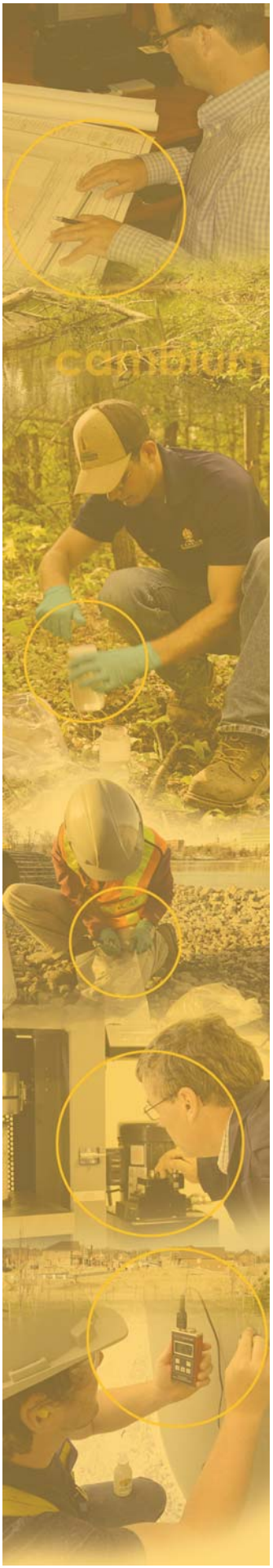

Phase Two Conceptual Site Model
Midland Bay Landing
420 Bayshore Drive, Midland, Ontario

Cambium Reference No.: 6820-001

2019-04-01

Prepared for: The Town of Midland

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List of Acronyms

APEC	-	area of potential environmental concern
AST	-	aboveground storage tank
mbgs	-	metres below ground surface
BH	-	borehole
BTEX	-	benzene, toluene, ethylbenzene, and xylenes
COPC	-	contaminants of potential concern
EC	-	electrical conductivity
ESA	-	Environmental Site Assessment
FIP	-	fire insurance plan
LNAPL	-	Light non-aqueous phase liquids
Ministry	-	Ministry of the Environment, Conservation and Parks
MW	-	monitoring well
O.Reg.	-	Ontario Regulation
PAHs	-	polycyclic aromatic hydrocarbons
PCA	-	potentially contaminating activity
PCBs	-	Polychlorinated biphenyls
PHCs	-	petroleum hydrocarbons
ppm	-	parts per million
RSC	-	Record of Site Condition
SAR	-	sodium adsorption ratio
SCS	-	Site Condition Standards
UST	-	underground storage tank
VC	-	vinyl chloride
VOCs	-	volatile organic compounds

1.0 Introduction

The Corporation of the Town of Midland (Client) retained Cambium Inc. (Cambium) to complete a Phase Two Environmental Site Assessment (ESA) of the property at 420 Bayshore Drive in Midland, Ontario (Site or Phase Two Property). The property was formerly 288, 420, and 475 Bayshore Drive. The Phase Two ESA will be used to support a Record of Site Condition filing under Ontario Regulation (O.Reg.) 153/04.

2.0 Site Description

The Site is on the north side of Bayshore Drive and extends from William Street to Queen Street in Midland, Ontario in the County of Simcoe. The site location is shown on Figure 1.

To summarize current and historical property use and identify on-site potentially contaminating activities (PCAs), the Site was divided into the following four areas as shown on Figure 2.

Area 1

- Former Unimin Canada Ltd. (Unimin) plant property
- Fenced and secured
- Unimin operated an aggregate processing plant (silica sand products)
- Plant closed in 2012; plant removed in 2013
- The Town of Midland purchased this land in 2014

Area 2

- Vacant lands used as informal/impromptu open space area with multiple trails and pedestrian access to waterfront/water's edge
- Lands are not fenced and have never been signed as private
- Last known industrial use was coal docks and coal storage, which were removed 30 or more years ago. Unimin's (as Indusmin) previous owner purchased these vacant lands so that they would not have immediate neighbours.

- Area 2 had industrial uses prior to the coal docks that included rail spur lines, and lumber and gristmills.
- The Town of Midland purchased this land in 2014

Area 3

- Area 3 is a small portion of Area 2 where passenger boats (Miss Midland and Serendipity Princess) are dry docked over the winter.
- Dry docking for +/- 15 years through lease with previous owner (Unimin)
- Leases have continued under Town of Midland ownership

Area 4

- Area 4 is a roughly 1.21 ha (3 acre) portion of Area 2 that Town previously leased (since 2002) from Unimin for use as a parking lot, park, boat launch (summer), and snow mobile access to the lake (winter).
- These uses have continued since the purchase of Area 2 in 2014. The park was renamed Midland Bay Landing Park in 2014.

Details regarding the historical and current uses of these areas was provided to the Ministry for comment on interim temporary uses prior to redevelopment. The Ministry responded that:

- Areas 1 and 3 would be deemed industrial use and would require a Record of Site Condition (RSC) before utilization for a more sensitive use.
- The Area 2 lands have been used as parkland for more than 30 years, and as such, an RSC would not be required to continue this use or change the use to residential.

The Area 4 lands have been and are continuing to be used as parkland, and as such, an RSC would not be required to continue this use or change the use to residential.

The proposed future use of the Site is mixed commercial/residential and parkland. A conceptual land use plan is provided as Figure 3 .

3.0 Phase Two Conceptual Site Model

As per Table 1 of Schedule E of O.Reg. 153/04, a Phase Two Conceptual Site Model (CSM) is required assist the qualified person(s) (QP) in illustrating the results of the Phase Two ESA, demonstrating the current condition of the Phase Two Property, or where remedial actions have been undertaken, the condition of the Phase Two Property before the remedial actions were undertaken. The following sections provide the requisite narrative that accompanies the attached figures.

The mandatory CSM components, as specified in Schedule E, and Phase Two CSM cross-references are summarized below.

Mandatory Conceptual Site Model Component	Location in CSM (Section and/or Figure No.)
1. Provide a narrative description and assessment of,	
i. areas where potentially contaminating activity has occurred,	Section 4.1, Table A, Figure 4 (off-site), Figure 5 (on-site)
ii. areas of potential environmental concern, and	Section 4.2, Table B, Figure 6
iii. any subsurface structures and utilities on, in or under the phase two property that may affect contaminant distribution and transport.	Section 4.3
2. a description of and, as appropriate, figures illustrating, the physical setting of the phase two property and any areas under it including,	
i. stratigraphy from ground surface to the deepest aquifer or aquitard investigated,	Section 5.1, Figure 10a and Figure 10b
ii. hydrogeological characteristics, including aquifers, aquitards and, in each hydrostratigraphic unit where one or more contaminants is present at concentrations above the applicable site condition standards, lateral and vertical gradients,	Section 5.2, Figure 7 through Figure 21
iii. approximate depth to bedrock,	Section 5.1
iv. approximate depth to water table,	Section 5.2, Figure 7 and Figure 8
v. any respect in which section 41 or 43.1 of the regulation applies to the property,	Section 5.3
vi. areas where soil has been brought from another property and placed on, in or under the phase two property, and	Not applicable
vii. approximate locations, if known, of any proposed buildings and other structures,	Section 4.4, Figure 3
3. where a contaminant is present on, in or under the phase two property at a concentration greater than the applicable site condition standard, identification of,	
i. each area where a contaminant is present on, in or under the phase two property at a concentration greater than the applicable site condition standard,	Sections 6.1 and 6.2, Figure 11 through Figure 21
ii. the contaminants associated with each of the areas referred to in subparagraph i,	

Mandatory Conceptual Site Model Component	Location in CSM (Section and/or Figure No.)
iii. each medium in which a contaminant associated with an area referred to in subparagraph is present,	
iv. a description and assessment of what is known about each of the areas referred to in subparagraph i,	Sections 4.2, 6.1 and 6.2, Figure 11 through Figure 21
v. the distribution, in each of the areas referred to in subparagraph i, of each contaminant present in the area at a concentration greater than the applicable site condition standard, for each medium in which the contaminant is present, together with figures showing the distribution,	Sections 6.1 and 6.2, Figure 11 through Figure 21
vi. anything known about the reason for the discharge of the contaminants present on, in or under the phase two property at a concentration greater than the applicable site condition standard into the natural environment,	Sections 4.2, 6.1 and 6.2
vii. anything known about migration of the contaminants present on, in or under the phase two property at a concentration greater than the applicable site condition standard away from any area of potential environmental concern, including the identification of any preferential pathways,	Sections 6.1 and 6.2
viii. climatic or meteorological conditions that may have influenced distribution and migration of the contaminants, such as temporal fluctuations in ground water levels, and	Section 5.2.1
ix. if applicable, information concerning soil vapour intrusion of the contaminants into buildings including,	Sections 4.3 and 4.4
A. relevant construction features of a building, such as a basement or crawl space,	
B. building heating, ventilating and air conditioning design and operation, and	
C. subsurface utilities,	

Mandatory Conceptual Site Model Component	Location in CSM (Section and/or Figure No.)
4. where contaminants on, in or under the phase two property are present at concentrations greater than the applicable site condition standard, one or more cross-sections showing,	
i. the lateral and vertical distribution of a contaminant in each area where the contaminants is present at concentrations greater than the applicable site condition standard in soil, ground water and sediment,	Figure 11 through Figure 21
ii. approximate depth to water table in each area referred to in subparagraph i,	
iii. stratigraphy from ground surface to the deepest aquifer or aquitard investigated, and	
iv. any subsurface structures and utilities that may affect contaminant distribution and transport in each area referred to in subparagraph i.	
5. for each area where a contaminant is present on, in or under the property at a concentration greater than the applicable site condition standard for the contaminant, a diagram identifying, with narrative explanatory notes,	
i. the release mechanisms,	Section 7.0 Figure 22 and Figure 23
ii. contaminant transport pathway,	
iii. the human and ecological receptors located on, in or under the phase two property,	
iv. receptor exposure points, and	
v. routes of exposure.	

4.0 APECs, PCAs, and Structures

Cambium identified 25 PCAs, 14 on-site and 11 off-site, within the Phase One ESA study area. Cambium assessed the PCAs for their risk of contamination to the Site. This assessment resulted in 20 PCAs that contribute to areas of potential environmental concern (APECs). The PCAs, APECs, and subsurface utilities and structures on and around the Site are discussed in the following sections. PCAs and APECs are summarized in Table A and Table B, respectively.

4.1 PCAs

The following on-site and off-site PCAs were identified by the Phase One ESA. Surrounding property use and off-site PCA locations are shown on Figure 4. On-site PCA locations are shown on Figure 5.

On-site

PCA #1 On-site rail lines, spurs, and sidings (PCA #46 - Rail Yards, Tracks and Spurs).

PCA #2 On-site storage of coal (Other PCA - Coal Storage).

PCA #3 On-site transformer use – east portion of 288 Bayshore Drive (PCA #55 - Transformer Manufacturing, Processing and Use).

PCA #4 On-site storage of gasoline in an underground storage tank (UST) to north of sawmill/joiner shop building (PCA #28 - Gasoline and Associated Products Storage in Fixed Tanks).

PCA #5 On-site storage of fuel oil in USTs to the south of the sawmill/joiner shop building (PCA #28 - Gasoline and Associated Products Storage in Fixed Tanks).

PCA #6 On-site storage of fuel oil in USTs to the east of the former furnace shop building (PCA #28 - Gasoline and Associated Products Storage in Fixed Tanks).

PCA #7 On-site port activities related to off-loading of coal and Unimin aggregates (PCA #44 - Port Activities, including Operation and Maintenance of Wharves and Docks).

PCA #8 On-site painting activities (PCA #39 - Paints Manufacturing, Processing and Bulk Storage).

PCA #9 On-site machine shop activities (PCA #34 - Metal Fabrication).

PCA #10 On-site furnace/smithing shop activities (PCA #33 - Metal Treatment, Coating, Plating and Finishing).

PCA #11 On-site oil house (PCA #28 - Gasoline and Associated Products Storage in Fixed Tanks).

Off-site

PCA #12 Industrial activities at the Midland Boat Works to the west (PCA #7 - Boat Manufacturing).

PCA #13 Industrial activities at the Midland Engine Works and Manton Foundry (machine shop) to the south (PCA #34 - Metal Fabrication).

PCA #14 Importation of fill material of unknown quality to the Site (PCA #30 - Importation of Fill Material of Unknown Quality).

PCA #15 On-site storage of PCBs – northeast corner of 420 Bayshore Drive (Area 1) (PCA #55 - Transformer Manufacturing, Processing and Use).

PCA #16 Waste management activities at 200 Bay Street (PCA #58 - Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners).

PCA #17 Repair of marine vehicles at 171 Midland Avenue (PCA #27 - Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles).

PCA #18 Port activities at 171 Midland Avenue (PCA #44 - Port Activities, including Operation and Maintenance of Wharves and Docks).

PCA #19 Storage of fuel in fixed tanks at 171 Midland Avenue (PCA #28 - Gasoline and Associated Products Storage in Fixed Tanks).

PCA #20 Storage of fuel in fixed tanks at 475 Bay Street (PCA #28 - Gasoline and Associated Products Storage in Fixed Tanks).

PCA #21 Operation of transportation systems at 475 Bay Street (PCA #52 - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems).

PCA #22 Fuel release at 202 King Street (Other PCA - Fuel Spill).

PCA #23 Presence of contaminated sediment at Midland Public Harbour (PCA #44 - Port Activities, including Operation and Maintenance of Wharves and Docks).

PCA #24 On-site transformer use – within and south of the main Unimin building (PCA #55 - Transformer Manufacturing, Processing and Use).

PCA #25 Operation of transportation systems and fuelling within the Marine Railway enclosure (PCA #52 - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems).

