



REPORT TO: Mayor and Members of Council
DATE: March 6, 2019
FROM: Jill Bellchamber-Glazier, CAO-Clerk
SUBJECT: ESA Phase I & II Assessments – Municipal Lands

RECOMMENDATION

THAT Council approve additional boreholes and analytical testing for 208 Walker Street and 139 McRae Street, Glencoe in pursuit of Records of Site Conditions for the properties.

OR

THAT Council approve additional boreholes for 208 Walker Street, Glencoe only, in pursuit of a Record of Site Condition for the Property for use as an arboretum, and

THAT Council consider an alternative use for the municipally-owned lands at 139 McRae Street, Glencoe, and direct staff to provide recommendations on options related to the location of the dog park and potential uses of the property.

BACKGROUND:

Staff were directed to engage a qualified engineering firm to complete Phase I & II environmental assessments and submission of Records of Site Condition (RSC) for the proposed arboretum lands and the existing dog park.

EXP was appointed to undertake the work, and the firm has collected data to complete the Phase I and reviewing samples as part of the Phase II assessment.

The municipality received a technical memo from the EXP engineers regarding the samples gathered thus far. The information was provided to the previous council at an end of term report, noting that the incoming council would be expected to make a decision regarding moving forward with the properties' uses.

A copy of the technical memo is attached for information.

Communities in Bloom Committee is interested on the future direction, as it directly impacts its grant funding and future planning for the arboretum.

RELATIONSHIP TO STRATEGIC PLAN:

Neutral issues (does not support negatively or positively)

ATTACHMENTS:

EXP Technical Memo and Figure 5 and Figure 6



EXP Services Inc.
15701 Robin's Hill Road
London, ON N5V 0A5

Telephone: **519.963.3000**
Facsimile: **519.963.1152**

November 1, 2018

Reference: LON-00016318-EN

Municipality of Southwest Middlesex
Ms. Jillene Bellchamber-Glazier

email: jbellchamber-glazier@southwestmiddlesex.ca

Re: Phase I & II Environmental Site Assessment
139 McRae Street and 208 Walker Street, Glencoe, Ontario

Dear Ms. Bellchamber-Glazier:

1.0 Introduction

EXP Services Inc. (EXP) was retained by Ms. Jillene Bellchamber-Glazier of the Municipality of Southwest Middlesex to complete a Phase I & II Environmental Site Assessment (ESA) of the properties located at 139 McRae Street and 208 Walker Street in Glencoe, Ontario, henceforth referred to as the "Site". The objective of the investigation was to support the filing of a Record of Site Condition in accordance with Ontario Regulation (O.Reg.) 153/04, as amended by the following: O.Reg. 511/09; O.Reg. 245/10; O.Reg. 179/11; and, O.Reg. 269/11 and 333/13. Henceforth, the regulation will be referred to as "O.Reg. 153/03, as amended".

2.0 Phase I ESA Findings

The Site is located to the west of Walker Street and south of McRae Street in the Village of Glencoe, Ontario (Figure 1 – Site Location Plan). The Site is irregular in shape and covers an area of approximately 1.69 hectares (4.17 acres) with frontages along Walker and Mc Rae Streets of approximately 65 and 41 metres respectively. At the time of the investigation, no structures were observed on-Site. The northern portion of the Site (i.e., 208 Walker Street) was observed as vacant land, while the southern portion of the Site (i.e., 139 McRae Street) was predominantly used as a dog park at the time of EXP's Site visit.

