-S1@ 0.3 m	<0.0050	<0.050	<0.015	<0.071	<10	<25	94	90	184
1999 CCME *Environmental Quality Guidelines* with 2004 update for Soil at Residential Site for Inhalation of Indoor Air Check (Slab-on-grade)									
Soil Quality Guideline for Human Health for Fine-grained Surface Soil	0.21	2600	1300	320	—	—	—	—	—
Soil Quality Guideline for Human Health for Fine-grained Subsoil	0.21	2600	1300	320	—	—	—	—	—
Soil Quality Guideline for Human Health for Coarse-grained Surface Soil	0.015	200	88	22	—	—	—	—	—
Soil Quality Guideline for Human Health for Coarse-grained Subsoil	0.015	200	88	22	—	—	—	—	—
2008 CCME *Canada-Wide Standards for Petroleum Hydrocarbons (PHCs) in Soil* at Residential Site for Vapour Inhalation (Indoor)									
Soil Criteria for Fine-grained Surface Soils	—	—	—	—	710	3600	NA	NA	—
Soil Criteria for Fine-grained Subsoils	—	—	—	—	710	3600	NA	NA	—
Soil Criteria for Coarse-grained Surface Soils	—	—	—	—	40	190	NA	NA	—
Soil Criteria for Coarse-grained Subsoils	—	—	—	—	40	190	NA	NA	—

Notes:
1. All concentrations are in mg/kg (ppm).
2. The soil at the site consisted of fine-grained material.
3. Coarse means coarse-textured soil having a median grain size of >75 µm.
. 4. Concentration exceeding CCME criteria for Site = **[413]**

5. NA = Not Applicable

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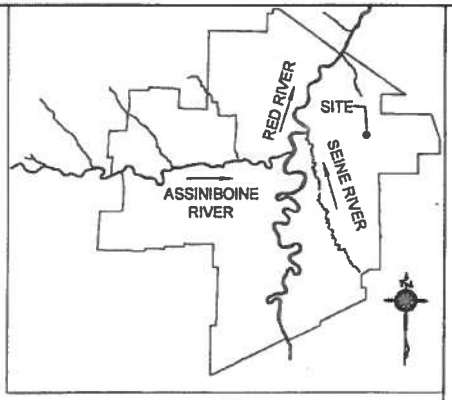
LIST OF FIGURES



KEYMAP

LEGEND

SITE

NO.	DATE	ISSUE / REVISION
0	JULY 2016	Report

ENG-TECH CONSULTING LIMITED
6 - 854 Marion Street
Winnipeg, MB R2J 0K4
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ENG. STAMP

APEGM
Certificate of Authorization
ENG-TECH Consulting Limited
No.2475 Expiry: April 30, 2017

CLIENT: CITY OF WINNIPEG

PROJECT:
PHASE II ESA
849 RAVELSTON AVENUE
WINNIPEG, MANITOBA

DWG DESCRIPTION:
SITE LOCATION PLAN

SCALE: NTS

DRAWN BY	DATE:
TDR	JUNE 2016
FILE No.: 16-217-03	CLIENT DWG/FIG. No
ENG-TECH DWG/FIG. No.: 1	NO.:

P:\2016\Projects\217(C.O.W)\03(Two Tank Sites)\Report\Figure 1- Site Location Plan.dwg

TEST HOLE LOCATION TABLE		
HOLE #	GPS COORDINATES OF TEST HOLES SEPTEMBER 7, 2012	
	UTM	14U
TH 1	5529242	0641566
TH 2	5529244	0641557
TH 3	5529254	0641559
TH 4	5529252	0641565
TH 5	5529271	0641553
TH 6	5529282	0641548
TH 7	5529271	0641547
TH 8	5529273	0641539
TH 9	5529284	0641554

LEGEND

- TEST HOLE
- PHOTOGRAPH AND DIRECTION
- EXTENT OF FORMER UST
- TEST HOLE (BY OTHERS)

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CLIENT: CITY OF WINNIPEG

PROJECT:
PHASE II ESA
849 RAVELSTON AVENUE
WINNIPEG, MANITOBA

DWG DESCRIPTION:
TEST HOLE LOCATION PLAN
AND PHOTOGRAPHY INDEX

SCALE: NTS

DRAWN BY: TDR

DATE: JUNE 2016

FILE No.: 16-217-03

CLIENT DWG/FIG. No.:

ENG-TECH DWG/FIG. No.: 2

NO.:

P:\2016\Projects\217(C.G.W)\03(Two Tank Sites)\Report\Figure 2- Test Hole Location Plan.dwg

LIST OF APPENDICES

APPENDIX A

Stratigraphic Test Hole Logs (9)