Table A: PCAs Identified by the Phase One ESA

PCA #	Company	Address	Distance and Direction from Site	PCA Description	Source	APEC (Yes/No)
1	Grand Trunk Railway	420 Bayshore Drive	On-site	On-site rail lines, spurs, and sidings: Rail sidings traversing the Site from east to west; Grand Trunk Railway main line and spur lines along the south side of the Site	1911, 1917, and 1946 FIP, aerials	Yes – APEC A
2	Playfair Coal Dock / Central Coal Company	420 Bayshore Drive	On-site	On-site storage of coal: Playfair Coal Dock present on the eastern portion of the Site	1911, 1917, and 1946 FIP	Yes – APEC B
3	Grand Trunk Railway	288 Bayshore Drive	On-site	On-site transformer use (Area 1)	1917 FIP	Yes – APEC C
4	Midland Ship Building Co. Limited	420 Bayshore Drive	On-site	On-site storage of gasoline in a UST to north of sawmill/joiner shop building (Area 1)	1946 FIP	Yes – APEC D
5	Midland Ship Building Co. Limited	420 Bayshore Drive	On-site	On-site storage of fuel oil in USTs to the south of the sawmill/joiner shop building (Area 1)	1946 FIP	Yes – APEC E
6	Midland Dry Dock Company Ltd.	420 Bayshore Drive	On-site	On-site storage of fuel oil in USTs to the east of the former furnace shop building (Area 1)	1917 FIP	Yes – APEC F
7	James Playfair & Company / Midland Dry Dock Company Ltd. / Midland Ship Building Co. Limited / Unimin Canada Ltd.	420 Bayshore Drive	On-site	On-site port activities related to off-loading of coal and Unimin aggregates along the north side of the Site	1911, 1917, and 1946 FIP, previous environmental reports, aerials	Yes – APEC G
8	Midland Ship Building Co. Limited	420 Bayshore Drive	On-site	On-site painting activities: Paint shop building (Area 1)	1946 FIP	Yes – APEC H
9	Midland Dry Dock Company Ltd.	420 Bayshore Drive	On-site	On-site machine shop activities: Punch/machine shop building (Area 1)	1917 FIP	Yes – APEC I
10	Midland Dry Dock Company Ltd.	420 Bayshore Drive	On-site	On-site furnace/smithing shop activities: Furnace shop building (Area 1)	1917 FIP	Yes – APEC J
11	James Playfair & Company	420 Bayshore Drive	On-site	On-site oil house: Oil House (Area 1)	1911 FIP	Yes – APEC S
12	Midland Boat Works	171 Midland Avenue	Adjacent to the west	Industrial activities at the Midland Boat Works to the west	1946 FIP	Yes – APEC K
13	Midland Engine Works / Manton Foundry	174 Manly Street	50 m south	Industrial activities at the Midland Engine Works and Manton Foundry (machine shop) to the south	1911, 1917, and 1946 FIP	Yes – APEC L

PCA #	Company	Address	Distance and Direction from Site	PCA Description	Source	APEC (Yes/No)
14	Unknown	420 Bayshore Drive	On-site	Importation of fill material of unknown quality	Previous environmental reports, site reconnaissance	Yes – APEC N
15	Unimin Canada Ltd.	420 Bayshore Drive	On-site	On-site storage of PCBs – southeast corner of Area 1	Site plans	Yes – APEC M
16	Midland Water Pollution Control Plant	200 Bay Street	175 m southeast	Waste management activities at 200 Bay Street	ERIS report, site reconnaissance	No*
17	Central Marine / Midland Marina	171 Midland Avenue	Adjacent to the west	Repair of marine vehicles at 171 Midland Avenue	ERIS report, site reconnaissance	Yes – APEC K
18	Central Marine / Midland Marina	171 Midland Avenue	Adjacent to the west	Port activities at 171 Midland Avenue	ERIS report, aerials, site reconnaissance	Yes – APEC P
19	Central Marine / Midland Marina	171 Midland Avenue	Adjacent to the west	Storage of fuel in fixed tanks at 171 Midland Avenue	ERIS report, site reconnaissance	Yes – APEC Q
20	Penetang-Midland Coach Lines	475 Bay Street	200 m southwest	Storage of fuel in fixed tanks at 475 Bay Street	ERIS report	No*
21	Penetang-Midland Coach Lines	475 Bay Street	200 m southwest	Operation of transportation systems at 475 Bay Street	ERIS report	No*
22	Ogilvie Mills	202 King Street	250 m west	Fuel release at 202 King Street	ERIS report	No*
23	Midland Public Harbour	165 King Street	140 m west	Presence of contaminated sediment at Midland Public Harbour	ERIS report	No*
24	Unimin Canada Ltd.	420 Bayshore Drive	On-site	On-site transformer use – within and south of the main Unimin building (Area 1)	Ministry FOI response	Yes – APEC O
25	The Town of Midland	420 Bayshore Drive	On-site	Operation of transportation systems and fuelling within the Marine Railway enclosure (Area 3)	Site reconnaissance	Yes – APEC R

Notes: PCA # - as defined in column A of Table 2 in Schedule D of Ontario Regulation 153/04.
* - due to distance and direction (cross-gradient) from Site

4.2 Areas of Potential Environmental Concern

The following 20 APECs were identified at the Site. The APECs are shown on Figure 6.

APEC A (PCA 46 - Rail Yards, Tracks and Spurs) – Former rail sidings traversed the Site from east to west and the Grand Trunk Railway main line and spur lines were along the south side of the Site were identified as a concern. Soil and groundwater underlying the Site are potentially affected by the former rail sidings, main line, and spurs. COPCs are PHCs, PAHs, and metals.

APEC B (Other PCA - Coal storage) - Playfair Coal Dock formerly occupied the eastern portion of the Site (Area 2). Soil underlying Area 2 is potentially affected by the former coal storage. COPCs are PAHs and metals.

APEC C (PCA 55 - Transformer Manufacturing, Processing and Use) – A transformer house was along the east side of Area 2. Soil underlying the former transformer house is potentially affected by the former transformer use. COPCs are PCBs.

APEC D (PCA 28 - Gasoline and Associated Products Storage in Fixed Tanks) – A gasoline UST was north of the sawmill/joiner shop building in Area 1. Soil and groundwater around and underlying the former UST are potentially affected by the storage and use of gasoline in the UST. COPCs are BTEX, PHCs, and metals.

APEC E (PCA 28 - Gasoline and Associated Products Storage in Fixed Tanks) - Fuel oil USTs were south of the sawmill/joiner shop building in Area 1. Soil and groundwater around and underlying the former USTs are potentially affected by the storage and use of fuel oil in the USTs. COPCs are BTEX and PHCs.

APEC F (PCA 28 - Gasoline and Associated Products Storage in Fixed Tanks) - Fuel oil USTs were east of the furnace shop building in Area 1. Soil and groundwater around and underlying the former USTs are potentially affected by the storage and use of fuel oil in the USTs. COPCs are BTEX and PHCs.

APEC G (PCA 44 - Port Activities, including Operation and Maintenance of Wharves and Docks) - On-site port activities related to off-loading of coal and Unimin aggregates. Surface water and sediment on the northwest and northeast corners of Area 1 and on the northeast corner of Area 2 are potentially affected by former port activities. COPCs are PHCs, PAHs, and metals.

APEC H (PCA 39 - Paints Manufacturing, Processing and Bulk Storage) – A paint shop was along the north side of Area 1. Soil and groundwater underlying the former shop are potentially affected by paint activities. COPCs are VOCs and metals.

APEC I (PCA 34 - Metal Fabrication) – A punch/machine shop was in the middle portion of Area 1. Soil and groundwater underlying the former shop are potentially affected by machining activities. COPCs are VOCs and metals.

APEC J (PCA 33 - Metal Treatment, Coating, Plating and Finishing) – A furnace shop was in the southwest corner of Area 1. Soil underlying the former shop is potentially affected by metal treatment activities. COPCs are metals.

APEC K (PCA 7 - Boat Manufacturing; PCA 27 - Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles) - Midland Boat Works, a boat manufacturer was at 171 Midland Avenue and Central Marine, which repairs marine vehicles, is currently at 171 Midland Avenue. Groundwater underlying the west property boundary is potentially affected by former boat manufacturing and current marine vehicle repair activities west of the Site. COPCs are VOCs, PHCs, and metals.

APEC L (PCA 34 - Metal Fabrication) - Midland Engine Works and Manton Foundry, both machine shops, were at 174 Manly Street. Groundwater at the south property boundary is potentially affected by former machine shops south of the Site. COPCs are VOCs, PHCs, and metals.

APEC M (PCA 55 - Transformer Manufacturing, Processing and Use) - On-site storage of PCBs in northeast corner of Area 1. Soil underlying the former storage area is potentially affected by leaks or spills of PCBs from the storage containers. COPCs are PCBs.

APEC N (PCA 30 - Importation of Fill Material of Unknown Quality) - Importation of fill material of unknown quality to the Site. Previous environmental reports indicate that soil across the Site is affected by the presence of fill material. Previous environmental reports indicate that groundwater across the Site is not affected by the presence of fill material. COPCs are PHCs, PAHs, metals, electrical conductivity, and SAR.

APEC O (PCA 55 - Transformer Manufacturing, Processing and Use) - On-site transformer use within and south of the main Unimin building. Soil underlying the former main Unimin building and south of the former building is potentially affected by the use of transformers. COPCs are PCBs.

APEC P (PCA 44 - Port Activities, including Operation and Maintenance of Wharves and Docks) - Port activities at 171 Midland Avenue. Surface water and sediment along the north side of the Site are potentially affected by port activities west of the Site. COPCs are PHCs, PAHs, and metals.

APEC Q (PCA 28 - Gasoline and Associated Products Storage in Fixed Tanks) - Storage of fuel in fixed tanks at 171 Midland Avenue. Groundwater underlying the southwest property boundary is potentially affected by fuel stored and used in fixed tanks west of the Site. COPCs are BTEX, PHCs, and metals.

APEC R (PCA 52 - Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems) - Operation of transportation systems and fuelling within the Marine Railway enclosure. Soil and groundwater underlying the west side of the marine railway enclosure are potentially affected by storage, maintenance, and fueling of passenger boats, and the motor and pulley equipment used for the marine rail system. COPCs are BTEX, PHCs, and metals.

APEC S (PCA 28 - Gasoline and Associated Products Storage in Fixed Tanks) – An oil house was on the west side of Area 1. Soil and groundwater underlying the former oil house are potentially affected by the storage and use of the oil. COPCs are PHCs.

Table B: Areas of Potential Environmental Concern

Area of Potential Environmental Concern [1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-site or off-site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC A	Entire footprint of the Site	46. Rail Yards, Tracks and Spurs	on-site	PHCs, PAHs, Metals	Soil & Groundwater
APEC B	Area 2	Other PCA - Coal storage	on-site	PAHs, Metals	Soil
APEC C	Footprint of transformer house along the east side of Area 2	55. Transformer Manufacturing, Processing and Use	on-site	PCBs	Soil
APEC D	Footprint of gasoline UST north of the sawmill/joiner shop building in Area 1	28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	BTEX, PHCs, Metals	Soil & Groundwater
APEC E	Footprint of fuel oil USTs south of the sawmill/joiner shop building in Area 1	28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	BTEX, PHCs	Soil & Groundwater
APEC F	Footprint of fuel oil USTs east of the furnace shop building in Area 1	28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	BTEX, PHCs	Soil & Groundwater
APEC G	Water Lot portion of Site at docks. Northwest and northeast corners of Area 1; northeast corner of Area 2.	44. Port Activities, including Operation and Maintenance of Wharves and Docks	on-site	PHCs, PAHs, Metals	Surface Water & Sediment
APEC H	Footprint of paint shop building along the north side of Area 1	39. Paints Manufacturing, Processing and Bulk Storage	on-site	VOCs, Metals	Soil & Groundwater
APEC I	Footprint of punch/machine shop building in the middle portion of Area 1	34. Metal Fabrication	on-site	VOCs, Metals	Soil & Groundwater
APEC J	Footprint of furnace shop building in the southwest corner of Area 1	33. Metal Treatment, Coating, Plating and Finishing	on-site	Metals	Soil
APEC K	West property boundary	7. Boat Manufacturing	off-site; adjacent property to west	VOCs, PHCs, Metals	Groundwater
APEC L	South property boundary	27. Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicle 34. Metal Fabrication	off-site to the south	VOCs, PHCs, Metals	Groundwater

Area of Potential Environmental Concern [1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-site or off-site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC M	PCBs Storage Area in northeast corner of Area 1	55. Transformer Manufacturing, Processing and Use	on-site	PCBs	Soil
APEC N	Footprint of the Site	30. Importation of Fill Material of Unknown Quality	on-site	PHCs, PAHs, Metals	Soil
APEC O	Transformers within and south of main Unimin building	55. Transformer Manufacturing, Processing and Use	on-site	PCBs	Soil
APEC P	Aquatic areas along the north side of the Site	44. Port Activities, including Operation and Maintenance of Wharves and Docks	off-site; adjacent property to west	PHCs, PAHs, Metals	Surface Water and Sediment
APEC Q	West property boundary	28. Gasoline and Associated Products Storage in Fixed Tanks	off-site; adjacent property to west	BTEX, PHCs, Metals	Groundwater
APEC R	West side of marine rail system enclosure	52. Storage, maintenance, fuelling and repair of equipment, vehicles, and material used to maintain transportation systems	on-site	BTEX, PHCs, Metals	Soil & Groundwater
APEC S	Footprint of Oil House building	28. Gasoline and Associated Products Storage in Fixed Tanks	on-site	BTEX, PHCs, Metals	Soil & Groundwater

Notes:

1 - Area of Potential Environmental Concern means the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through, (a) identification of past or present uses on, in or under the phase one property, and (b) identification of potentially contaminating activity.
2 - Potentially Contaminating Activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in Phase One study area
3 - Contaminants of potential concern are identified using the Method Groups as identified in the "Protocol for in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011.

4.3 Subsurface Structures and Utilities

Underground utilities are present along the south property boundary, in the marine railway enclosure, and on the east side of the Site. The depth to these utilities is not known. Underground utilities are also present south of the Site beneath Bayshore Drive. On-site underground utilities include:

- Buried electrical on the south property boundary and east property boundary for street lighting
- Buried electrical on the north side of the marine railway enclosure
- A buried storm sewer lateral line entering the southwest side of the Site

Additional buried utilities were historically present at the Site as disconnected electrical wires were observed on the west side of the Site. The depth to historical utilities is not known.

Contaminants from on- and off-site sources could potentially migrate along utility corridors given that the water table is within the depth typical of utility trenches.

4.4 Proposed Structures

The Site will be redeveloped for mixed residential, commercial, and parkland use with low-rise and mid-rise commercial/residential condominium units. The conceptual future land use is shown on Figure 3.

Volatile COCs are present in soil and groundwater at the Site. These COCs may migrate to indoor air under the proposed redevelopment scenario.

5.0 Physical Setting

The following subsections describe the physical setting of the Phase Two Property.

5.1 Stratigraphy

The Site is within the Simcoe Uplands physiographic region , characterized by sand plains with localized clay and till plains. In the general area, the overburden is coarse-textured lacustrine deposits of sand and gravel with minor silt and clay . The soils overlie Gull River formation limestone .