Based on the available records review and Site reconnaissance, the southern portion of the Site was developed with railway sidings/spurs, various coal sheds and cattle pens between 1859 and the early

1960s. In the mid 1960s the northern portion of the Site was developed as an agricultural crop inputs facility (bulk storage and handling of fertilizer, pesticides, treated seeds, etc.). The inputs facility extended south towards existing railway spurs, utilizing rail cars to transport bulk materials. The Site operated as an agricultural crop input facility until approximately 2005 under several different owners. By 2005, Cargill, the owner at the time, demolished all former structures and consequently vacated the Site. The Site has remained vacant since 2005. The Municipality of Southwest Middlesex obtained ownership of the northern portion of the Site (208 Walker Street) in 2014 and purchased the southern portion of the Site (139 McRae Street) in 2017. A dog park was erected on portions of 139 McRae Street in 2016 (as depicted by a sign posted on-Site). The remainder of the Site was observed as vacant land at the time of EXP's Site visit on June 28, 2018. Past property uses are summarized in more detail in Table I.

The potentially contaminating activities at the Site and within the Phase I ESA study area that might affect the Site are summarized in Table II and shown on Figure 3A and included the following.

- P1: Importation of fill material of unknown quality on-Site (PCA 30).
- P2: Gasoline and associated products storage in fixed tanks on the subject Site (PCA 28).
- P3: Concrete, Cement and Lime Manufacturing (PCA12).
- P4: Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems (PCA 52).
- P5: Fertilizer Manufacturing, Processing and Bulk Storage (PCA 22).
- P6: Pesticide Manufacturing, Processing, Bulk Storage, and Large-Scale Applications (PCA 40).
- P7: Rail Yards, tracks, spurs (PCA 46).
- P8: Salvage Yard, including automobile wrecking (PCA49)
- P9: Iron and steel manufacturing and processing (PCA32)
- P10: Former door and sash factory and later roof truss manufacturing plant to the east of the Site (suspected storage of drums containing various solvents and other chemicals used in the manufacturing process) (PCA number not applicable)
- P11: Former coal piles along railway lands (PCA number not applicable)

The areas of potential environmental concern identified at the Site are summarized in Table III and included the following:

- The Site was formerly utilized as an agricultural crops inputs facility which handled and stored bulk fertilizer, pesticides, and other agricultural related products. Previous reports suggested that rinsing and cleaning of equipment was completed within the yard areas. Fueling and maintenance on equipment was historically performed on-Site. It was suspected that an above-ground fuel storage tank and later under-ground fuel storage tanks was located on the southeastern portion of 208 Walker Street.
- The Site is abutting CN railway lands to the south and railway sidings were formerly present on the southern portion of the Site.
- A concrete batch plant formerly operated on the adjacent property to the north of the Site (230 McKellar Street). A previous report also suggested that a foundry was formerly present at this location.
- A roof truss manufacturing plant (former sash and door factory) operated to the east of the Site at 140 McRae Street. It was deemed possible that solvents and/or fuels were used at this property in the past.
- An above-ground fuel storage tanks was identified at 7 Glen Avenue, a neighbouring property located approximately 35 metres to the south of the Site.

- An automotive repair facility was identified at 138 McKellar Street, a neighbouring property located approximately 70 metres north of the Site. Previous reports also suggested that an auto wrecker was historically located at this location.
- Railway operations were historically located along the south side of McRae Street to the immediate east of the Site. Historical records showed piles of coal in this area.

Based on the APECs identified at the Site, the following recommendations are given:

APEC Identified	Recommendation	Rationale
SITE		
Former bulk storage and handling of fertilizer, pesticides, and other agricultural input related products at the Site.	Advance boreholes / monitoring wells (BHs/MWs) throughout the Site. Test upper soils for OC and OP Pesticides and nitrates	Bulk storage, handling, and cleaning of equipment used in the fertilizer storage and distribution process may have negatively affected the local soil and groundwater condition.
Presence of fill material on the Site of unknown quality	Advance boreholes / monitoring wells (BHs/MWs) throughout the Site. Test fill material for metals and PAH parameters.	Former railway spur located on south portion of the Site and surrounding railway operations could have resulted in the placement of metals and PAH impacted fill material on the subject Site. In addition, no documentation could be obtained regarding the material used to grade and service the Site or to backfill former excavations on the property.
Former maintenance of equipment on-Site	Advance boreholes/monitoring wells (BHs/MWs) throughout the Site and test soil and groundwater for VOC and PHCs.	Leaks and spills of petroleum products due to maintenance activities at the Site could have negatively affected the soil and groundwater quality at the Site.
Former suspected fuel AST/UST on central eastern portion of the Site.	Advance boreholes / monitoring wells (BHs/MWs) at the central eastern portion of the Site. Test soil and groundwater for PHCs and VOCs parameters.	Leaks or spills of petroleum products into the natural environment could have negatively affected the soil and groundwater quality at the Site.
OFF-SITE		
Former concrete batch plant (and presumed foundry) located to the immediate north of the Site at 230 Walker Street	Advance boreholes/monitoring well along northeastern property limit. Test soil and groundwater for metals and inorganics, PAHs.	Former commercial/industrial operations on the adjacent property to the north of the Site could have negatively affected the soil and groundwater condition at the Site.
Automotive garage located at 138 McKellar Street	Advance borehole/monitoring well on northeastern portion of the Site. Test soil and groundwater for VOCs and PHCs	Leaks and spills of petroleum products due to maintenance activities on this neighbouring property may have negatively affected the soil and groundwater quality at the Site, although it was deemed unlikely, given the local soil stratigraphy and inferred groundwater flow direction.
Above-ground fuel tank formerly identified at 7 Glen Avenue	Advance boreholes along southern Site boundary. Test soil for VOCs/PHCs	Leaks and spills of petroleum product on this neighbouring property could have negatively affected the soil and groundwater quality at the Site, although it was

APEC Identified	Recommendation	Rationale
		deemed unlikely, given the local soil stratigraphy and inferred groundwater flow direction.

Based on the findings of the Phase I ESA and conclusions, a Phase II ESA will be required prior to submitting a Record of Site Condition (RSC).

3.0 Phase II ESA Activities

The drilling portion of the Phase Two ESA investigative program was conducted on July 18 and 19, 2018. Prior to the commencement of drilling activities, the Site was cleared of underground utility services.

The drilling program was undertaken by Direct Environment Drilling Inc (Direct) of London Ontario, an MOECC Licensed well drilling contractor (license #7320), under the full time supervision of EXP field staff. The drilling program consisted of the advancement of sixteen boreholes (BH1 to BH16) through the surficial fill and underlying sand and clayey silt till overburden material to a depth of 4.6 m bgs. The boreholes were advanced using a track-mounted Geoprobe™ (model 7822) dual rod direct push rig. Drilling activities were continuously monitored by EXP field personnel to record the physical characteristics of the soil cores, depth of soil sampling and total depth of borehole. Three (3) of the boreholes (BH 6, 8, and 9) were instrumented with groundwater monitoring wells and were identified with the added suffix "/MW".

The soil sampling program conducted on July 18 and 19, 2018 consisted of assessing soil within the Site for potential COCs associated with the PCAs, which may have contributed to the APECs. The soil samples were tested for various COCs including Metals and Inorganics, Polyaromatic Hydrocarbons (PAHs), Volatile Organic Compounds (VOCs), Petroleum Hydrocarbons (PHCs), Organochlorine Pesticides, Organophosphorus Pesticides, Polychlorinated Biphenyls (PCBs), Nitrates.

The monitoring wells installed in Boreholes 6, 8 and 9 (BH6/MW, BH8/MW and BH9/MW) were initially developed on August 10, 2018 using dedicated bailers and subsequently sampled on August 14, 2018 using low flow sampling technology. There was no evidence of free product (i.e., visible film or sheen) observed during groundwater sampling. The water samples obtained from the monitoring wells were clear, colourless and odourless with no light non-aqueous phase liquid present. It was noted that at the time of sampling, no sheen was observed on the water purged from the wells.

The water samples recovered were tested for various COCs including Metals and Inorganics, Polyaromatic Hydrocarbons (PAHs), Volatile Organic Compounds (VOCs), Petroleum Hydrocarbons (PHCs), Organochlorine Pesticides, Polychlorinated Biphenyls (PCBs) and/or Nitrates.