MODIFIED UNIFIED CLASSIFICATION SYSTEM FOR SOILS

MAJOR DIVISION			GROUP SYMBOL	GRAPH SYMBOL	TYPICAL DESCRIPTION	LABORATORY CLASSIFICATION CRITERIA
COARSE GRAINED SOILS (MORE THAN HALF BY WEIGHT LARGER THAN 75 µm)	GRAVELS MORE THAN HALF THE COARSE FRACTION LARGER THAN 4.75 mm	CLEAN GRAVELS (TRACE OR NO FINES)	GW		WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	$C_U = \frac{D_{60}}{D_{10}} > 4$; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}} = 1$ TO 3
			GP		POORLY GRADED GRAVELS, GRAVEL- SAND MIXTURES, LITTLE OR NO FINES	NOT MEETING ABOVE REQUIREMENTS
		DIRTY GRAVELS (WITH SOME OR MORE FINES)	GM		SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	ATTERBERG LIMITS BELOW "A" LINE OR P.I. LESS THAN 4
			GC		CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	ATTERBERG LIMITS ABOVE "A" LINE AND P.I. MORE THAN 7
	SANDS MORE THAN HALF THE COARSE FRACTION SMALLER THAN 4.75 mm	CLEAN SANDS (TRACE OR NO FINES)	SW		WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	$C_U = \frac{D_{60}}{D_{10}} > 6$; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}} = 1$ TO 3
			SP		POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	NOT MEETING ABOVE REQUIREMENTS
		DIRTY SANDS (WITH SOME OR MORE FINES)	SM		SILTY SANDS, SAND-SILT MIXTURES	ATTERBERG LIMITS BELOW "A" LINE OR P.I. LESS THAN 4
			SC		CLAYEY SANDS, SAND-CLAY MIXTURES	ATTERBERG LIMITS ABOVE "A" LINE AND P.I. MORE THAN 7
FINE GRAINED SOILS (MORE THAN HALF BY WEIGHT SMALLER THAN 75 µm)	SILTS BELOW "A" LINE NEGLIGIBLE ORGANIC CONTENT	LL ≤ 50%	ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY SANDS OF SLIGHTY PLASTICITY	CLASSIFICATION IS BASED UPON PLASTICITY CHART (SEE BELOW)
		LL > 50%	MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS	
	CLAYS ABOVE "A" LINE NEGLIGIBLE ORGANIC CONTENT	LL ≤ 30%	CL		INORGANIC CLAYS OF LOW PLASTICITY, GRAVELLY, SANDY OR SILTY CLAYS, LEAN CLAYS	
		30% < LL ≤ 50%	CI		INORGANIC CLAYS OF MEDIUM PLASTICITY, SILTY CLAYS	
		LL > 50%	CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
	ORGANIC SILTS & CLAYS BELOW "A" LINE	LL < 50%	OL		ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
		LL > 50%	OH		ORGANIC CLAYS OF HIGH PLASTICITY	
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS	STRONG COLOUR OR ODOUR, AND OFTEN FIBROUS TEXTURE

ADDITIONAL SYMBOLS

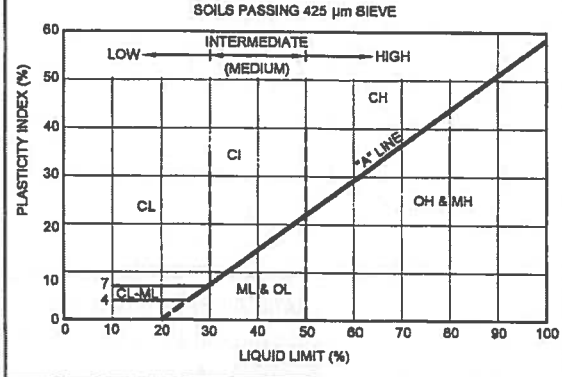
TILL, SANDSTONE, GRANITE, FILL, TOPSOIL, CONCRETE, SHALE, LIMESTONE

PLASTIC SOILS

MOISTURE	PLASTICITY	INTRUSIONS	CONSISTENCY	POCKET PEN (TSF)	(N)
DRY	LOW	ROOTLETS	VERY SOFT		< 2
DAMP	MEDIUM	OXIDES	SOFT	0 - 0.5	2 - 4
MOIST	HIGH	MICA	FIRM	0.5 - 1.0	4 - 8
WET		GYPSUM	STIFF	1.0 - 2.0	8 - 15
		ETC.	VERY STIFF	2.0 - 4.0	15 - 30
			HARD	> 4.0	> 30

TSF x 95.8 = kPa (q_U) $S_U = \frac{1}{2} \times q_U$

PLASTICITY CHART FOR SOILS PASSING 425 µm SIEVE



F:\Drafting\SOIL CLASSIFICATIONS\SOIL CLASSIFICATIONS.dwg

SOIL DESCRIPTIONS

TRACE:	0 - 10%	BOULDERS:	> 200 mm	COARSE SAND:	2 - 4.75 mm
SOME:	10 - 20%	COBBLES:	75 - 200 mm	MEDIUM SAND:	0.425 - 2 mm
WITH:	20 - 35%	COURSE GRAVEL:	19 - 75 mm	FINE SAND:	0.075 - 0.425 mm
AND:	35 - 50%	FINE GRAVEL	4.75 - 19 mm	FINES:	< 0.075 mm

GRANULAR SOILS

MOISTURE	DENSITY	GRADATION	INTRUSIONS	SPT (N)
DRY	VERY LOOSE	POORLY	ROOTLETS	0 - 4
DAMP	LOOSE	WELL	OXIDES	4 - 10
MOIST	MED. DENSE		MICA	10 - 30
WET	DENSE		FINES	30 - 50
	VERY DENSE		ETC.	> 50

DEFINITIONS

LL = LIQUID LIMIT
P.I. = PLASTICITY INDEX
C_U = COEFFICIENT OF UNIFORMITY
q_U = UNCONFINED COMPRESSIVE STRENGTH
S_U = UNDRAINED SHEAR STRENGTH
C_C = COMPRESSION INDEX
PL = PLASTIC LIMIT

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ENG-TECH Consulting Limited

Engineering And Testing Solutions That Work For You

Test Hole #: TH1
Client: City of Winnipeg
Site: See Figure 2
Location: 849 Ravelsten Ave, Winnipeg, MB
Project: Phase II ESA

File No.: 16-217-03
Date Drilled: May 24, 2016
Grade Elevation: 100.0 m
Water Elevation: - -

Depth (m)	Description	Elevation (m)	Sample No.	Sample Type	VOC Concentrations (ppm)
0.0	Ground Surface	100.0			
	Concrete (200 mm)				
	Gravel Fill (GP) - medium brown, moist, medium dense, poorly graded, coarse grained.		S1		5
	Clay Fill (Cl) - dark brown, moist, firm, medium plastic.		S2		40
1.0		99.0			
	Clay (CH) - dark brown, moist, firm, highly platic, trace silt.		S3		5
2.0		98.0			
			S4		30
3.0		97.0	S5		10
			S6		5
4.0		96.0			
			S7		10
	End of Test Hole - end of test hole at 4.6 m below grade. - no sloughing or seepage was encountered upon completion of drilling. - test hole was backfilled with bentonite and soil cuttings upon completion of drilling.				
5.0		95.0			
6.0		94.0			