The following soil profile was encountered, with increasing depth, during subsurface investigations completed from 2014 to 2017, and during the Phase Two ESA:

- A 0.6 to 8.5 m thick layer of fill was encountered across the Site. The fill consisted of:
    - A 0.3 m to 2 m thick layer of topsoil was present in the central and western parts of the Site. Quartzite aggregate was encountered at surface on the western portion of the Site to about 1.5 m below ground surface (mbgs).
    - Brown sand, sand and gravel or silty sand fill was encountered in all boreholes at surface or below the discontinuous topsoil or quartzite aggregate. Trace organics, wood pieces, brick pieces, and peat inclusions were noted in some areas. The fill was deepest toward the northern part of the Site along Midland Bay and typically ranged from 4 m to 5.5 mbgs with local areas as shallow as 2.1 mbgs and as deep as 8.5 mbgs. The fill was shallower toward Bayshore Drive ranging from 0.6 m to 4.0 mbgs.
    - A discontinuous woody (peat) layer was encountered beneath the fill generally in the central part of the Site. The fill/peat ranged in thickness from approximately 0.5 m to 3.2 m. Coal was encountered below ground surface in some locations in the middle area of the Site.

- Silty clay was encountered predominantly in the western half of the Site below the fill. The unit extended to 2.1 to 8.0 mbgs. Locally in the eastern part of the Site, the layer extended to 9.3 mbgs.
- Brown to grey sand and gravel to sand was encountered in all the boreholes and test pits. Varying amounts of silt were present. The sand and gravel or sand was observed at varying depths across the Site to the full depths of the boreholes or test pits.
- A brown to grey silty sand to sandy silt was encountered below the sand and gravel unit. Varying amounts of gravel were present. This unit extended to the maximum sampling depth of the investigation (7.5 mbgs).
- A geotechnical investigation noted that auger refusal was encountered across the site resulting in multiple attempts for several of the boreholes. During Cambium's subsurface investigations, refusal using direct push was also encountered across the Site. t It is likely that refusal was the result of boulders within the fill, till, sand and/or in the sand and gravel deposits, since follow-up attempts at nearby locations typically did not encounter refusal at the same depth.

Bedrock was not encountered during subsurface investigations. A review of Ministry water well records indicated that limestone bedrock was encountered at about 30 mbgs in a well to the west of Midland Bay.

5.2 Hydrogeology

5.2.1 Groundwater Elevations and Flow Direction

Water level data was collected from monitoring wells installed in 2013 by Pinchin and in 2018 by Cambium. To evaluating groundwater-flow direction and hydrogeological characteristics, the monitoring wells were classified as shallow or deep based on installation depth of the well screen.

Shallow Wells: BH101, BH102, BH103, BH105, BH107, BH111, BH113, BH114, BH117, BH120, BH123, BH18-01, BH18-05, BH18-06, BH18-07, BH18-11, BH18-12, BH18-13, BH18-16, BH18-18

Deep Wells: BH18-15, BH18-17, BH18-19

Water levels data was available for select wells for May 28, 2018, August 28, 2018, December 13, 2018, and February 15, 2019. Minimum, maximum, and average water depth to the water table are summarized below.

	Shallow Wells	Deep Wells
Minimum (mbgs)	0.34	1.62
Maximum (mbgs)	4.41	4.40
Average (mbgs)	1.91	2.71

The water level (WL) data was used to calculate groundwater elevations. Elevation data is summarized below. Groundwater elevations (GWE) were calculated as follows.

$$GWE = Top\ of\ Casing\ Elevation - WL\ Depth\ below\ Top\ of\ Casing$$

Summary of Groundwater Elevation Data

	Shallow	Deep
Highest (masl)	179.74	177.77
Lowest (masl)	176.54	176.81
Average (masl)	177.76	177.28

masl – metres above sea level

February 2019 elevation data was used to generate flow direction figures for shallow groundwater (Figure 7) and deep (Figure 8) groundwater. Groundwater flow direction in both the shallow and deeper wells was northerly toward Midland Bay.

Pinchin's similarly indicated that the shallow groundwater flow was northerly toward Midland Bay. Groundwater elevations at that time ranged from 175.95 m to 179.17 masl.

The generally shallow depth to groundwater, coarse soil texture, and the proximity to Midland Bay suggests that the current and historical presence of buried utilities would have limited

effect on groundwater flow conditions and contaminant migration at the Site. It is unlikely that utility trenches provided a preferential pathway as trench fill likely had a similar hydraulic conductivity as on-site fill material, which is present across the Site.

It is considered unlikely that climatic or meteorological fluctuations have significantly influenced direction or contaminant distribution. The main influence on both is considered proximity to Midland Bay.

5.2.2 Soil Texture

Pinchin reported grain size results for three soil samples collected from 0.5 to 2.9 mbgs. The results indicated that two samples collected from native soils identified as sand and sandy clay, were medium/fine textured. A sample collected from the fill was coarse-textured.

Stantec reported grain size results for three soil samples. Stantec stated that grain size analysis and field observations indicated that the predominant soil type was coarse-textured sand and gravel.

PML reported grain size results for five soil samples collected from 2.3 to 7.9 mbgs. The results indicated that the silty clay layer encountered below the fill was medium/fine textured. Silty sand, sand, and sand and gravel layers encountered below the fill were coarse textured.

Overall, the grain size results indicated that more than one third of the soil at the Site, measured by volume, is coarse textured.

5.2.3 Lateral and Vertical Hydraulic Gradients

Pinchin reported a horizontal hydraulic gradient of 0.0066 m/m. Hydraulic conductivity values measured using rising head conductivity tests ranged from $7.9x10^{-7}$ m/s to $1.4x10^{-6}$ m/s with a geometric mean of $1.13x10^{-6}$ m/s. Assuming a porosity range of 20% to 25%, Pinchin calculated an average groundwater flow velocity ranging from 0.98 m to 1.17 m per year.

The average hydraulic gradient for the shallow groundwater in August 2018 and February 2019 was 0.02 m/m on the west side of the Site and 0.01 m/m on the east side of the Site. The horizontal hydraulic gradient for the deeper groundwater in February 2019 was 0.01 m/m.

Vertical hydraulic gradients were assessed using the December 2018 and February 2019 water level data for clustered monitoring wells BH18-07/BH18-17, BH18-01/BH18-19, and BH18-11/BH18-15. The average vertical hydraulic gradient was 0.037 m/m at BH18-07/BH18-17, 0.311 m/m at BH18-01/BH18-19, and 0.207 m/m at BH18-11/BH18-15. The gradient was downward at all three well clusters.

Cambium conducted rising and falling head slug tests at four monitoring wells. The slug test results are summarized below. Assuming a porosity range of 20% to 25%, hydraulic gradient of 0.02, and a mean hydraulic conductivity of $6.9x10^{-6}$, the average groundwater flow velocity ranges from 17 m to 22 m per year.

Well ID	Description	Hydraulic Conductivity K (m/s)
MW18-05	Screened in clay	$1.8x10^{-6}$
MW18-07	Screened in silt and sand	$5.9x10^{-6}$
MW18-12	Screened across silt and sand layers	$2.8x10^{-6}$
MW113	Screened across silty sand, sand and gravel, and sandy clay layers	$7.7x10^{-5}$
	Geometric Mean	$6.9x10^{-6}$

5.3 Applicable Site Condition Standards

O.Reg. 153/04, Records of Site Condition – Part XV.1 under the *Environmental Protection Act* specifies acceptable limits of contaminants in soil, groundwater, and sediment in the *Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act*. These standards are presented in tables (Tables 1 to 9) defined by groundwater use (potable or non-potable) and type of remediation (full depth or stratified). Each table presents chemical-specific site condition standards (SCS) based on property use (agricultural, residential/parkland/ institutional, or industrial/community/ commercial), grain-texture (medium/fine-textured or coarse-textured).

Selection of the applicable SCS considered the following site-specific characteristics:

- Intended property use
- Soil characteristics

- Environmental sensitivity, including:
  - Soil pH
  - Proximity to areas of natural significance
- Proximity to water bodies
- Groundwater use

Intended Property-Use

The proposed future use of the Site is mixed commercial/residential and parkland. Therefore, the applicable land use category was residential/parkland/institutional (RPI).

Soil Characteristics

Investigations completed at the Site have identified a complex overburden stratigraphic profile that includes fill (crushed rock, and silty sand and sand with variable gravel content, and cobble and boulders), discontinuous localized peat and organic silt layers, clay, till (sand and sand and gravel), sand, and sand and gravel.

Based on grain size distribution testing completed by Pinchin , Stantec , and PML coarse-textured soil was considered applicable since the unconfined aquifer at the Site is present within both the fine and coarse-textured soil.

Environmentally Sensitive Areas

The O.Reg.153/04 generic SCS cannot be used at properties that are within, include, or are proximate (i.e., within 30 m) to an area of natural significance, when soil pH is not within the allowable ranges for surface (5 to 9) and/or sub-surface soils (5 to 11), or if a Qualified Person (QP) is of the opinion that it is appropriate to apply Section 41 of the regulation.

Areas of Natural and Scientific Interest

Based on a site sensitivity search completed as per the requirements of Section 41 of O.Reg.153/04, no areas of natural significance as defined by the regulation, were identified on or within 30 m of the Site. Therefore, the Site was not considered an environmentally sensitive area and the generic SCS were applicable.

Soil pH

Seventy-five soil samples were submitted for laboratory analysis by Pinchin and Stantec to assess soil pH at the Site. Except for one surface soil sample, soil pH results were within the allowable ranges for surface and sub-surface soil. Four additional soil samples collected within 2 m of the original sample were within the acceptable range for surface soil. The limited presence of low pH at one sample location was considered insignificant and unlikely to affect leaching and/or migration of the COPCs at the Site; therefore, the generic SCS were considered applicable. In addition, while metals were present in soil at concentrations exceeding the applicable SCS, metals in groundwater met the applicable SCS indicating that soil leaching to groundwater is not a pathway of concern.

Qualified Person Opinion

Geologic and hydrogeological parameters that influence the derivation of the O.Reg.153/04 generic SCS were compared to site-specific data and the generic values used in the derivation of the SCS. The site-specific parameters were consistent with the defaults; therefore, it was the QP's opinion that the generic SCS were applicable.

Proximity of Water Bodies and Shallow Bedrock

SCS are defined for properties that are within 30 m of a water body or at which bedrock is less than 2 mbgs.

The Site extends into Midland Bay to the north and is therefore considered within 30 m of a water body. The generic SCS established for properties within 30 m of a water body (i.e., Tables 8 or 9) were considered applicable for the Site.

Subsurface investigations completed at the Site by PML and Cambium did not encounter bedrock to a maximum depth of about 22 mbgs. While Pinchin indicated that bedrock was encountered at depths ranging from 2.9 to 7.5 mbgs, Stantec speculated that the inferred bedrock reported by Pinchin was refusal on boulders or cobbles. Cambium concurs with this opinion; therefore, the generic SCS established for properties with shallow bedrock (i.e., Tables 6 and 7) were not applicable.

Shallow Groundwater and Groundwater Use

Groundwater levels measured by Cambium in 2018 and 2019 ranged from 0.34 to 4.41 mbgs. Generally, the depth to groundwater is less than 2 mbgs except for the west side of the Site and close to the south property line on the eastern side of the Site. Therefore, the generic SCS established for properties with shallow bedrock (i.e., Tables 6 and 7) was deemed applicable when evaluating groundwater quality.

For groundwater at a property to be considered non-potable, all properties within 250 m of the property must be supplied by a municipal drinking water system that does not obtain its water from a groundwater source.

The Town of Midland obtains drinking water from a series of 10 operational groundwater wells. The nearest to the Site is Well #17, which is about 1,200 m west of the Site, west of Midland Bay. This well, along with five others, is within the Vinden Flume well field, which is under the direct influence of surface water sources .

Cambium contracted ERIS to provide a database report for the Phase One study area . The ERIS report did not identify drinking water wells on or within 250 m of the Site.

A review of the mapping provided by the Source Protection Information Atlas indicated the Site is within an area categorized as Highly Vulnerable Aquifer (score 6) and Significant Groundwater Recharge Area (score 6). In addition, land at the northwest corner of the Site is within an area mapped as Wellhead Protection Area D (score 4), which represents a 25 year travel time for groundwater migration to a well.

The Town of Midland and the County of Simcoe were notified by letters dated June 15, 2018 of the intention to apply non-potable groundwater standards at the Site. Neither the Town nor the County responded with an objection within 30 days; therefore, in accordance with Section 35(3)(e), non-potable SCS are considered acceptable to both. These letters were resent on March 20, 2019.

Applicable Generic Site Condition Standards

Based on the foregoing, the following SCS were considered appropriate for use at the Site.

1. For evaluation of soil quality: Table 9: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Groundwater Condition
2. For evaluation of groundwater quality: Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition

6.0 Soil and Groundwater Characterization

6.1 Soil Quality

Soil analysis results are discussed by APEC and relative to elevation in masl. Analysis results are shown on the figures listed below.

Figure 11 Soil Results – PCBs
Figure 11a Soil Results – PHCs
Figure 11b Cross-Sections A-A' and B-B' Cross-Gradient PHCs in Soil
Figure 11c Cross-Sections C-C' to G-G' Along-Gradient PHCs in Soil
Figure 12a Soil Results – BTEX
Figure 12b Cross-Sections A-A' and B-B' Cross-Gradient BTEX in Soil
Figure 12c Cross-Sections C-C' to G-G' Along-Gradient BTEX in Soil
Figure 13a Soil Results – VOCs
Figure 13b Cross-Sections A-A' and B-B' Cross-Gradient VOCs in Soil
Figure 13c Cross-Sections C-C' to G-G' Along-Gradient VOCs in Soil
Figure 14a Soil Results – PAHs
Figure 14b Cross-Sections A-A' and B-B' Cross-Gradient PAHs in Soil
Figure 14c Cross-Sections C-C' to G-G' Along-Gradient PAHs in Soil
Figure 15a Soil Results – Metals
Figure 15b Cross-Sections A-A' and B-B' Cross-Gradient Metals in Soil
Figure 15c Cross-Sections C-C' to G-G' Along-Gradient Metals in Soil

6.1.1 APEC A – Former on-site rail line, spurs, and sidings

Numerous samples were collected from locations across the Site to assess soil quality for PHCs, VOCs, PAHs, and metals. The identified impacts in soil are delineated both laterally and vertically. Soil results are shown on Figure 11a through Figure 15c.

PHCs impacts extend across a sizable portion of the Site and extend from 178.6 m south of the marine railway enclosure to 174 m on the northwest side of the Site and 173 m on the southeast side of the Site. The lateral distribution of PHCs impacts is shown on Figure 11a. The vertical extent of PHCs impacts is shown on Figure 11b and Figure 11c.

BTEX impacts cover the entire Site and extend to 172.8 m. The lateral distribution of BTEX impacts is shown on Figure 12a. The vertical extent of BTEX impacts is shown on Figure 12b and Figure 12c.