4.0 Phase II ESA Findings

208 Walker Street (North Parcel)

The general stratigraphy at the Site, as observed in the boreholes, consisted of Sand and Gravel fill material to a depth of 0.2 to 1.5 m overlying clayey silt fill to a depth of 1.5 to 1.6 m, overlying natural clayey silt till/silty clay till to a termination depth of 3.1 to 9.1 m.

Selected soil samples were tested for various COCs including Metals and Inorganics, PAHs, VOCs, PHCs, Organochlorine Pesticides, Organophosphorus Pesticides, PCBs and Nitrates. Exceedances of a few metals and inorganic parameters, specifically Boron (HWS) and Conductivity were detected in some of the soil samples tested. All other parameters were detected at concentrations below their respective 2011

Ministry of the Environment, Conservation and Parks (MECP) Table 3 Site Condition Standards (SCSs) in the soil samples tested.

The water samples recovered were tested for various COCs including Metals and Inorganics, PAHs, VOCs, PHCs, Organochlorine Pesticides, PCBs and Nitrates. All parameters were detected at concentrations below their respective 2011 MECP Table 3 SCSs in the water samples tested.

139 McRae Street (South Parcel)

The general stratigraphy at the Site, as observed in the boreholes, consisted of a thin layer of topsoil or Sand and Gravel fill material to a depth of 0.2 to 0.8 m overlying sand and cinder fill to a depth of 0.8 to 1.4 m, overlying clayey silt to sand fill to 1.4 to 2.1 m overlying natural clayey silt till to a termination depth of 3.1 to 6.1 m.

Selected soil samples were tested for various COCs including Metals and Inorganics, PAHs, VOCs, PHCs, Organochlorine Pesticides, Organophosphorus Pesticides, PCBs and Nitrates. Exceedances of various metals and PAH parameters, including lead, copper, antimony, zinc, selenium, benzo(a)pyrene, naphthalene etc., were detected in most of the soil samples tested. All other parameters were detected at concentrations below their respective 2011 MECP Table 3 SCSs in the soil samples tested.

No water samples were recovered from the south parcel.

5.0 Recommendations

208 Walker Street (North Parcel)

The findings of the Phase II ESA indicated limited impact from Boron (HWS) and Conductivity in the upper fill material on the north parcel. These parameters are considered more of a phytotoxicological parameter which is a concern for plant growth. The vertical and lateral extent of the Boron (HWS) and Conductivity impacts have not been delineated.

It is recommended to complete additional boreholes and analytical testing on this parcel to delineate the vertical and lateral extent of impact. This information will be used to establish a cost estimate for remediation of this parcel in order to support the filing of an RSC to allow the proposed use. Additional boreholes will also be completed along the boundary with the south parcel where PAH and metals impacts had been identified.

139 McRae Street (South Parcel)

The findings of the Phase II ESA indicated impact from various metals and PAH parameters, including lead, copper, antimony, zinc, selenium, benzo(a)pyrene, naphthalene etc., in most of the soil samples tested from the south parcel. The vertical and lateral extent of the impacts have not been delineated however it is expected that most of the parcel is impacted. The impact appears to be located within the cinder fill which is present beneath a thin layer of topsoil or granular fill and extends to an average depth of about 1.5m.

The options for this parcel will depend on the future intended land use and could include remediation, Screening Level Risk Assessment (SLRA) or Site Specific Risk Assessment (SSRA). If the intended future land use is to continue as a dog park or change to a more sensitive land use, a Record of Site Condition (RSC) would be required which would involve either a remedial program or the completion of an SSRA with possible risk mitigation measures. If the intended future land use is to develop the property as a parking lot, an SLRA with no RSC would likely be sufficient. An SLRA would include evaluation of both risks to

humans and ecological receptors from existing soil and/or groundwater impacts but is not intended to support the filing of an RSC and is not reviewed by the MECP.