VOC Concentrations (% LEL)

VOC Concentrations
%LEL: 10 30 50 70 90
PPM: 100 300 500 700 900

Comments

ENG-TECH Consulting Limited
Logged by: TR
Reviewed by:

Drilled By: Maple Leaf Drilling
Drill Rig: Geoprobe
Auger Size: 125 mm SS

Completion Depth: 4.6 m
Completion Elevation: 95.4 m
Sheet: 1 of 1

SAMPLE TYPE: SPLIT BARREL | SHELBY TUBE | AUGER CUTTINGS | SPLIT SPOON

ENG-TECH CONSULTING LIMITED

Engineering And Testing Solutions That Work For You

Test Hole #: TH2
Client: City of Winnipeg
Site: See Figure 2
Location: 849 Ravelsten Ave, Winnipeg, MB
Project: Phase II ESA

File No.: 16-217-03
Date Drilled: May 24, 2016
Grade Elevation: 100.0 m
Water Elevation: - -

Depth (m)	Soil Symbol	Description	Elevation (m)	Sample No.	Sample Type	VOC Concentrations (ppm)
0.0		Ground Surface	100.0			
		Concrete (200 mm)				
		Gravel Fill (GP) - medium brown, moist, medium dense, poorly graded, coarse grained.		S1		10
				S2		10
1.0		*Clay Fill (CI)* - black, moist, firm, medium plastic, trace silt.	99.0			
		Clay (CH) - medium brown, moist, firm, highly platic, trace silt.		S3		5
2.0			98.0			
				S4		75
3.0			97.0	S5		15
				S6		0
4.0			96.0			
				S7		0
5.0		*End of Test Hole* - end of test hole at 4.6 m below grade. - no sloughing or seepage was encountered upon completion of drilling. - test hole was backfilled with bentonite and soil cuttings upon completion of drilling.	95.0			
6.0			94.0			

VOC Concentrations (% LEL)

VOC Concentrations
%LEL: 10 30 50 70 90
PPM: 100 300 500 700 900

Comments

ENG-TECH Consulting Limited

Logged by: TR
Reviewed by:

Drilled By: Maple Leaf Drilling
Drill Rig: Geoprobe
Auger Size: 125 mm SS

Completion Depth: 4.6 m
Completion Elevation: 95.4 m
Sheet: 1 of 1

SAMPLE TYPE: SPLIT BARREL | SHELBY TUBE | AUGER CUTTINGS | SPLIT SPOON

ENG-TECH CONSULTING LIMITED

Engineering And Testing Solutions That Work For You

Test Hole #: TH3
Client: City of Winnipeg
Site: See Figure 2
Location: 849 Ravelsten Ave, Winnipeg, MB
Project: Phase II ESA

File No.: 16-217-03
Date Drilled: May 24, 2016
Grade Elevation: 100.0 m
Water Elevation: - -

Depth (m)	Soil Symbol	Description	Elevation (m)	Sample No.	Sample Type	VOC Concentrations (ppm)
0.0		Ground Surface	100.0			
		Concrete (200 mm)				
		Gravel Fill (GP) - medium brown, moist, medium dense, poorly graded, coarse grained.		S1		15
				S2		5
		Clay Fill (CI) - black, moist, firm, medium plastic, trace silt.				
1.0			99.0			
		Clay (CI) - medium brown, moist, firm, medium platic, trace silt.		S3		5
2.0			98.0	S4		5
3.0			97.0	S5		5
				S6		0
4.0			96.0	S7		5
		End of Test Hole - end of test hole at 4.6 m below grade. - no sloughing or seepage was encountered upon completion of drilling. - test hole was backfilled with bentonite and soil cuttings upon completion of drilling.				
5.0			95.0			
6.0			94.0			

SUBSURFACE PROFILE | SAMPLE DATA

VOC Concentrations (% LEL)

VOC Concentrations: %LEL 10 30 50 70 90; PPM 100 300 500 700 900

Comments

ENG-TECH Consulting Limited

Logged by: TR

Reviewed by:

Drilled By: Maple Leaf Drilling
Drill Rig: Geoprobe
Auger Size: 125 mm SS

Completion Depth: 4.6 m
Completion Elevation: 95.4 m
Sheet: 1 of 1

SAMPLE TYPE: SPLIT BARREL | SHELBY TUBE | AUGER CUTTINGS | SPLIT SPOON

ENG-TECH CONSULTING LIMITED

Engineering And Testing Solutions That Work For You

Test Hole #: TH4
Client: City of Winnipeg
Site: See Figure 2
Location: 849 Ravelsten Ave, Winnipeg, MB
Project: Phase II ESA

File No.: 16-217-03
Date Drilled: May 24, 2016
Grade Elevation: 100.0 m
Water Elevation: - -

Depth (m)	Description	Elevation (m)	Sample No.	Sample Type	VOC Concentrations (ppm)
0.0	Ground Surface	100.0			
	Concrete (200 mm)				
	Gravel Fill (GP) - medium brown, moist, medium dense, poorly graded, coarse grained.		S1		130
			S2		15
1.0	*Clay Fill (CI)* - medium brown, moist, firm, medium plastic, trace silt, slight hydrocarbon odour at 0.8 m.	99.0			
	Clay (CI) - dark brown, moist, firm, medium platic, trace silt.		S3		0
2.0		98.0	S4		190
3.0		97.0	S5		75
4.0		96.0	S6		10
			S7		40
5.0	*End of Test Hole* - end of test hole at 4.6 m below grade. - no sloughing or seepage was encountered upon completion of drilling. - test hole was backfilled with bentonite and soil cuttings upon completion of drilling.	95.0			
6.0		94.0			

SUBSURFACE PROFILE | SAMPLE DATA

VOC Concentrations (% LEL)

VOC Concentrations: %LEL 10 30 50 70 90; PPM 100 300 500 700 900

Comments

ENG-TECH Consulting Limited

Logged by: TR

Reviewed by:

Drilled By: Maple Leaf Drilling
Drill Rig: Geoprobe
Auger Size: 125 mm SS

Completion Depth: 4.6 m
Completion Elevation: 95.4 m
Sheet: 1 of 1

SAMPLE TYPE: SPLIT BARREL | SHELBY TUBE | AUGER CUTTINGS | SPLIT SPOON

ENG-TECH CONSULTING LIMITED

Engineering And Testing Solutions That Work For You

Test Hole #: TH5

Client: City of Winnipeg

Site: See Figure 2

Location: 849 Ravelsten Ave, Winnipeg, MB

Project: Phase II ESA

File No.: 16-217-03

Date Drilled: May 24, 2016

Grade Elevation: 100.0 m

Water Elevation: - -

Depth (m)	Soil Symbol	Description	Elevation (m)	Sample No.	Sample Type	VOC Concentrations (ppm)	VOC Concentrations (% LEL)	Comments
0.0		Ground Surface	100.0					
		Pea Gravel - medium brown, moist, loose, poorly graded, coarse grained.		S1		85		
				S2		240		
1.0		- slight hydrocarbon detected between 0.8 m and 1.5 m.	99.0					
				S3		0		
2.0			98.0					
		Clay (CI) - dark brown, moist, firm, medium platic.		S4		60		
3.0			97.0	S5		10		
				S6		5		
4.0			96.0					
				S7		0		
		End of Test Hole - end of test hole at 4.6 m below grade. - sloughing and seepage encoutered within pea gravel upon competion of drilling. - test hole was backfilled with bentonite and soil cuttings upon completion of drilling.						
5.0			95.0					
6.0			94.0					

VOC Concentrations: %LEL 10 30 50 70 90; PPM 100 300 500 700 900

ENG-TECH Consulting Limited

Logged by: TR

Reviewed by:

Drilled By: Maple Leaf Drilling

Drill Rig: Geoprobe

Auger Size: 125 mm SS

Completion Depth: 4.6 m

Completion Elevation: 95.4 m

Sheet: 1 of 1

SAMPLE TYPE: SPLIT BARREL, SHELBY TUBE, AUGER CUTTINGS, SPLIT SPOON

ENG-TECH Consulting Limited

Engineering And Testing Solutions That Work For You

Test Hole #: TH6
Client: City of Winnipeg
Site: See Figure 2
Location: 849 Ravelsten Ave, Winnipeg, MB
Project: Phase II ESA

File No.: 16-217-03
Date Drilled: May 24, 2016
Grade Elevation: 100.0 m
Water Elevation: - -

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (m)	Soil Symbol	Description	Elevation (m)	Sample No.	Sample Type	VOC Concentrations (ppm)	VOC Concentrations (% LEL)	VOC Concentrations %LEL (10 30 50 70 90) / PPM (100 300 500 700 900)	Comments
0.0		Ground Surface	100.0						
		Pea Gravel - medium brown, moist, loose, poorly graded, trace sand.		S1		0			
1.0			99.0	S2		0			
2.0			98.0						
3.0			97.0	S3		0			
4.0			96.0	S4		0			
		End of Test Hole - end of test hole at 4.1 m below grade. - auger refusal on suspected concrete. - sloughing was observed within pea gravel upon completion of drilling. - seepage was encountered within pea gravel upon completion of drilling. - test hole was backfilled with soil cuttings upon completion of drilling.							
5.0			95.0						
6.0			94.0						

ENG-TECH Consulting Limited

Logged by: TR

Reviewed by: CA

Drilled By: Maple Leaf Drilling
Drill Rig: Geoprobe
Auger Size: 125 mm SS

Completion Depth: 4.1 m
Completion Elevation: 95.9 m
Sheet: 1 of 1

SAMPLE TYPE — SPLIT BARREL — SHELBY TUBE — AUGER CUTTINGS — SPLIT SPOON

ENG-TECH Consulting Limited

Engineering And Testing Solutions That Work For You

Test Hole #: TH7
Client: City of Winnipeg
Site: See Figure 2
Location: 849 Ravelsten Ave, Winnipeg, MB
Project: Phase II ESA

File No.: 16-217-03
Date Drilled: May 24, 2016
Grade Elevation: 100.0 m
Water Elevation: - -

Depth (m)	Soil Symbol	Description	Elevation (m)	Sample No.	Sample Type	VOC Concentrations (ppm)	VOC Concentrations (% LEL)	Comments
0.0		Ground Surface	100.0					
		Gravel Fill (GP) - medium brown, moist, medium dense, poorly graded, coarse grained.						
		Clay Fill (CI) - dark brown, moist, firm, medium plastic, trace silt.		S1		0		
				S2		0		
1.0		***Clay (CI)*** - dark brown, moist, firm, medium platic, trace silt.	99.0					
				S3		0		
2.0			98.0					
				S4		0		
3.0		***End of Test Hole*** - end of test hole at 3.0 m below grade. - no sloughing or seepage was encountered upon completion of drilling. - test hole was backfilled with bentonite and soil cuttings upon completion of drilling.	97.0	S5		0		
4.0			96.0					

VOC Concentrations: %LEL (10, 30, 50, 70, 90); PPM (100, 300, 500, 700, 900)

ENG-TECH Consulting Limited

Logged by: TR
Reviewed by: CJA

Drilled By: Maple Leaf Drilling
Drill Rig: Geoprobe
Auger Size: 125 mm SS

Completion Depth: 3.0 m
Completion Elevation: 97.0 m
Sheet: 1 of 1

SAMPLE TYPE: SPLIT BARREL, SHELBY TUBE, AUGER CUTTINGS, SPLIT SPOON

ENG-TECH CONSULTING LIMITED

Engineering And Testing Solutions That Work For You

Test Hole #: TH8

Client: City of Winnipeg

Site: See Figure 2

Location: 849 Ravelsten Ave, Winnipeg, MB

Project: Phase II ESA

File No.: 16-217-03

Date Drilled: May 24, 2016

Grade Elevation: 100.0 m

Water Elevation: - -

Depth (m)	Soil Symbol	Description	Elevation (m)	Sample No.	Sample Type	VOC Concentrations (ppm)
0.0		Ground Surface	100.0			
		Gravel Fill (GP) - medium brown, moist, medium dense, poorly graded, coarse grained.		S1		25
		Clay Fill (Cl) - dark brown, moist, firm, medium plastic, trace silt.		S2		0
1.0		***Clay (Cl)*** - dark brown, moist, firm, medium platic, trace silt.	99.0	S3		0
2.0			98.0	S4		0
3.0		***End of Test Hole*** - end of test hole at 3.0 m below grade. - no sloughing or seepage was encountered upon completion of drilling. - test hole was backfilled with bentonite and soil cuttings upon completion of drilling.	97.0	S5		0
4.0			96.0			