VOCs impacts, excluding BTEX, are localized to a small area on the southwest side of the Site and extend to 175.9 m. The lateral distribution of VOCs impacts is shown on Figure 13a. The vertical extent of VOCs impacts is shown on Figure 13b and Figure 13c.

PAHs impacts extend across a sizable portion of Areas 2, 3 and 4 and extend to 172.7 m on the northwest corner of the Site and 174.5 m along the south side of the Site. The lateral distribution of PAHs impacts is shown on Figure 14a. The vertical extent of PAHs impacts is shown on Figure 14b and Figure 14c.

Metals impacts extend across a sizable portion of the Site and extend to 172.7 m on the northwest corner of the Site and 174.5 m along the south side of the Site. The lateral distribution of metals impacts is shown on Figure 15a. The vertical extent of metals impacts is shown on Figure 15b and Figure 15c.

6.1.2 APEC B – Former on-site coal storage

Numerous samples were collected from locations across Area 2 to assess soil quality for PAHs and metals.

The PAHs and metals impact in soil are delineated both laterally and vertically. Laterally, the PAHs impacts extend across a sizable portion of Areas 2 and extend beyond, both to the east and west. In Area 2, the PAHs impacts extend to 173 m along the north side of the Site and 174.5 m along the south side of the Site. The lateral distribution of PAHs impacts is shown on Figure 14a. The vertical extent of PAHs impacts is shown on Figure 14b and Figure 14c.

The metal impacts extend across the northeast and southwest portions of Area 2 and extend east and west. The lateral distribution of metals impacts is shown on Figure 15a. The vertical extent of metals impacts is shown on Figure 15b and Figure 15c.

6.1.3 APECs C, M, O – Former on-site transformers/PCBs storage

Nineteen soil samples were collected to assess soil quality for PCBs. PCBs were not detected at concentrations greater than the reported detection limit (RDL), which was less than the Table 9 SCS. PCB results are shown on Figure 11.

6.1.4 APEC D – Former on-site gasoline UST

BH18-07 and BH18-17 were advanced within the area of the former gasoline UST to assess soil quality for BTEX, PHCs and metals.

The BTEX, PHCs and metals impacts in soil are delineated laterally and vertically. Laterally, BTEX, PHCs and metals impacts extend beyond APEC D and extend across significant portions of the Site. Within APEC D, PHCs impacts extend to 176 m, and BTEX and metal impacts extend to 173 m.

The lateral distribution of PHCs impacts is shown on Figure 11a. The vertical extent of PHCs impacts is shown on Figure 11b and Figure 11c.

The lateral distribution of BTEX impacts is shown on Figure 12a. The vertical extent of BTEX impacts is shown on Figure 12b and Figure 12c.

The lateral distribution of metals impacts is shown on Figure 15a. The vertical extent of metals impacts is shown on Figure 15b and Figure 15c.

6.1.5 APECs E & F – Former on-site fuel oil USTs

BH18-01, BH18-05, BH18-19, and BH18-21 were advanced within the areas of the former fuel oil USTs to assess soil quality for BTEX, PHCs.

BTEX, PHCs and impacts in soil are delineated laterally and vertically. Laterally, BTEX, PHCs impacts extend beyond APECs E and F. PHCs impacts extend across a sizable portion of the Site and BTEX impacts extend across the entire Site. Vertically, BTEX, PHCs impacts extend to 176 m within APECs E and F.

The lateral distribution of PHCs impacts is shown on Figure 11a. The vertical extent of PHCs impacts is shown on Figure 11b and Figure 11c.

The lateral distribution of BTEX impacts is shown on Figure 12a. The vertical extent of BTEX impacts is shown on Figure 12b and Figure 12c.

6.1.6 APEC G – Former on-site port activities

The Phase One CSM did not identify the potential for soil impacts related to former port activities along the north side of the Site.

6.1.7 APEC H – Former on-site paint shop

BH18-11, BH18-15 and S2 were advanced within the area of the former paint shop to assess soil quality for VOCs and metals. VOCs and metals met the Table 9 SCS in soil samples collected at these sample locations.

6.1.8 APEC I – Former on-site punch/machine shop

TP05, BH18-04, BH103 and BH107 were advanced within the footprint of the former punch/machine shop to assess soil quality for VOCs and metals. VOCs and metals met the Table 9 SCS in soil samples collected at these sample locations.

6.1.9 APEC J – Former on-site furnace shop

TP6 and BH14-04 were advanced within the area of the former furnace shop to assess soil quality for metals. Metals met the Table 9 SCS in soil samples collected at these sample locations.

6.1.10 APEC K – Former boat manufacturing/Current marine repairs to the west

The Phase One CSM did not identify the potential for soil impacts related to historical boat manufacturing or current marine vehicle repair activities immediately west of the Site at 171 Midland Avenue.

6.1.11 APEC L – Former machine shops to the south

The Phase One CSM did not identify the potential for soil impacts related to former machine shops at 174 Manly Street.

6.1.12 APEC N – On-site fill of unknown quality

Numerous samples were collected from locations across the Site to assess soil quality for PHCs, PAHs, and metals and inorganics. PHCs, PAHs, and metals impacts in soil are delineated laterally and vertically.

The PHCs impacts extend across a sizable portion of the Site and extend from 178.6 m south of the marine railway enclosure to 174 m on the north side of the Site and 173 m on the south side of the Site. The lateral distribution of PHCs impacts is shown on Figure 11a. The vertical extent of PHCs impacts is shown on Figure 11b and Figure 11c.

The PAHs impacts extend across a sizable portion of Areas 2, 3 and 4 of the Site and extend to a 172.7 m at the northwest corner of the Site and 174.5 m along the south side of the Site. The lateral distribution of PAHs impacts is shown on Figure 14a. The vertical extent of PAHs impacts is shown on Figure 14b and Figure 14c.

The metals impacts extend across a sizable portion of the Site and extend to 172.7 m on the northwest corner of the Site and 174.5 m along the south side of the Site. The lateral

distribution of metals impacts is shown on Figure 15a. The vertical extent of metals impacts is shown on Figure 15b and Figure 15c.

6.1.13 APEC P – Port activities to the west

The Phase One CSM did not identify the potential for soil impacts related to port activities immediately west of the Site at 171 Midland Avenue.

6.1.14 APEC Q – Fuel storage to the west

The Phase One CSM did not identify the potential for soil impacts related to storage of fuel in fixed tanks (aboveground storage tanks with secondary containment) to the west of the Site at 171 Midland Avenue.

6.1.15 APEC R – Marine railway enclosure

Numerous samples were collected from the west side of Area 3 to assess soil quality for BTEX, PHCs, and metals. The BTEX, PHC, and metals impacts in soil are delineated laterally and vertically.

Four soil samples were submitted for analysis of PHCs to assess soil quality within APEC R. All samples met the Table 9 SCS.

Seven soil samples were submitted for analysis of BTEX to assess soil quality within APEC R. The concentrations of BTEX in two surface soil samples exceeded the Table 9 SCS. BTEX impacts extend across the entire Site. Vertically, BTEX impacts extend to 174.1 m within APEC R. The lateral distribution of BTEX impacts is shown on Figure 12a. The vertical extent of BTEX impacts is shown on Figure 12b and Figure 12c.

Eleven soil samples were submitted for analysis of metals to assess soil quality within APEC R. Metals concentrations in four soil samples exceeded the Table 9 SCS. The metal impacts cover APEC R and extend east and west to include a substantial portion of the Site. Vertically, metals impacts extend to within APEC R. The lateral distribution of metals impacts is shown on Figure 15a. The vertical extent of metals impacts is shown on Figure 15b and Figure 15c.

6.1.16 APEC S – Former on-site oil house

BH18-06 was advanced within the footprint of the former oil house to assess soil quality for BTEX, PHCs and metals. Two soil samples were submitted for analysis of BTEX, PHCs and one soil sample was submitted for analysis of metals to assess soil quality within APEC S.

BTEX, PHCs impacts extend across APEC S and to the east and west to include a sizable portion of the Site. Vertically, BTEX, PHCs impacts extend to 176.4 m within APEC S. The lateral distribution of PHCs impacts is shown on Figure 11a. The vertical extent of PHCs impacts is shown on Figure 11b and Figure 11c. The lateral distribution of BTEX impacts is shown on Figure 12a. The vertical extent of BTEX impacts is shown on Figure 12b and Figure 12c.

Metals impacts extend across APEC S and to the east and west to include a sizable portion of the Site. Vertically, metals impacts extend to 177.5 m within APEC S. The lateral distribution of metals impacts is shown on Figure 15a. The vertical extent of metals impacts is shown on Figure 15b and Figure 15c.

6.2 Groundwater Quality

Groundwater analysis results are discussed by APEC. All groundwater samples analyzed for PAHs and metals met the Table 7 SCS and are not discussed in further detail. Samples analyzed for PAHs and metals were collected at locations and depths considered appropriate to assess the APECs. Analysis results are shown on the figures listed below.

Figure 16a Groundwater Results – PHCs
Figure 16b Cross-Sections A-A’ and B-B’ Cross-Gradient PHCs in Groundwater
Figure 16c Cross-Sections C-C’ and D-D’ Along-Gradient PHCs in Groundwater
Figure 17a Groundwater Results – BTEX
Figure 17b Cross-Sections A-A’ and B-B’ Cross-Gradient BTEX in Groundwater
Figure 17c Cross-Sections C-C’ and D-D’ Along-Gradient BTEX in Groundwater
Figure 18a Groundwater Results – VOCs
Figure 18b Cross-Sections A-A’ and B-B’ Cross-Gradient VOCs in Groundwater
Figure 18c Cross-Sections C-C’ and D-D’ Along-Gradient VOCs in Groundwater

Figure 19 Groundwater Results – PAHs
Figure 20 Groundwater Results – Metals
Figure 21 Groundwater Results – PCBs

6.2.1 APEC A – Former on-site rail line, spurs, and sidings

Numerous samples were collected from locations across the Site to assess groundwater quality for PHCs, VOCs, PAHs, and metals.

The PHCs and VOCs impacts in groundwater are delineated laterally and vertically within APEC A.

The PHCs impacts in groundwater are localized along the west side of the Site, extending laterally to the west property boundary and vertically to 170.6 m. The distribution of PHCs impacts are shown on cross-sections and in plan view on Figure 16. The location of the PHCs impacts suggests they are more likely related to the historical presence of fuel storage USTs (APECs D, E, and F).

The VOCs impacts in groundwater are localized within Area 1 and extend to 172.3 m. The lateral distribution of PHCs impacts is shown on Figure 16a. The vertical extent of PHCs impacts is shown on Figure 16b and Figure 16c. The location of the VOCs impacts suggests they are more likely related to the historical Paint Shed (APEC H).

6.2.2 APEC B – Former on-site coal storage

The Phase One CSM did not identify the potential for groundwater impacts related to former on-site coal storage. While PAHs and metals impact potentially related to coal storage were present in soil within APEC B, groundwater samples from wells within APEC B met the Table 7 SCS for PAHs and metals.

6.2.3 APECs C, M, O – Former on-site transformers/PCBs storage

The Phase One CSM did not identify the potential for groundwater impacts related to former on-site transformers or PCBs storage. This opinion is validated by the absence of PCBs

impacts at all soil sample locations within these APECs and by groundwater PCBs results at three sample locations. PCBs results are shown on Figure 21.

6.2.4 APEC D – Former on-site gasoline UST

BH18-07 and BH18-17 were advanced within the area of the former gasoline UST to assess groundwater quality for BTEX, PHCs, and metals.

PHC and benzene concentrations exceeded the Table 7 SCS.

Laterally, PHCs extend beyond APEC D. Vertically, PHC impacts extend to 172 m. The lateral distribution of PHCs impacts is shown on Figure 16a. The vertical extent of PHC impacts is shown on Figure 16b.

Laterally, benzene impacts extend beyond APEC D. Benzene impacts extend to a depth of at least 170 m. The lateral distribution of benzene impacts is shown on Figure 17a. The vertical extent of benzene impacts is shown on Figure 17b.

Repeated sampling at BH18-17 (deep well) has indicated that concentrations decrease with each sampling event. It is the QP's opinion that this indicates the low-level benzene exceedances may be related to carry down during the drilling and well installation. Regardless, it is the QP's intent to install a deeper well to vertically delineate the impacts. This additional investigation will be completed after receipt of Ministry comments on the Phase Two CSM so that if additional investigation is required in other areas it can be combined into a single mobilization.

6.2.5 APECs E & F – Former on-site fuel oil USTs

BH18-01, BH18-05, and BH18-19 were advanced within the areas of the former fuel oil USTs to assess groundwater quality for BTEX and PHCs.

PHC concentrations met the Table 7 SCS within APEC E. BTEX/PHC concentrations met the Table 7 SCS within APEC F.

Benzene concentrations exceeded the Table 7 SCS within APEC E. Laterally, the benzene impacts extend from the west property boundary to the beyond APEC E. Vertically, the

benzene impacts extend to at least 170 m within APEC E. The lateral distribution of benzene impacts is shown on Figure 17a. The vertical extent of benzene impacts is shown on Figure 17b.

Repeated sampling at BH18-19 (deep well) has indicated that overall concentrations decrease with each sampling event, but with some variability. It is the QP's opinion that this indicates the low-level benzene exceedances are related to carry down during the drilling and well installation. Regardless, it is the QP's intent to install a deeper well to vertically delineate the impacts. This additional investigation will be completed after receipt of Ministry comments on the Phase Two CSM so that if additional investigation is required in other areas it can be combined into a single mobilization.

6.2.6 APEC G – Former on-site port activities

The Phase One CSM did not identify the potential for groundwater impacts related to the former on-site port activities.

6.2.7 APEC H – Former on-site paint shop

BH18-11 and BH18-15 were advanced within the area of the former paint shop to assess groundwater quality for VOCs and metals.

VOC impacts in groundwater are localized to the area of the former on-site paint shop and extend vertically to 172.3 m. The lateral distribution of benzene impacts is shown on Figure 18a. The vertical extent of benzene impacts is shown on Figure 18b.

6.2.8 APEC I – Former on-site punch/machine shop

BH103 and BH107 were advanced within the area of the former punch/machine shop to assess groundwater quality for VOCs and metals.

VOC and metals concentrations met the Table 7 SCS within APEC I.

6.2.9 APEC J – Former on-site furnace shop

The Phase One CSM did not identify the potential for groundwater impacts related to the former on-site furnace shop.

6.2.10 APEC K – Former boat manufacturing/Current marine repairs to the west

BH18-01, BH18-19, and BH102 were advanced within APEC K to assess groundwater quality for BTEX, PHCs, VOCs, and metals.