Regardless of the option chosen, it will be required to complete additional boreholes and analytical testing on this parcel to delineate the vertical and lateral extent of impact. This information will be used to establish a cost estimate for possible remediation of this parcel in order to support the filing of an RSC or to provide information for the SSRA/SLRA.

5.0 Closure

We trust this report satisfies your immediate requirements. If you have any questions regarding the information in this report, please do not hesitate to contact this office.

Yours truly,

exp Services Inc.



Scott Aziz, P.Eng. QP ESA
Senior Project Manager and Team Leader
Earth and Environmental



Sample I.D.:	BH15 SA2	
Depth:	0.8 - 1.5 m bgs	
Sampling date:	19-Jul-18	
Parameter	Result (ug/g)	Table 3 SCS (ug/g)
Hot Water Ext. Boron	1.6	1.5

Sample I.D.:	BH7 SA1	
Depth:	0 - 0.8 m bgs	
Sampling date:	18-Jul-18	
Parameter	Result (ug/g)	Table 3 SCS (ug/g)
Hot Water Ext. Boron	2.2	1.5

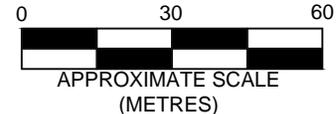
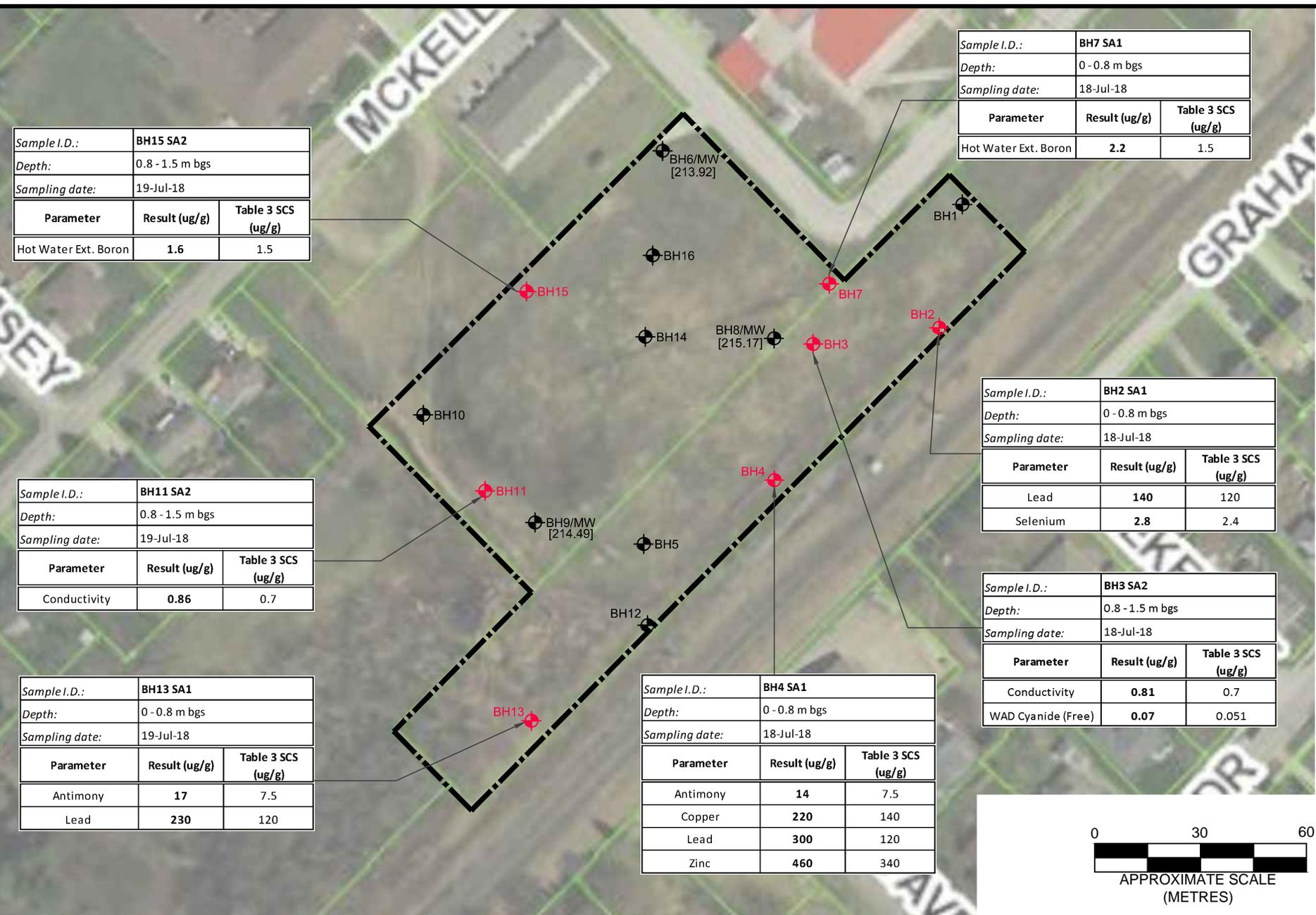
Sample I.D.:	BH11 SA2	
Depth:	0.8 - 1.5 m bgs	
Sampling date:	19-Jul-18	
Parameter	Result (ug/g)	Table 3 SCS (ug/g)
Conductivity	0.86	0.7