VOC Concentrations (% LEL)

VOC Concentrations: %LEL 10 30 50 70 90; PPM 100 300 500 700 900

Comments

ENG-TECH Consulting Limited

Logged by: TR

Reviewed by:

Drilled By: Maple Leaf Drilling

Drill Rig: Geoprobe

Auger Size: 125 mm SS

Completion Depth: 3.0 m

Completion Elevation: 97.0 m

Sheet: 1 of 1

SAMPLE TYPE: SPLIT BARREL, SHELBY TUBE, AUGER CUTTINGS, SPLIT SPOON

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Engineering And Testing Solutions That Work For You

Test Hole #: TH9

Client: City of Winnipeg

Site: See Figure 2

Location: 849 Ravelsten Ave, Winnipeg, MB

Project: Phase II ESA

File No.: 16-217-03

Date Drilled: May 24, 2016

Grade Elevation: 100.0 m

Water Elevation: - -

Depth (m)	Soil Symbol	Description	Elevation (m)	Sample No.	Sample Type	VOC Concentrations (ppm)
0.0		Ground Surface	100.0			
		Clay Fill (CI) - dark brown, moist, firm, medium plastic, trace silt.		S1		35
				S2		6
1.0			99.0			
		Clay (CI) - dark brown, moist, firm, medium platic, trace silt.		S3		0
2.0			98.0	S4		0
3.0		***End of Test Hole*** - end of test hole at 3.0 m below grade. - no sloughing or seepage was encountered upon completion of drilling. - test hole was backfilled with bentonite and soil cuttings upon completion of drilling.	97.0	S5		0
4.0			96.0			

VOC Concentrations (% LEL)

VOC Concentrations: %LEL 10 30 50 70 90; PPM 100 300 500 700 900

Comments

ENG-TECH Consulting Limited

Logged by: TR

Reviewed by:

Drilled By: Maple Leaf Drilling

Drill Rig: Geoprobe

Auger Size: 125 mm SS

Completion Depth: 3.0 m

Completion Elevation: 97.0 m

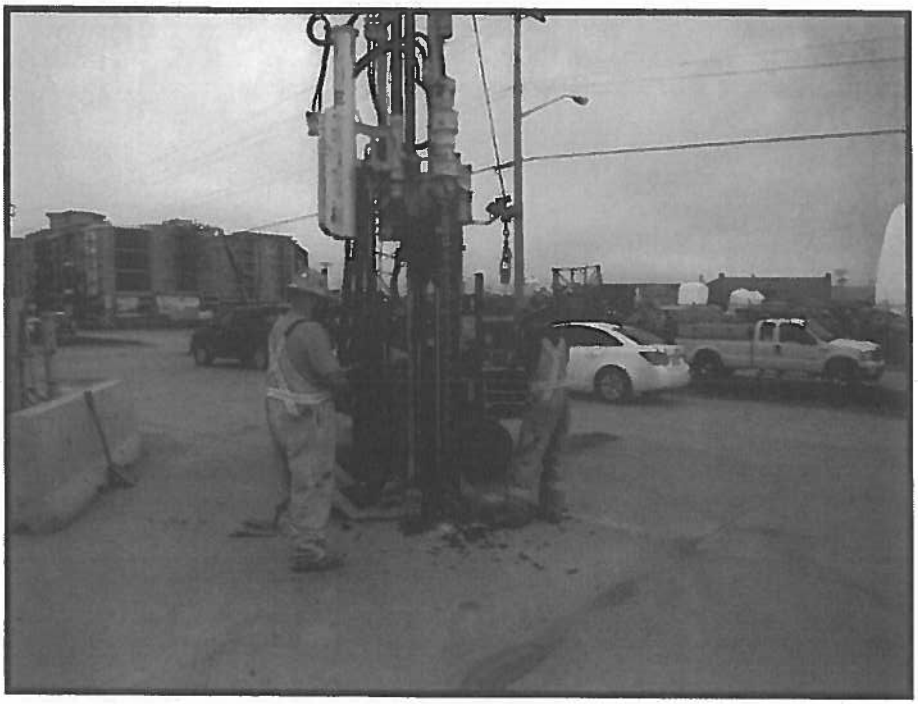
Sheet: 1 of 1

SAMPLE TYPE: SPLIT BARREL | SHELBY TUBE | AUGER CUTTINGS | SPLIT SPOON

APPENDIX B

Site Photographs (4)

PHOTOGRAPH #1: Site, facing southeast showing the drilling of TH1 near the abandoned AST's on 849 Ravelston Avenue. In the background Commercial Building C of 1500 Plessis Road to the southeast.



PHOTOGRAPH #2: Site, facing southwest showing the drilling of TH2 near the northwest of the existing AST's tank pad and Pump Island. In the background, the commercial and residential properties and Ravelston Avenue to the southwest.