PHCs and VOCs met the Table 7 SCS within APEC K. Benzene exceeded the Table 7 SCS within APEC K during one of two sampling events.

Laterally, benzene impacts extend from the west property boundary to beyond APEC K. Vertically, benzene impacts extend to a depth of 170 m within APEC K. The lateral distribution of benzene impacts is shown on Figure 18a. The vertical extent of benzene impacts is shown on Figure 18b.

6.2.11 APEC L – Former machine shops to the south

BH101 and BH18-05 were advanced along the south side of the Site to assess groundwater quality for PHCs, VOCs, and metals.

PHCs and VOCs met the Table 7 SCS within APEC L.

6.2.12 APEC N – On-site fill of unknown quality

Various sample locations across the Site were assessed for COCs indicative of impacts related to fill materials (e.g., PHCs, PAHs, and metals). PAHs and metals met the Table 7 SCS at all locations. While PHCs exceeded the Table 7 SCS at locations along the west side of the Site, it is considered likely that these impacts are related to the historical presence of fuel storage tanks on the Site. Further, while metals and PAHs were present in soil at concentrations exceeding the applicable SCS across the Site, neither exceeded the Table 7 SCS in groundwater indicating that soil leaching to groundwater is not a pathway of concern.

6.2.13 APEC P – Port activities to the west

The Phase One CSM did not identify the potential for groundwater impacts related to the port activities to the west.

6.2.14 APEC Q – Fuel storage to the west

BH18-01, BH18-19, and BH102 were advanced along the west side of the Site to assess groundwater quality for BTEX, PHCs, and metals.

While benzene and PHCs were present in groundwater at concentrations exceeding the Table 7 SCS along the west side of the Site, these impacts are more likely related to the former on-site storage of fuels in USTs rather than storage in ASTs with secondary containment on the adjacent property.

6.2.15 APEC R – Marine railway enclosure

BH113 and BH114 were advanced along the west side of Area 3 to assess groundwater quality for BTEX, PHCs and metals.

BTEX and PHC concentrations met the Table 7 SCS within APEC S. PHC and BTEX results are shown on Figure 16a and Figure 17a, respectively.

6.2.16 APEC S – Former on-site oil house

BH18-06 was advanced within the area of the former oil house to assess groundwater quality for BTEX, PHCs, and metals.

BTEX and PHC concentrations met the Table 7 SCS within APEC S. PHC and BTEX results are shown on Figure 16a and Figure 17a, respectively.

6.3 Sediment

Stantec conducted a sediment and benthic invertebrate sampling program along the south shore of Midland Bay adjacent to the Site. The program was designed to characterize the benthic invertebrate community and use the data to characterize sediment quality. Benthic

macroinvertebrate samples were collected along four transects oriented perpendicular to the shoreline.

T1 – at the marine railway enclosure

T2 – 360 m east of the marine railway enclosure, near a breakwater structure

T3 – 240 m east of the breakwater, near the Midland Bay Landing Park water access (Area 4)

TR – reference transect 275 m east of the park

Benthic sample collection was attempted 10 m from shore, 20 m from shore and 30 m from shore along each transect. Transects TR, T3 and T1, had very coarse substrates in the nearshore area, preventing the collection of benthic samples at 10 m from shore.

Stantec concluded the benthic communities along the Midland Bay shoreline were indicative of long-term impacts from a variety of sources, including nearby, historical industrial practices and invasive aquatic species. An analysis of the benthic community data suggested that water quality for all stations was impaired and there was evidence of eutrophication. With respect to benthic community:

- Transect T1 had the greatest diversity and the highest proportion and number of pollution-sensitive taxa, suggesting it was the least impacted transect in the survey. The benthic communities at transect T1 and the reference transect were similar. The data indicated there was of evidence of pollution stress at transect T1 and the reference transect.
- Transect T2 had the highest total organic carbon (TOC) and coarsest substrate primarily because of the coal within the sediment. This station also had the fewest pollution sensitive organisms and was dominated by the most pollution-tolerant taxa.

The invasive Zebra and Quagga mussels were present in appreciable numbers at all transects, and were the predominant organisms at transect T3.Parameters that exceeded the sediment standards are shown on Figure 6 in Appendix A.

Sediment samples were collected at nine locations to assess sediment quality for BTEX, PHCs, PAHs, and metals. Numerous PAHs were present in sediment at concentrations greater

than the O.Reg. 153/04 sediment standards. Parameters that exceeded the sediment standards are shown on Figure 6 in Appendix A.

6.4 Surface Water

Surface water was potentially impacted by port activities west of the Site at 171 Midland Avenue (APEC P) and former on-site port activities (APEC T). Stantec completed an assessment of surface water.

Samples were collected from three near shore locations to assess surface water quality for BTEX, PHCs, PAHs, and metals. Concentrations of copper (in a duplicate sample only) and zinc exceeded the PWQO in two near shore surface water samples, TS3-1 and TS1-1, respectively. Zinc was not detected in a second sample collected at TS1-1 and copper was not detected in the parent sample at TS3-1. Contaminant concentrations exceeding the Provincial Water Quality Objectives (PWQO) are shown on Figure 7 in Appendix A.

7.0 Human Health and Ecological CSM

Based on the site characterization, contaminants of concern exceeding the applicable Table 9 and 7 SCS were identified in soil and groundwater, respectively. There are multiple sources identified for both the soil and groundwater impacts.

Based on a review of site characteristics (e.g., soil profile, depth to groundwater, contaminant type and distribution, etc.), Cambium identified potential exposure pathways and receptors for human health and ecological receptors. These exposure pathways and receptors are discussed in the following sections.

7.1 Human Health Exposure Model

The human health CSM describes the potential exposure pathways that are likely to be present for various human receptors at the Site. The human health CSM provides a basis for examining potential health risks in a human health risk assessment. The human health CSM, without and with risk management measures (RMMs), are presented as Figure 21a and Figure 21b, respectively, and discussed below.

In the absence of RMM, the following exposure pathways are considered applicable for one or more of the current and future on-site receptors:

- Direct contact with soil or groundwater;
- Incidental ingestion of soil or groundwater;
- Inhalation of soil particulate;
- Inhalation of volatiles from groundwater in outdoor air; and
- Inhalation of volatiles from groundwater in indoor air (future use only).

Based on the future commercial/residential/parkland land use for the Site, possible receptors at the Site are:

- Resident (all age groups)
- Site visitor/trespasser (all age groups)
- Adult indoor worker (long-term adult/teen employee)
- Adult outdoor worker (long-term adult/teen employee)
- Subsurface worker (adult/teen construction worker)
- Maintenance worker (short-term adult/teen)

7.2 Ecological Exposure Model

The ecological CSM describes the potential exposure pathways that are likely to be present for various ecological receptors at the Site. The ecological CSM provides a basis for examining potential risks in an ecological risk assessment. The ecological CSM, without and with RMMs, are presented as Figure 22a and Figure 22b, respectively, and discussed below.

Ecological receptors at the Site are assumed to have direct contact with surface soil, sediment, shallow groundwater, or surface water. In the absence of RMM, the following exposure pathways are considered applicable for one or more of the potential on-site ecological receptors:

- Direct contact with soil, sediment, groundwater, or surface water
- Uptake of groundwater
- Ingestion of soil, sediment, or surface water
- Ingestion of impacted food

Based on the current and future commercial/residential/parkland land use for the Site, possible ecological receptors at the Site are:

- Terrestrial soil invertebrates and plants
- Birds, mammals, and reptiles
- Aquatic receptors within Midland Bay

P:\6800 to 6899\6820-001 Midland Bay Landing\Deliverables\Phase Two ESA\Draft\2019-03-18 Phase Two CSM.docx

8.0 References

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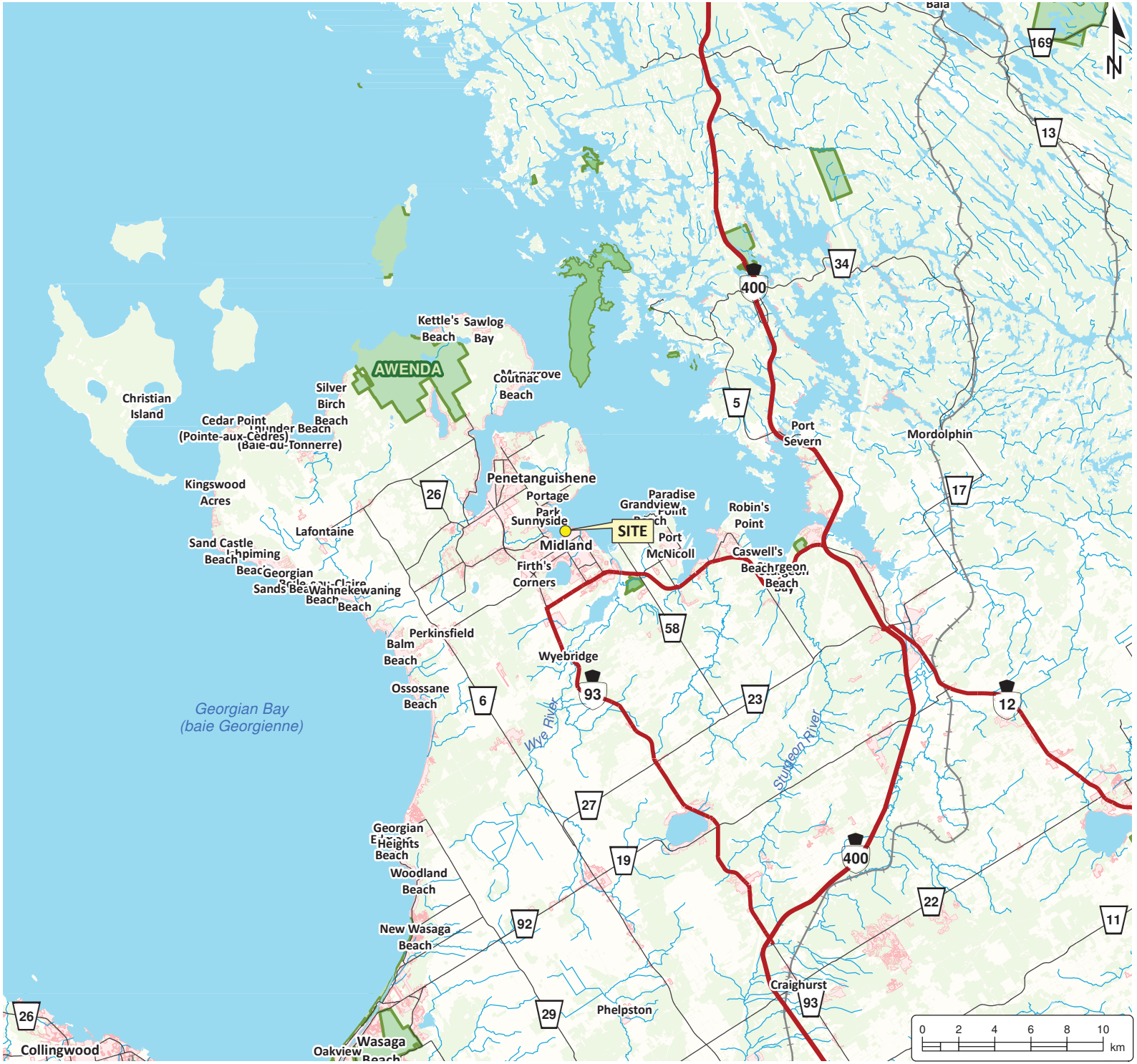
Figures



PHASE TWO ENVIRONMENTAL SITE ASSESSMENT MIDLAND BAY LANDING

CORPORATION OF THE TOWN OF MIDLAND

420 Bayshore Drive, Midland, Ontario

LEGEND

- Highway
- Major Road
- Railroad
- Watercourse
- Water Area
- Provincial Park
- Federal Protected Area
- Built-Up Area
- Wooded Area

Notes:

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- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
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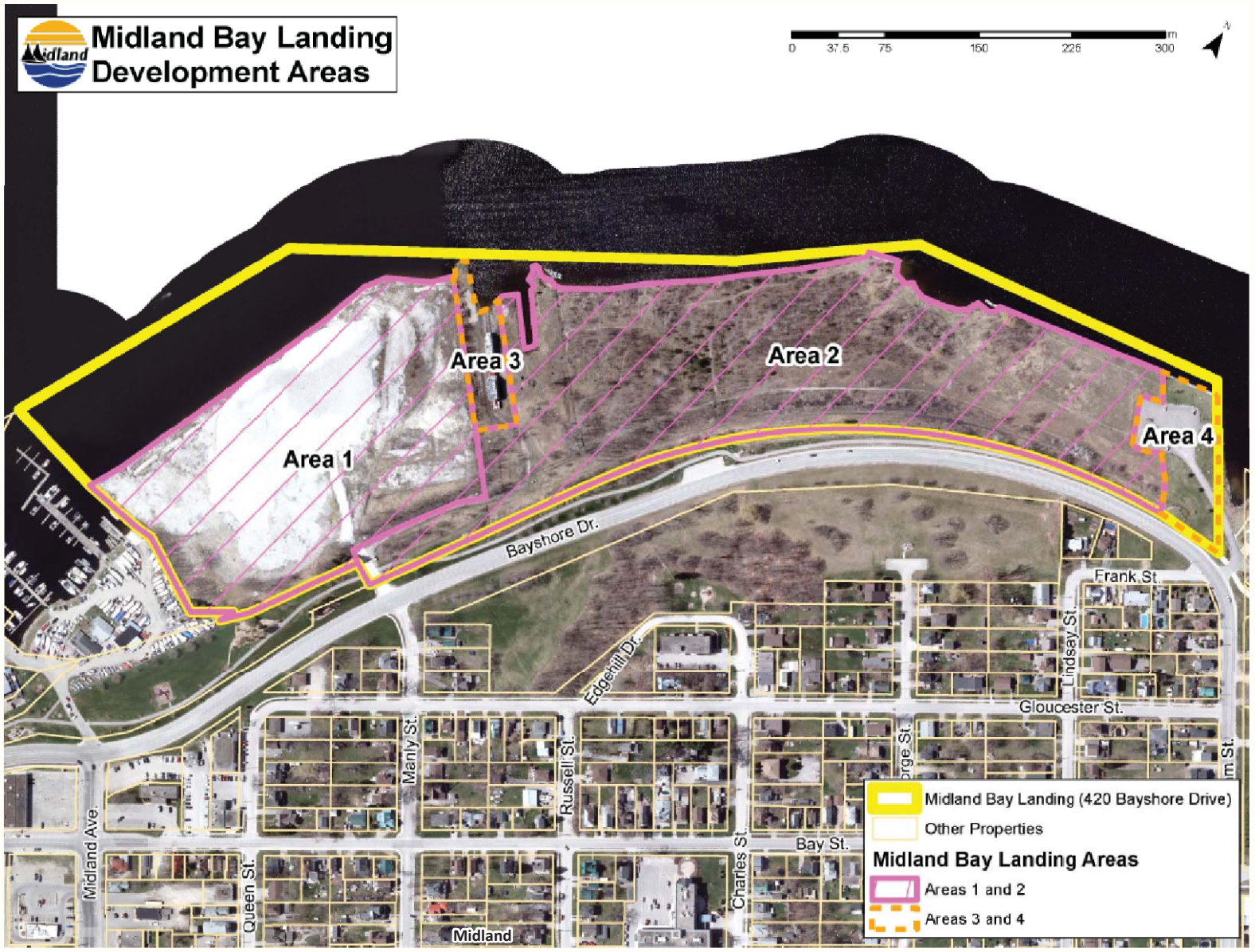
SITE LOCATION PLAN