Sample I.D.:	BH2 SA1	
Depth:	0 - 0.8 m bgs	
Sampling date:	18-Jul-18	
Parameter	Result (ug/g)	Table 3 SCS (ug/g)
Lead	140	120
Selenium	2.8	2.4

Sample I.D.:	BH13 SA1	
Depth:	0 - 0.8 m bgs	
Sampling date:	19-Jul-18	
Parameter	Result (ug/g)	Table 3 SCS (ug/g)
Antimony	17	7.5
Lead	230	120

Sample I.D.:	BH3 SA2	
Depth:	0.8 - 1.5 m bgs	
Sampling date:	18-Jul-18	
Parameter	Result (ug/g)	Table 3 SCS (ug/g)
Conductivity	0.81	0.7
WAD Cyanide (Free)	0.07	0.051

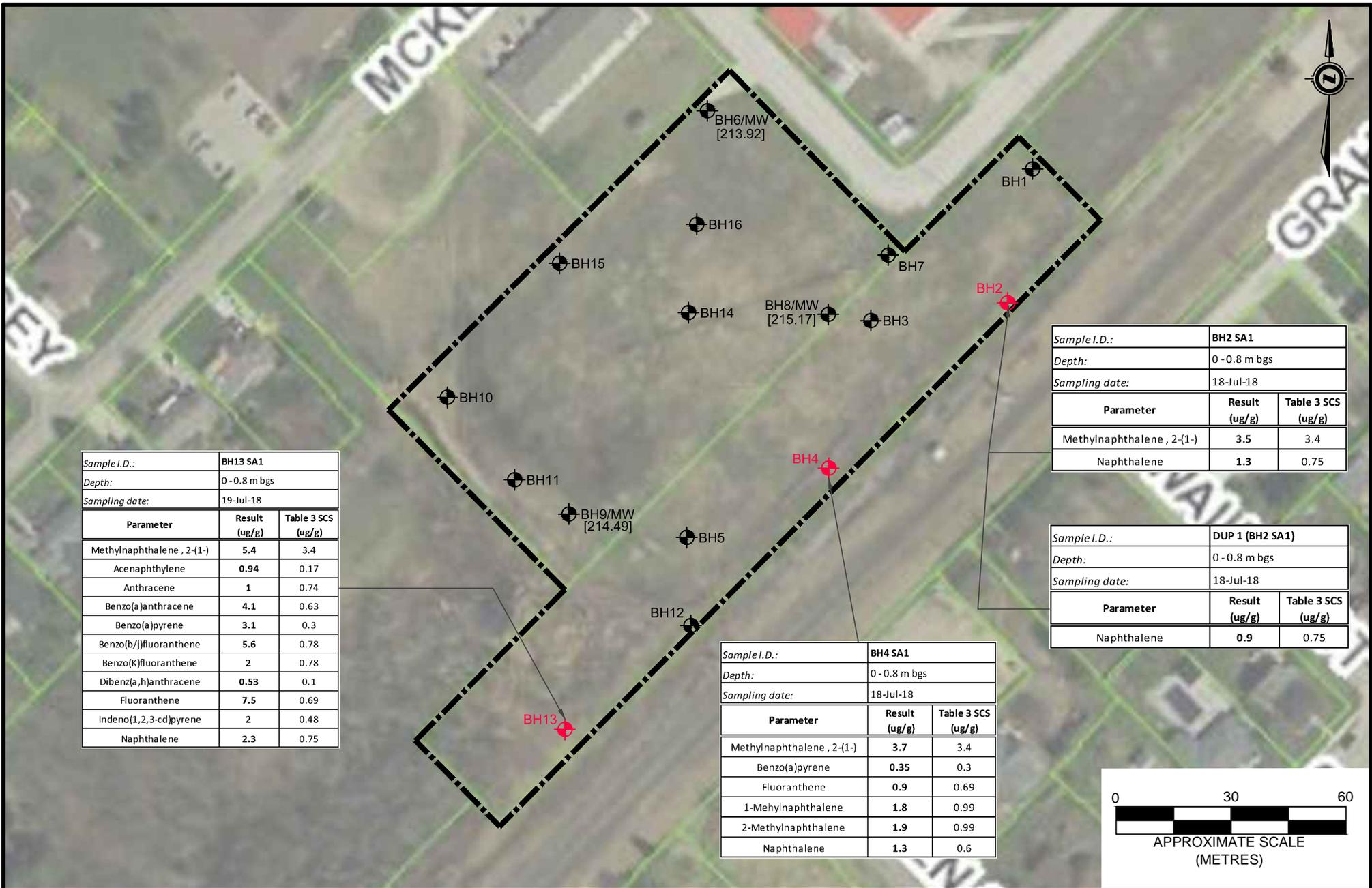
Sample I.D.:	BH4 SA1	
Depth:	0 - 0.8 m bgs	
Sampling date:	18-Jul-18	
Parameter	Result (ug/g)	Table 3 SCS (ug/g)
Antimony	14	7.5
Copper	220	140
Lead	300	120
Zinc	460	340



EXP Services Inc.
15701 Robin's Hill Road
London, Ontario
N5V 0A5

CLIENT:	MUNICIPALITY OF SOUTHWEST MIDDLESEX	
SITE:	208 WALKER STREET & 139 MCRAE STREET, GLENCOE, ONTARIO	
TITLE:	PLAN VIEW - METALS AND INORGANICS IN SOIL EXCEEDING THE 2011 MOECC TABLE 3 SCSs	
DATE:	PROJECT No:	FIG
AUGUST 2018	LON-00016318-EN	5

	BOREHOLE/MONITORING WELL LOCATIONS
	BOREHOLE/MONITORING WELL with concentrations above the MOECC (2011) Table 3 SCS
[214.49]	GROUNDWATER ELEVATION SINGLE WELL
	INFERRED GROUNDWATER FLOW DIRECTION



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CLIENT: MUNICIPALITY OF SOUTHWEST MIDDLESEX
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LEGEND:

- BOREHOLE/MONITORING WELL LOCATIONS
- BOREHOLE/MONITORING WELL with concentrations above the MOECC (2011) Table 3 SCS
- [214.49] GROUNDWATER ELEVATION SINGLE WELL
- INFERRED GROUNDWATER FLOW DIRECTION