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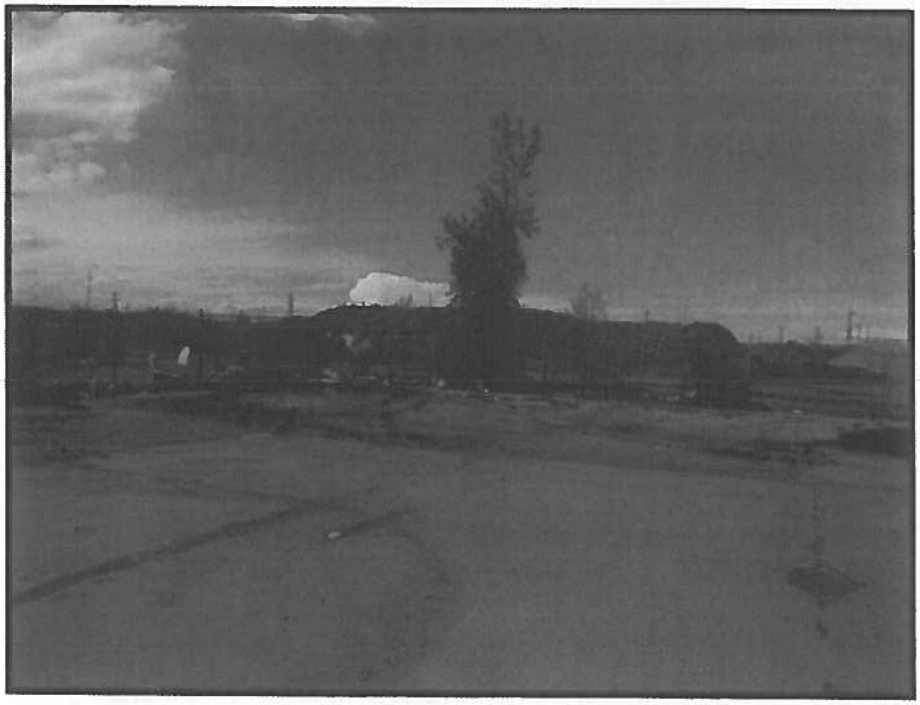
PHOTOGRAPH #3: Site, facing northeast showing the existing AST's location on 849 Ravelston Avenue. In the background, the former UST and Pump Island and the Northern portion of 1500 Plessis Road can be seen.



PHOTOGRAPH #4: Site, facing east showing the location of the former UST location near the northeast corner of the 849 Ravelston Avenue. In the background the northern portion of 1500 Plessis Road can be seen.

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APPENDIX C

Analytical Test Results (1)

ENG-TECH Consulting
ATTN: TREVOR ROBERTSON
#6 - 854 Marion Street
Winnipeg MB R2J 0K4

Date Received: 25-MAY-16
Report Date: 31-MAY-16 14:20 (MT)
Version: FINAL

Client Phone: 204-233-1694

Certificate of Analysis

Lab Work Order #: L1773433
Project P.O. #: NOT SUBMITTED
Job Reference: 16-217-03
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1773433-1 TH1-S2 @ 2.5'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTEX and F1-F4 by Tumbler Method							
BTX plus F1 by GCMS							
Benzene	<0.0050		0.0050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Toluene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Ethyl benzene	<0.015		0.015	mg/kg	27-MAY-16	28-MAY-16	R3468373
o-Xylene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
m+p-Xylenes	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
F1 (C6-C10)	<10		10	mg/kg	27-MAY-16	28-MAY-16	R3468373
Surrogate: 4-Bromofluorobenzene (SS)	101.6		70-130	%	27-MAY-16	28-MAY-16	R3468373
CCME Total Extractable Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg	27-MAY-16	28-MAY-16	R3467079
F3 (C16-C34)	<50		50	mg/kg	27-MAY-16	28-MAY-16	R3467079
F4 (C34-C50)	<50		50	mg/kg	27-MAY-16	28-MAY-16	R3467079
Surrogate: 2-Bromobenzotrifluoride	92.6		60-140	%	27-MAY-16	28-MAY-16	R3467079
Chrom. to baseline at nC50	YES				27-MAY-16	28-MAY-16	R3467079
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		31-MAY-16	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		31-MAY-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		31-MAY-16	
Miscellaneous Parameters							
Moisture	26.2		0.10	%		27-MAY-16	R3466541
L1773433-2 TH2 - S4 @7.5'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTEX and F1-F4 by Tumbler Method							
BTX plus F1 by GCMS							
Benzene	0.0053		0.0050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Toluene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Ethyl benzene	<0.015		0.015	mg/kg	27-MAY-16	28-MAY-16	R3468373
o-Xylene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
m+p-Xylenes	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
F1 (C6-C10)	<10		10	mg/kg	27-MAY-16	28-MAY-16	R3468373
Surrogate: 4-Bromofluorobenzene (SS)	113.6		70-130	%	27-MAY-16	28-MAY-16	R3468373
CCME Total Extractable Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg	27-MAY-16	28-MAY-16	R3467079
F3 (C16-C34)	<50		50	mg/kg	27-MAY-16	28-MAY-16	R3467079
F4 (C34-C50)	<50		50	mg/kg	27-MAY-16	28-MAY-16	R3467079
Surrogate: 2-Bromobenzotrifluoride	93.0		60-140	%	27-MAY-16	28-MAY-16	R3467079
Chrom. to baseline at nC50	YES				27-MAY-16	28-MAY-16	R3467079
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		31-MAY-16	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		31-MAY-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		31-MAY-16	
Miscellaneous Parameters							
Moisture	32.4		0.10	%		27-MAY-16	R3466541
L1773433-3 TH4 - S4 @7.5'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTEX and F1-F4 by Tumbler Method							
BTX plus F1 by GCMS							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1773433-3 TH4 - S4 @7.5'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTX plus F1 by GCMS							
Benzene	0.0072		0.0050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Toluene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Ethyl benzene	<0.015		0.015	mg/kg	27-MAY-16	28-MAY-16	R3468373
o-Xylene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
m+p-Xylenes	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
F1 (C6-C10)	<10		10	mg/kg	27-MAY-16	28-MAY-16	R3468373
Surrogate: 4-Bromofluorobenzene (SS)	113.2		70-130	%	27-MAY-16	28-MAY-16	R3468373
CCME Total Extractable Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg	27-MAY-16	28-MAY-16	R3467079
F3 (C16-C34)	<50		50	mg/kg	27-MAY-16	28-MAY-16	R3467079
F4 (C34-C50)	<50		50	mg/kg	27-MAY-16	28-MAY-16	R3467079
Surrogate: 2-Bromobenzotrifluoride	93.9		60-140	%	27-MAY-16	28-MAY-16	R3467079
Chrom. to baseline at nC50	YES				27-MAY-16	28-MAY-16	R3467079
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		31-MAY-16	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		31-MAY-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		31-MAY-16	
Miscellaneous Parameters							
Moisture	31.7		0.10	%		27-MAY-16	R3466541
L1773433-4 TH4 - S5 @ 10'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTEX and F1-F4 by Tumbler Method							
BTX plus F1 by GCMS							
Benzene	<0.0050		0.0050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Toluene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Ethyl benzene	<0.015		0.015	mg/kg	27-MAY-16	28-MAY-16	R3468373
o-Xylene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
m+p-Xylenes	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
F1 (C6-C10)	<10		10	mg/kg	27-MAY-16	28-MAY-16	R3468373
Surrogate: 4-Bromofluorobenzene (SS)	108.8		70-130	%	27-MAY-16	28-MAY-16	R3468373
CCME Total Extractable Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg	27-MAY-16	28-MAY-16	R3467079
F3 (C16-C34)	<50		50	mg/kg	27-MAY-16	28-MAY-16	R3467079
F4 (C34-C50)	<50		50	mg/kg	27-MAY-16	28-MAY-16	R3467079
Surrogate: 2-Bromobenzotrifluoride	93.7		60-140	%	27-MAY-16	28-MAY-16	R3467079
Chrom. to baseline at nC50	YES				27-MAY-16	28-MAY-16	R3467079
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		31-MAY-16	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		31-MAY-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		31-MAY-16	
Miscellaneous Parameters							
Moisture	33.4		0.10	%		27-MAY-16	R3466541
L1773433-5 TH5 - S2 @ 2.5'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTEX and F1-F4 by Tumbler Method							
BTX plus F1 by GCMS							
Benzene	<0.0050		0.0050	mg/kg	27-MAY-16	28-MAY-16	R3468373