Project No.:	6820-001	Date: / Rev.:	March 2019
Scale:	1:300,000	Projection:	NAD 1983 UTM Zone 17N
Created by:	TLC	Checked by:	NJY
Figure:	1		

O:\GIS\project_MXDs\6800-6899\6820-001 Midland Bay Landing\2019-02-05 P2 Fig 1 - Site Location Plan.mxd

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario



LEGEND

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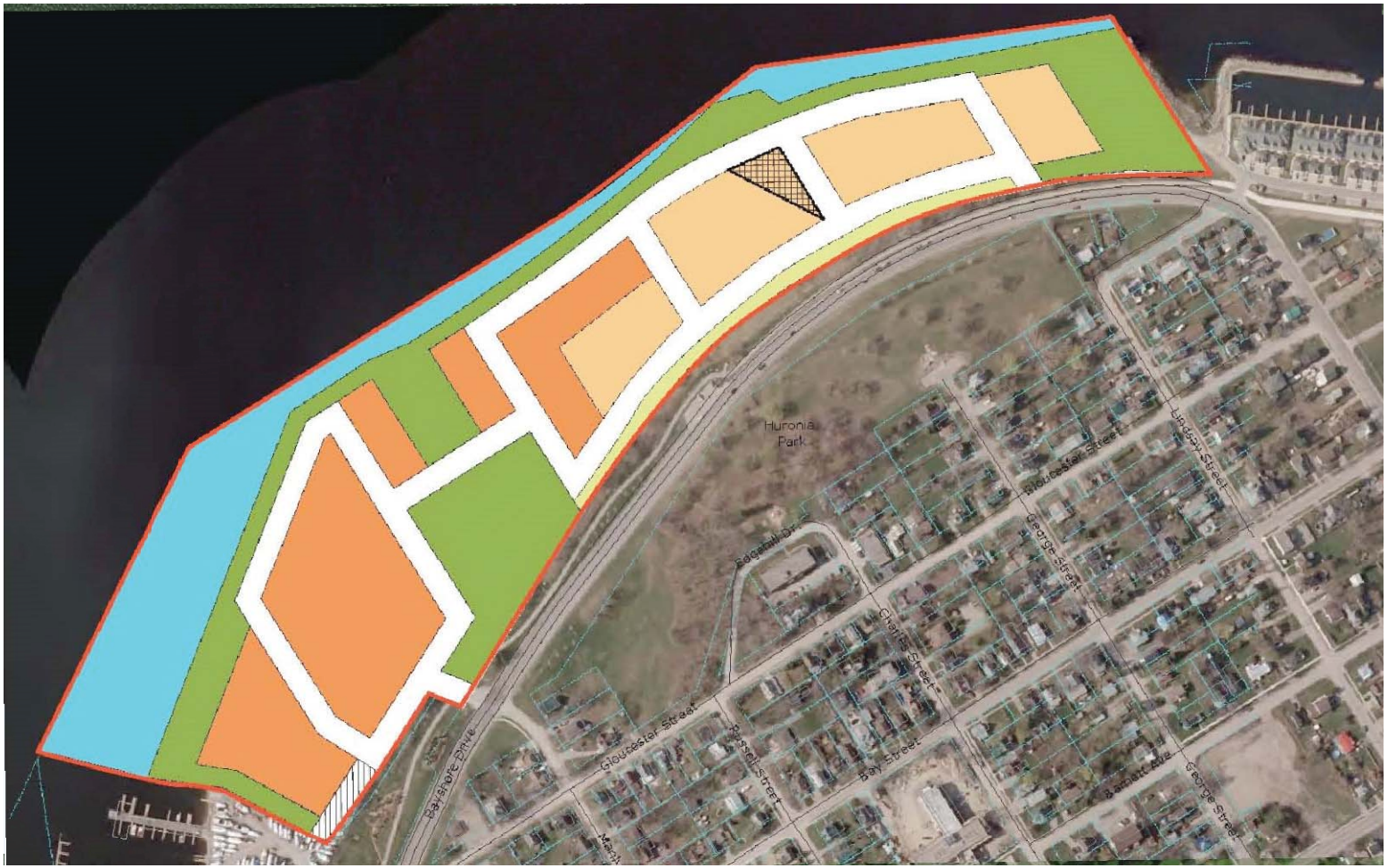
HISTORICAL AND CURRENT LAND USE PLAN

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Scale:	N/A	Projection:	N/A
Created by: TLC	Checked by: NJY	Figure:	2

O:\GIS\project_MXDs\6800-6899\6820-001 Midland Bay Landing\2019-02-05 P2 Fig 2 - Historical and Current Land Use Plan.mxd

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING

CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario



N

0 50 100 150 200 m

LEGEND

Land Use Framework Plan

- Unimin Boundaries
- Street Right-of-Way
- Potential Street Right-of-Way
- Water Lot
- Park
- Open Space
- Waterfront Mixed-Use 1
- Waterfront Mixed-Use 2
- Potential Park

Notes:
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CONCEPTUAL FUTURE LAND USE PLAN

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Scale:	1:5,000	Projection:	NAD 1983 UTM Zone 17N
Created by:	TLC	Checked by:	NJY
Figure:	3		

O:\GIS\project_MXDs\6800-6899\6820-001 Midland Bay Landing\2019-02-05 P2 Fig 3 - Conceptual Future Land Use Plan.mxd

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT MIDLAND BAY LANDING

CORPORATION OF THE TOWN OF MIDLAND

420 Bayshore Drive, Midland, Ontario

LEGEND

- 11 — Potentially Contaminating Activity
- Contour 5m Interval
- Study Area
- Present Day Subject Property (approx.)
- Inferred Groundwater Flow Direction

LAND USE

Notes:
- Subject Property (approx.) was obtained from Dearden and Stanton Ltd. Dwg. No.: E-2429.
- Base mapping features are © Queen's Printer of Ontario, 2017 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).
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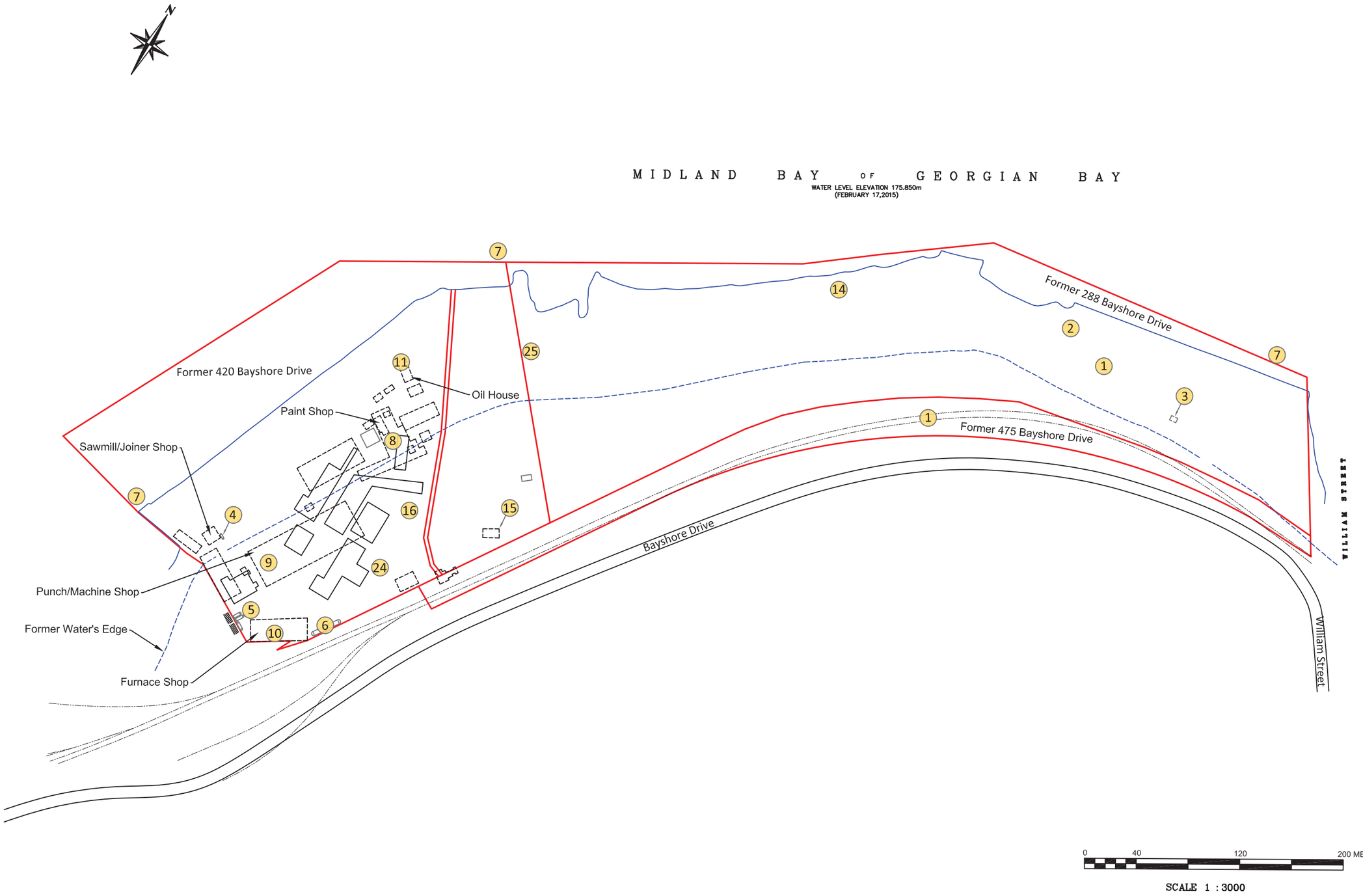
CONCEPTUAL SITE MODEL PHASE ONE STUDY AREA

Project No.: 6820-001		Date: March 2019	
		Rev.:	
Scale: 1:5,000		Projection: NAD 1983 UTM Zone 17N	
Created by: TLC	Checked by: NJY	Figure:	4

O:\GIS\project_MXDs\6800-6899\6820-001 Midland Bay Landing\2019-02-05 P2 Fig 4 - Conceptual Site Model – Phase One Study Area.mxd

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario



LEGEND

- WATER'S EDGE (Feb. 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- ABOVE GROUND STORAGE TANK
- (1) POTENTIALLY CONTAMINATING ACTIVITY

BUILDING FOOTPRINTS

- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

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CONCEPTUAL SITE MODEL
PHASE ONE PROPERTY

Project No.: 6820-001		Date: March 2019	
		Rev.:	
Horizontal Scale: 1:3,000		Vertical Scale: N/A	
Drawn By: TLC	Checked By: NJY	Figure: 5	

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PHASE TWO ENVIRONMENTAL SITE ASSESSMENT MIDLAND BAY LANDING

CORPORATION OF THE TOWN OF MIDLAND

420 Bayshore Drive, Midland, Ontario

LEGEND

- Contour 5m Interval
- Study Area
- Present Day Subject Property (approx.)

Areas of Potential Environmental Concern:

- APEC A
- APEC B
- APEC C
- APEC D
- APEC E
- APEC F
- APEC G
- APEC H
- APEC I
- APEC J
- APEC K
- APEC L
- APEC M
- APEC N
- APEC O
- APEC P
- APEC Q
- APEC R
- APEC S

Notes:
- Subject Property (approx.) was obtained from Dearden and Stanton Ltd. Dwg. No.: E-2429.
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CONCEPTUAL SITE MODEL AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

Project No.: 6820-001		Date: March 2019	
		Rev.:	
Scale: 1:5,000		Projection: NAD 1983 UTM Zone 17N	
Created by: TLC	Checked by: NJY	Figure:	6

O:\GIS\project_MXDs\6800-6899\6820-001 Midland Bay Landing\2019-02-05 P2 Fig 6 - Conceptual Site Model – Areas of Potential Environmental Concern.mxd

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
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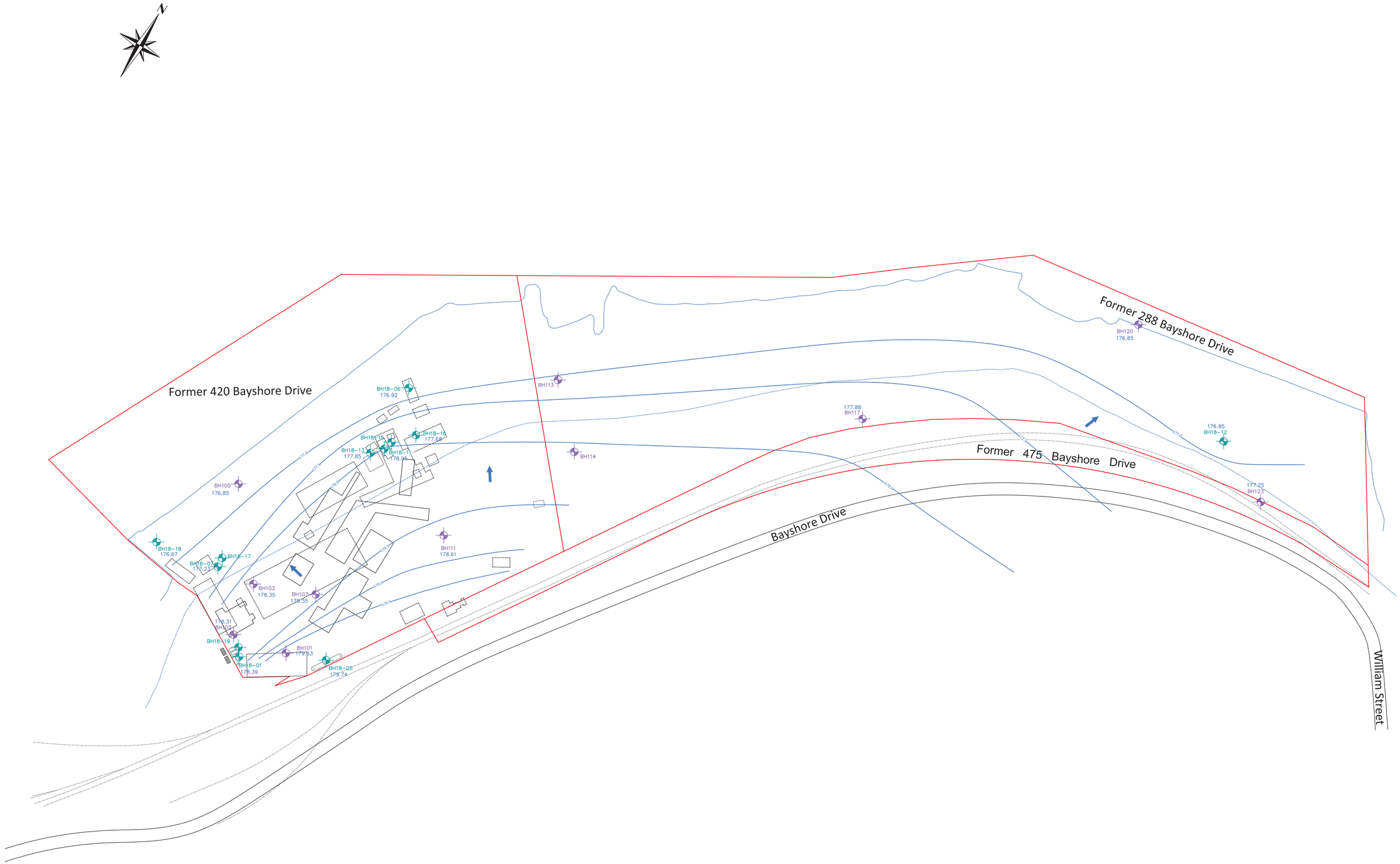
420 Bayshore Drive, Midland, Ontario



LEGEND

- 176.87 SHALLOW GROUNDWATER ELEVATION (February 15, 2019)
- SHALLOW GROUNDWATER CONTOUR (February 15, 2019)
- SHALLOW GROUNDWATER FLOW DIRECTION (February 15, 2019)
- WATER'S EDGE (Feb. 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PINCHIN LTD.
- MONITORING WELL

CAMBIUM
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BUILDING FOOTPRINTS
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GROUNDWATER ELEVATIONS SHALLOW WELLS - February 15, 2019

Project No.: 6820-001		Date: March 2019	
		Rev.:	
Horizontal Scale: 1:1,250		Vertical Scale: N/A	
Drawn By: TLC	Checked By: NJY	Figure: 7	

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PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
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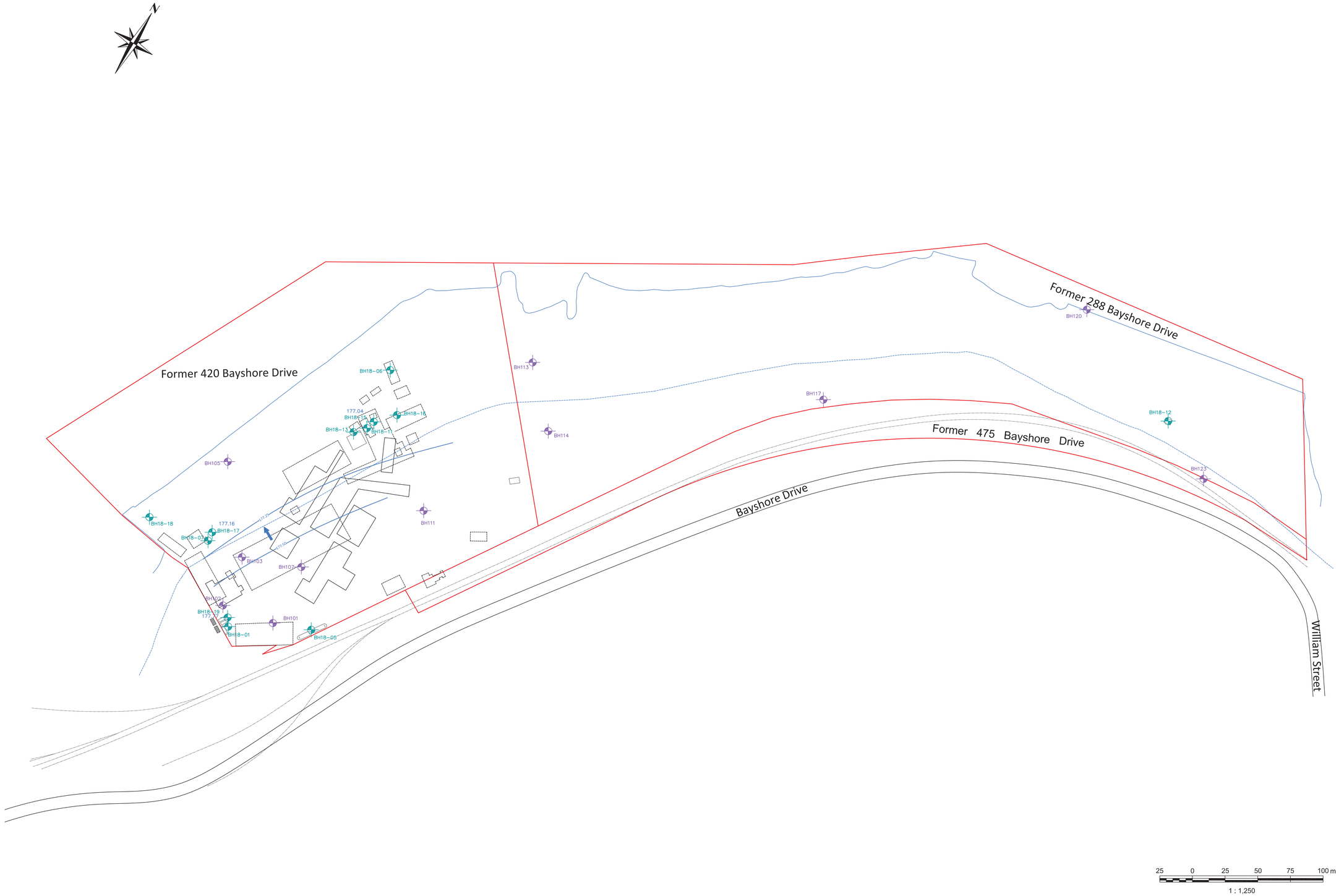

LEGEND

- 176.87 DEEP GROUNDWATER ELEVATION (February 15, 2019)
- DEEP GROUNDWATER CONTOUR (February 15, 2019)
- DEEP GROUNDWATER FLOW DIRECTION (February 15, 2019)
- WATER'S EDGE (Feb. 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

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GROUNDWATER ELEVATIONS DEEP WELLS - February 15, 2019

Project No.: 6820-001		Date: March 2019	
		Rev.:	
Horizontal Scale: 1:1,250		Vertical Scale: N/A	
Drawn By: TLC	Checked By: NJY	Figure: 8	

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

MIDLAND BAY OF GEORGIAN BAY

Former 420 Bayshore Drive

Former 288 Bayshore Drive

Former 475 Bayshore Drive

Bayshore Drive

William Street

A A' B B' C C' D D' E E' F F' G G'

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PETO MacCALLUM LTD.
- MONITORING WELL
- BOREHOLE
- SAMPLE (CRUSHED ROCK FOR CHEMICAL TESTING)

PINCHIN LTD.
- MONITORING WELL
- BOREHOLE
- TEST PIT

STANTEC
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE

CAMBIUM
- MONITORING WELL
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE
- MOUND

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

A — CROSS SECTION VIEWING DIRECTION
A — CROSS SECTION ID

25 0 25 50 75 100 m

1 : 1,250

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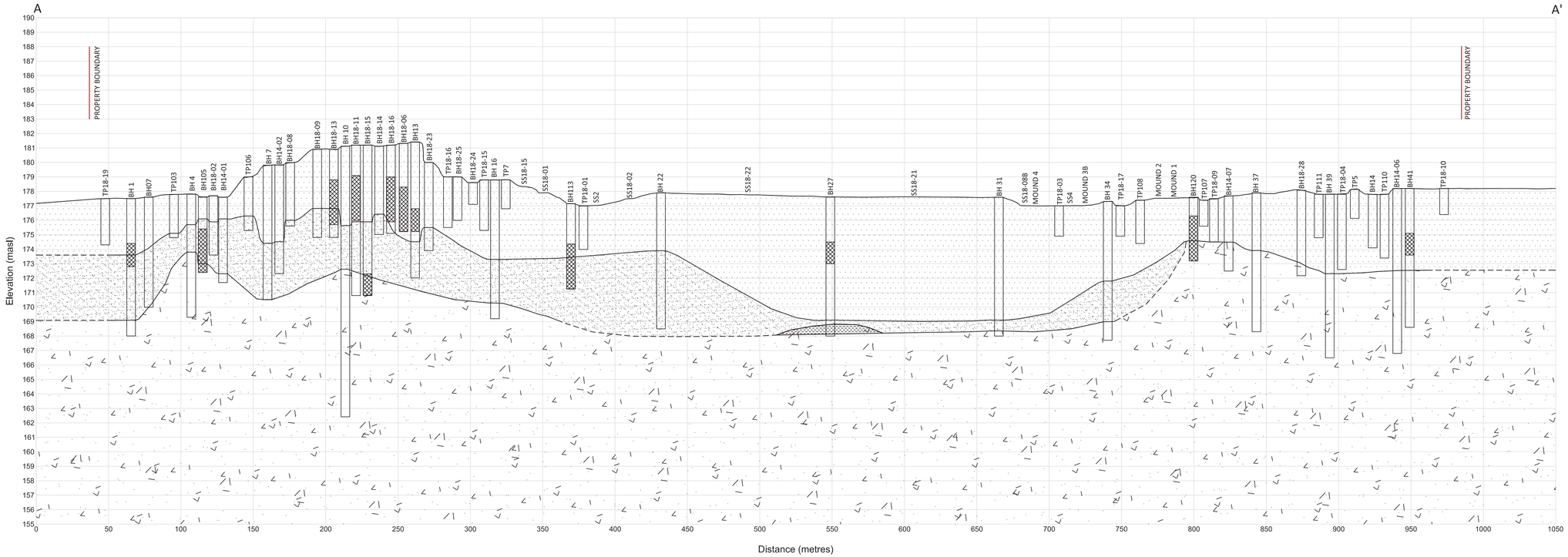
CROSS - SECTION LOCATIONS

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By: TLC	Checked By: NJY	Figure:	9

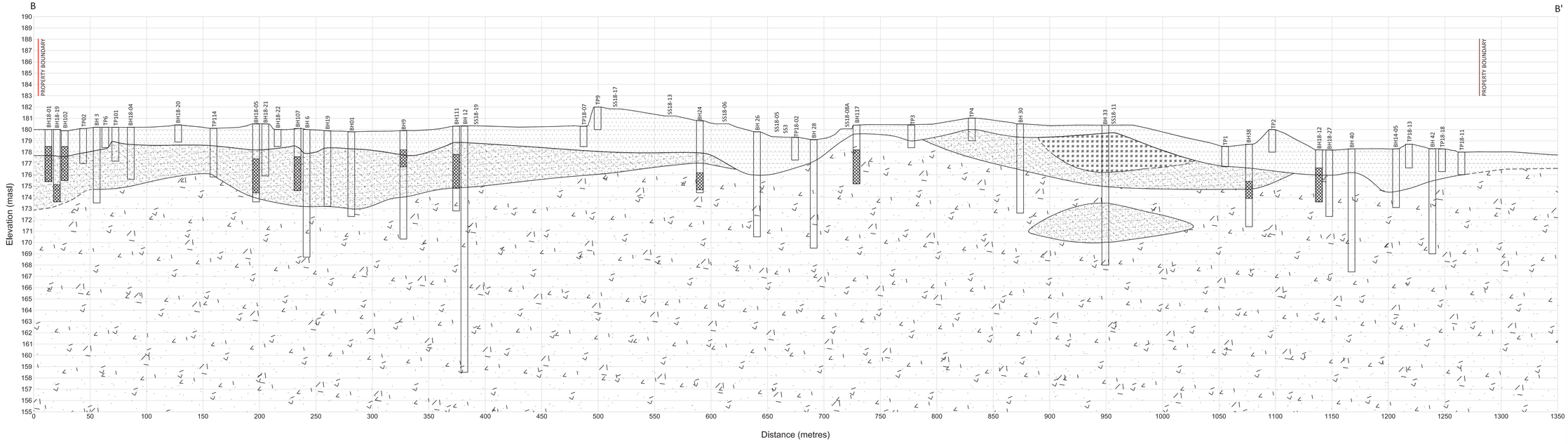
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

Cross - Section A-A'



Horizontal Scale = 1:1,500
Vertical Scale = 1:150

Cross - Section B-B'



Horizontal Scale = 1:1,750
Vertical Scale = 1:175

LEGEND

- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Well Screen

NOTE:
SS AND MOUND LABELS DENOTE SURFACE SOIL SAMPLE LOCATIONS.