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1773433-5 TH5 - S2 @ 2.5'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTX plus F1 by GCMS							
Toluene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Ethyl benzene	<0.015		0.015	mg/kg	27-MAY-16	28-MAY-16	R3468373
o-Xylene	0.172		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
m+p-Xylenes	0.076		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
F1 (C6-C10)	54		10	mg/kg	27-MAY-16	28-MAY-16	R3468373
Surrogate: 4-Bromofluorobenzene (SS)	96.8		70-130	%	27-MAY-16	28-MAY-16	R3468373
CCME Total Extractable Hydrocarbons							
F2 (C10-C16)	1540		25	mg/kg	28-MAY-16	28-MAY-16	R3467079
F3 (C16-C34)	843		50	mg/kg	28-MAY-16	28-MAY-16	R3467079
F4 (C34-C50)	150		50	mg/kg	28-MAY-16	28-MAY-16	R3467079
Surrogate: 2-Bromobenzotrifluoride	99.2		60-140	%	28-MAY-16	28-MAY-16	R3467079
Chrom. to baseline at nC50	YES				28-MAY-16	28-MAY-16	R3467079
CCME Total Hydrocarbons							
F1-BTEX	53		10	mg/kg		31-MAY-16	
Total Hydrocarbons (C6-C50)	2590		76	mg/kg		31-MAY-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	0.247		0.071	mg/kg		31-MAY-16	
Miscellaneous Parameters							
Moisture	7.11		0.10	%		30-MAY-16	R3469068
L1773433-6 TH5 - S4 @ 7.5'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTEX and F1-F4 by Tumbler Method							
BTX plus F1 by GCMS							
Benzene	<0.0050		0.0050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Toluene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Ethyl benzene	<0.015		0.015	mg/kg	27-MAY-16	28-MAY-16	R3468373
o-Xylene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
m+p-Xylenes	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
F1 (C6-C10)	<10		10	mg/kg	27-MAY-16	28-MAY-16	R3468373
Surrogate: 4-Bromofluorobenzene (SS)	121.9		70-130	%	27-MAY-16	28-MAY-16	R3468373
CCME Total Extractable Hydrocarbons							
F2 (C10-C16)	68		25	mg/kg	28-MAY-16	28-MAY-16	R3467079
F3 (C16-C34)	75		50	mg/kg	28-MAY-16	28-MAY-16	R3467079
F4 (C34-C50)	<50		50	mg/kg	28-MAY-16	28-MAY-16	R3467079
Surrogate: 2-Bromobenzotrifluoride	95.5		60-140	%	28-MAY-16	28-MAY-16	R3467079
Chrom. to baseline at nC50	YES				28-MAY-16	28-MAY-16	R3467079
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		31-MAY-16	
Total Hydrocarbons (C6-C50)	143		76	mg/kg		31-MAY-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		31-MAY-16	
Miscellaneous Parameters							
Moisture	34.6		0.10	%		30-MAY-16	R3469068
L1773433-7 TH7 - S3 @ 5'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTEX and F1-F4 by Tumbler Method							
BTX plus F1 by GCMS							
Benzene	<0.0050		0.0050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Toluene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1773433-7 TH7 - S3 @ 5'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTX plus F1 by GCMS							
Ethyl benzene	<0.015		0.015	mg/kg	27-MAY-16	28-MAY-16	R3468373
o-Xylene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
m+p-Xylenes	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
F1 (C6-C10)	<10		10	mg/kg	27-MAY-16	28-MAY-16	R3468373
Surrogate: 4-Bromofluorobenzene (SS)	107.2		70-130	%	27-MAY-16	28-MAY-16	R3468373
CCME Total Extractable Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg	28-MAY-16	28-MAY-16	R3467079
F3 (C16-C34)	<50		50	mg/kg	28-MAY-16	28-MAY-16	R3467079
F4 (C34-C50)	<50		50	mg/kg	28-MAY-16	28-MAY-16	R3467079
Surrogate: 2-Bromobenzotrifluoride	92.0		60-140	%	28-MAY-16	28-MAY-16	R3467079
Chrom. to baseline at nC50	YES				28-MAY-16	28-MAY-16	R3467079
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		31-MAY-16	
Total Hydrocarbons (C6-C50)	<76		76	mg/kg		31-MAY-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		31-MAY-16	
Miscellaneous Parameters							
Moisture	29.2		0.10	%		30-MAY-16	R3469068
L1773433-8 TH9 - S1 @ 1'							
Sampled By: TREVOR ROBERTSON on 24-MAY-16							
Matrix: SOIL							
BTEX and F1-F4 by Tumbler Method							
BTX plus F1 by GCMS							
Benzene	<0.0050		0.0050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Toluene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
Ethyl benzene	<0.015		0.015	mg/kg	27-MAY-16	28-MAY-16	R3468373
o-Xylene	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
m+p-Xylenes	<0.050		0.050	mg/kg	27-MAY-16	28-MAY-16	R3468373
F1 (C6-C10)	<10		10	mg/kg	27-MAY-16	28-MAY-16	R3468373
Surrogate: 4-Bromofluorobenzene (SS)	93.4		70-130	%	27-MAY-16	28-MAY-16	R3468373
CCME Total Extractable Hydrocarbons							
F2 (C10-C16)	<25		25	mg/kg	28-MAY-16	28-MAY-16	R3467079
F3 (C16-C34)	94		50	mg/kg	28-MAY-16	28-MAY-16	R3467079
F4 (C34-C50)	90		50	mg/kg	28-MAY-16	28-MAY-16	R3467079
Surrogate: 2-Bromobenzotrifluoride	95.0		60-140	%	28-MAY-16	28-MAY-16	R3467079
Chrom. to baseline at nC50	YES				28-MAY-16	28-MAY-16	R3467079
CCME Total Hydrocarbons							
F1-BTEX	<10		10	mg/kg		31-MAY-16	
Total Hydrocarbons (C6-C50)	184		76	mg/kg		31-MAY-16	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.071		0.071	mg/kg		31-MAY-16	
Miscellaneous Parameters							
Moisture	11.1		0.10	%		30-MAY-16	R3469068

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTEXS+F1-HSMS-WP	Soil	BTX plus F1 by GCMS	EPA 8260C

The soil methanol extract is added to water and reagents, then heated in a sealed vial to equilibrium. The headspace from the vial is transferred into a gas chromatograph. Target compound concentrations are measured using mass spectrometry detection.

F1-F4-CALC-WP	Soil	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-F4-TMB-FID-WP	Soil	CCME Total Extractable Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001

A soil or sediment sample is extracted with 1:1 hexane/acetone in a tumbler, followed by a silica gel clean up to facilitate separation of the hydrocarbons from other polar extractions. An aliquot of the solvent is analyzed using a gas chromatograph equipped with a flame -ionization detector.

MOISTURE-WP	Soil	% Moisture	CCME CWS-PHC, Pub #1310, Dec 2001

Moisture content in solid matrices is determined gravimetrically after drying to constant weight at 105□C.

XYLENES-SUM-CALC-WP	Soil	Sum of Xylene Isomer Concentrations	CALCULATED RESULT

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Manitoba
Sustainable Development
Environmental Stewardship Division
Environmental Approvals Branch
1007 Century Street, Winnipeg, Manitoba R3H 0W4
T 204-945-8231 F 204-948-2338
www.manitoba.ca

July 27, 2016

Jennefer Larsen
Project Coordinator, Winnipeg Fleet Management Agency
770 Ross Avenue
Winnipeg, MB R3E 1C6

Dear Ms. Larsen:

Re: Proposed Remediation Plan for 849 Ravelston Avenue, Winnipeg, Manitoba;
Approval under *The Contaminated Sites Remediation Act*

This will acknowledge receipt of the Remediation Plan for the above noted property (the site) dated July 13, 2016 and prepared by Eng-Tech Consulting Limited.

The Remediation Plan states:

- The contaminated soil on the site is related to the former underground storage tanks, and the impacted soil is estimated at 1000 m^3.
- Site remediation via excavation of the contaminated soil above the Canadian Council Ministers of the Environment (CCME) criteria for residential land use is being proposed and is a viable remedial option since the land may be used for residential purposes. The excavation would be limited to the area of the former underground and above ground storage tank nest and will extend until all contaminated soil above the CCME criteria for residential land use is removed.
- The contaminated soil will be hauled to either the Prairie Green Soil Facility in the RM of Rosser or Brady Road Landfill.
- The soil below the CCME criteria will be temporarily stockpiled on site and placed back into the excavation upon removal of the contaminated soil and confirmatory testing of the soil along the excavation walls and base.

This letter constitutes written authorization as specified under *The Contaminated Sites Remediation Act*, C.C.S.M, c. C205, s. 17.1 (1) for the City of Winnipeg to proceed with the remediation of the site as described in the Remediation Plan. Any change to the Remediation Plan must be approved by the undersigned prior to initiating the change.

The site remains designated as an *impacted site* pursuant to *The Contaminated Sites Remediation Act*, C.C.S.M, c. C205 and will remain on the impacted site registry until such time the contaminants are not at a level which may pose a threat to human health or safety or to the environment.

It is requested that a Summary Report documenting the remediation is submitted to this office for review at the completion of the Remediation Plan.

It should be noted that the position of Manitoba Sustainable Development as stated in this letter is based on the information provided to this office by Eng-Tech Consulting Limited and relates only to the matters within the scope of the investigation conducted by Eng-Tech Consulting Limited.

If you have any questions regarding this letter, please contact Warren Rospad, Contaminated Sites Program Specialist at 204-330-2685 or warren.rospad@gov.mb.ca. Please note that electronic submissions are preferred for documents and correspondence.

Sincerely,

Tracey Braun

Tracey Braun
Director

c. File: 50723
Trevor Robertson (Eng-Tech Consulting Limited)
Environmental Compliance and Enforcement