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CROSS - SECTIONS A-A' AND B-B' PARALLEL TO GROUNDWATER FLOW

Project No.: 6820-001		Date: March 2019	
		Rev.:	
Horizontal Scale: As Shown		Vertical Scale: As Shown	
Drawn By: TLC	Checked By: NJY	Figure: 10a	

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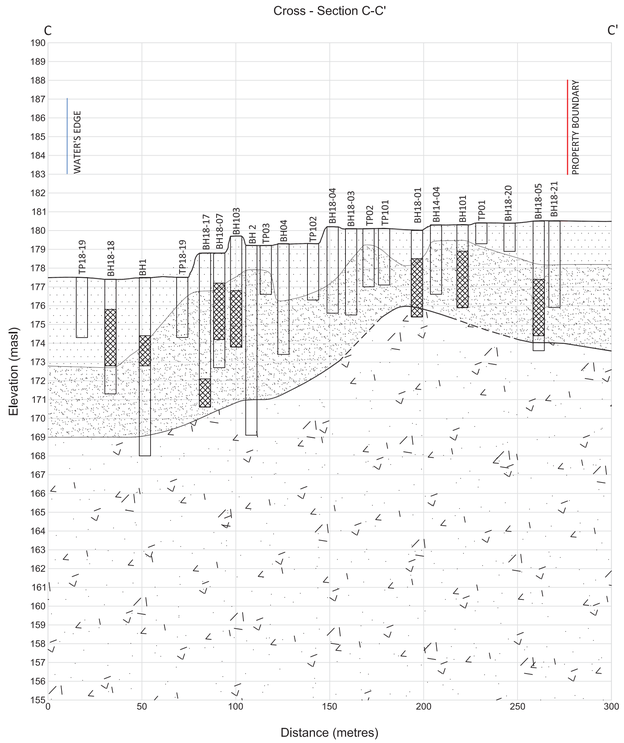

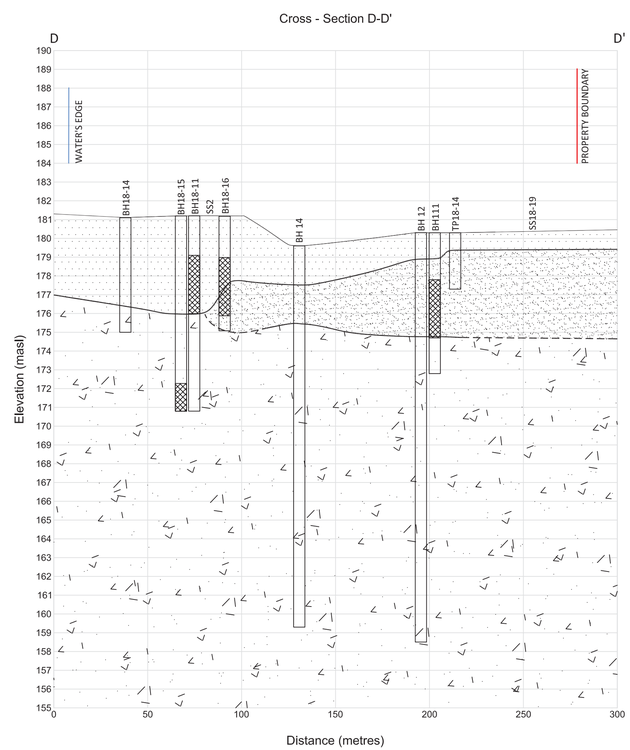

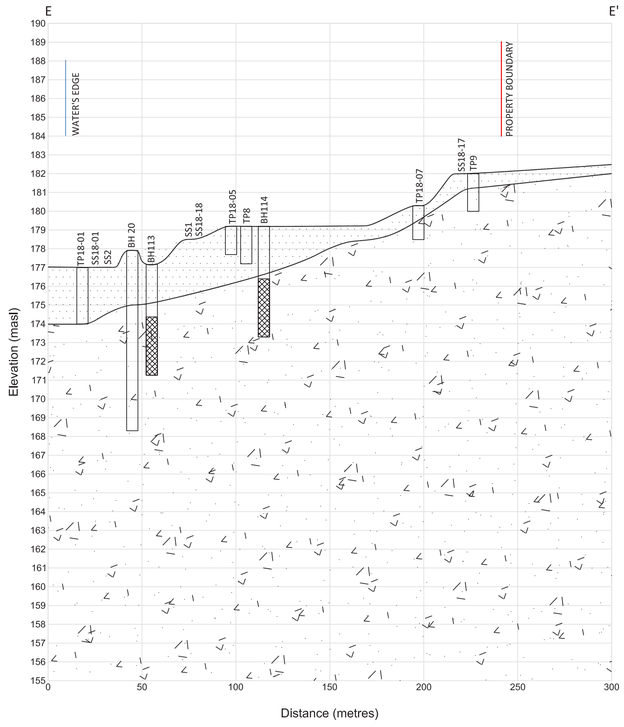

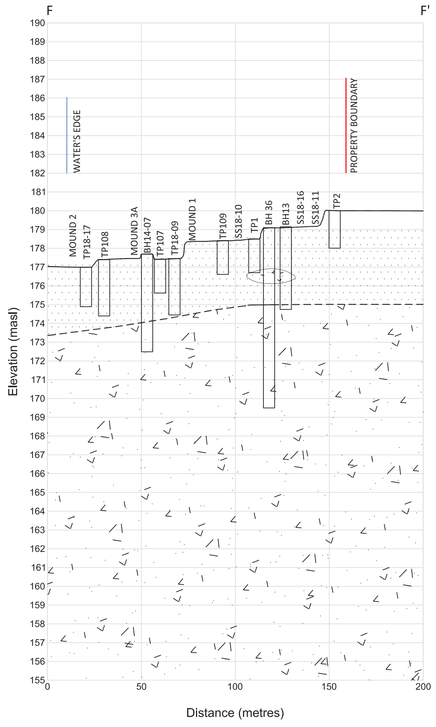

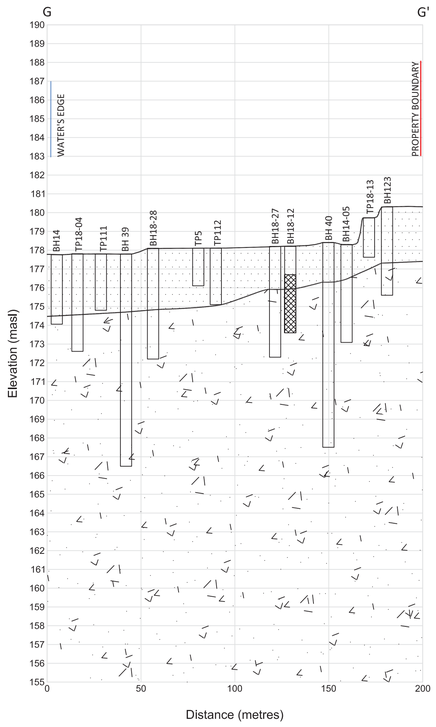

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING

CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Well Screen

NOTE:
SS AND MOUND LABELS DENOTE SURFACE SOIL SAMPLE LOCATIONS.

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Tel: (705) 742.7900 Fax: (705) 742.7907
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CROSS - SECTIONS C-C' TO G-G" PERPENDICULAR TO GROUNDWATER FLOW

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,500	Vertical Scale:	1:150
Drawn By:	TLC	Checked By:	NJY
Figure:	10b		

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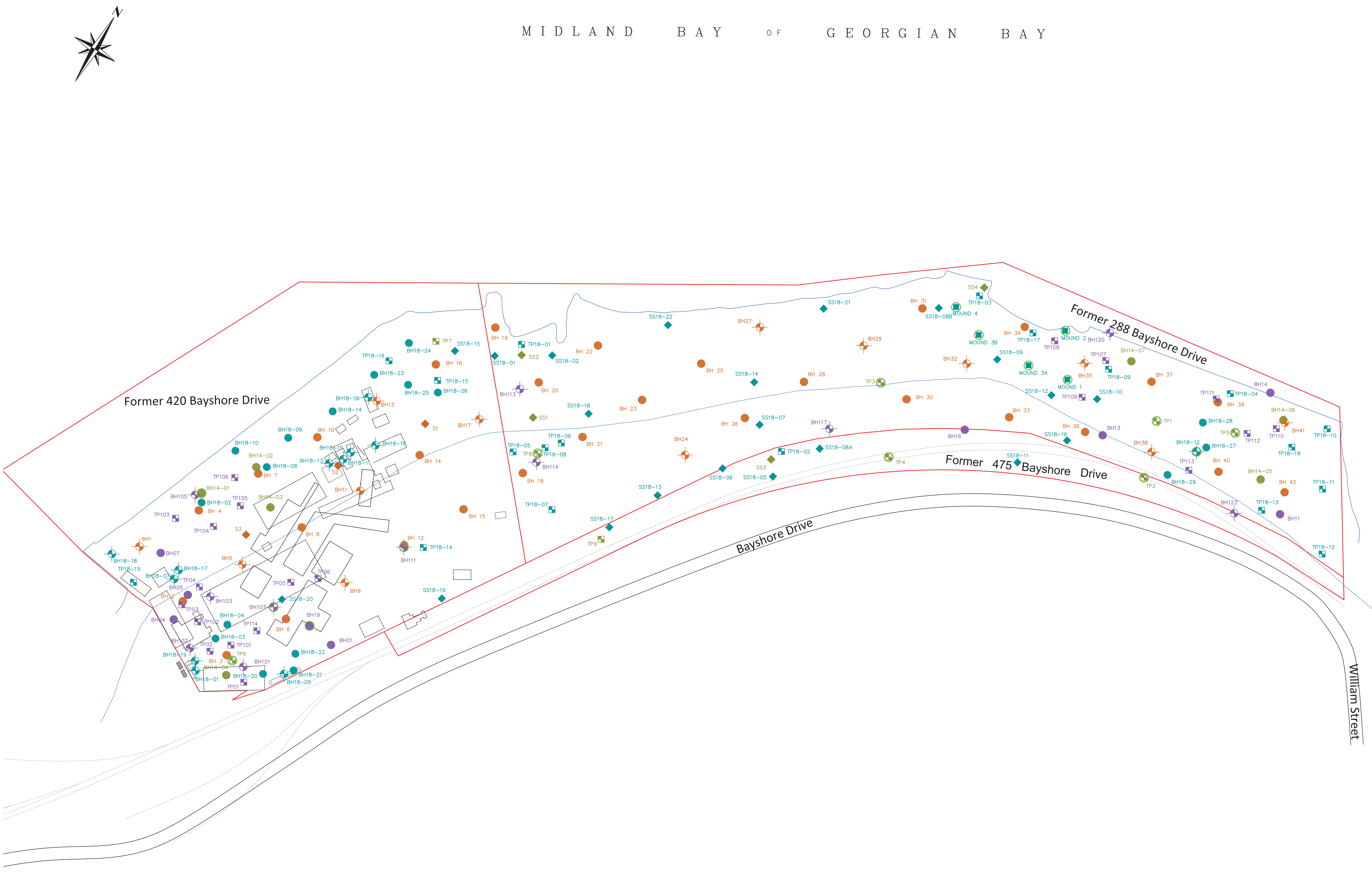

25 0 25 50 75 100 m

1 : 1,250

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT MIDLAND BAY LANDING

CORPORATION OF THE TOWN OF MIDLAND

420 Bayshore Drive, Midland, Ontario

LEGEND

- WATER'S EDGE (Feb. 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PETO MacCALLUM LTD.
- MONITORING WELL
- BOREHOLE
- SAMPLE (CRUSHED ROCK FOR CHEMICAL TESTING)

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- BOREHOLE
- TEST PIT

STANTEC
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE

CAMBIUM
- MONITORING WELL
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE
- MOUND

- PARAMETERS TESTED MEET TABLE 9 SCS
- PARAMETERS TESTED EXCEED TABLE 9 SCS
- EXTENT OF IMPACT

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

Table 9 SCS	
F1-BTEX	25
F2	10
F3	240
F4	120

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

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SOIL RESULTS - PCBs

Project No.: 6820-001	Date: March 2019
	Rev.:
Horizontal Scale: 1:1,250	Vertical Scale: N/A
Drawn By: TLC	Checked By: NJY
Figure: 11	

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

MIDLAND BAY OF GEORGIAN BAY

Former 420 Bayshore Drive

Former 288 Bayshore Drive

Former 475 Bayshore Drive

Bayshore Drive

William Street

BH18-23			
Depth	1.2-1.5	3.5-3.8	4.4-5.0
F1-BTEX	<10	<10	<10
F2	13	<10	19
F3	140	<50	280
F4	300	<50	440

TP18-16		
Depth	0.0 - 0.6	3.5
F4	590	<50

BH18-25	
Depth	1.8-2.4
F1-BTEX	100
F2	15
F3	96
F4	<50

SS18-06	
Depth	0 - 0.15
F1-BTEX	100
F2	35
F4	200

SS18-07	
Depth	0 - 0.15
F1-BTEX	180
F2	100
F3	360
F4	510

SS4	
Depth	0 - 0.15
F1-BTEX	31
F4	540

MOUND 1	
Depth	0 - 0.15
F2	19
F4	1400

TP107		
Depth	1.2	1.8
F1-BTEX	7	31

BH18-06		
Depth	3.5 - 3.8	4.9 - 5.2
F2	13 (<10)	<10

BH18-14	
Depth	3.5-3.8
F1-BTEX	<10 (11)
F2	37 (33)
F3	620 (680)
F4	1100 (1600)

BH14		
Depth	0.51 - 1.37	
F2	13	

BH18-11		
Depth	3.5 - 3.9	4.6 - 5.2
F1-BTEX	15	<10 (47)
F2	110	160 (57)
F3	1500	1200 (970)
F4	22000	9900 (8300)

BH14-01	
Depth	0.8 - 1.4
F1-BTEX	<50 (<50)

BH18-07		
Depth	0.6 - 1.1	4.6 - 5.3
F1-BTEX	210	<10
F2	1200	<10
F3	930	<50
F4	190	<50

TP18-19	
Depth	0.6 - 1.2
F2	140
F3	1800
F4	4900

BH18-04		
Depth	0.4 - 0.9	3.6 - 4.3
F2	130	<10
F3	39000	<50
F4	7100	<50

TP02		
Depth	2.0	3.0
F2	590	18
F3	1300	79

BH18-01		
Depth	0.0 - 0.2	3.0 - 3.8
F2	17	<10
F3	370	<50
F4	650	<50

BH18-20	
Depth	0-0.61
F1-BTEX	<10
F2	15
F3	180
F4	210

BH18-05		
Depth	0.0 - 0.6	6.1 - 6.5
F1-BTEX	91	<10
F2	1700	<10
F3	2100	<50
F4	230	<50

TP101		
Depth	1.2	3.0
F2	59	<10
F3	490	<50

BH18-22	
Depth	0-0.61
F1-BTEX	<10
F2	<10
F3	150
F4	140

SS18-19	
Depth	0 - 0.15
F1-BTEX	<30
F2	<10
F3	62
F4	<50

SS18-17	
Depth	0 - 0.15
F1-BTEX	17
F2	36
F3	930
F4	1800

SS18-13	
Depth	0 - 0.15
F1-BTEX	210
F2	51
F3	320
F4	430

SS3	
Depth	0 - 0.15
F1-BTEX	400
F2	260
F3	620
F4	130

BH18-28		
Depth	3.8-4.4	4.6-4.9
F1-BTEX	<10	<10
F2	<10	20
F3	<50	65
F4	<50	<50

BH18-12		
Depth	1.6-2.1	3.8 - 4.6
F2	<10 (<10)	70

BH14-05		
Depth	1.5 - 2.1	3.8 - 4.4
F2	<20	<10 (<10)

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
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CAMBIUM
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- TEST PIT
- SURFICIAL SOIL SAMPLE
- MOUND

- PARAMETERS TESTED MEET TABLE 9 SCS
- PARAMETERS TESTED EXCEED TABLE 9 SCS
- EXTENT OF IMPACT

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

Table 9 SCS	
F1-BTEX	25
F2	10
F3	240
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Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

25 0 25 50 75 100 m

1 : 1,250

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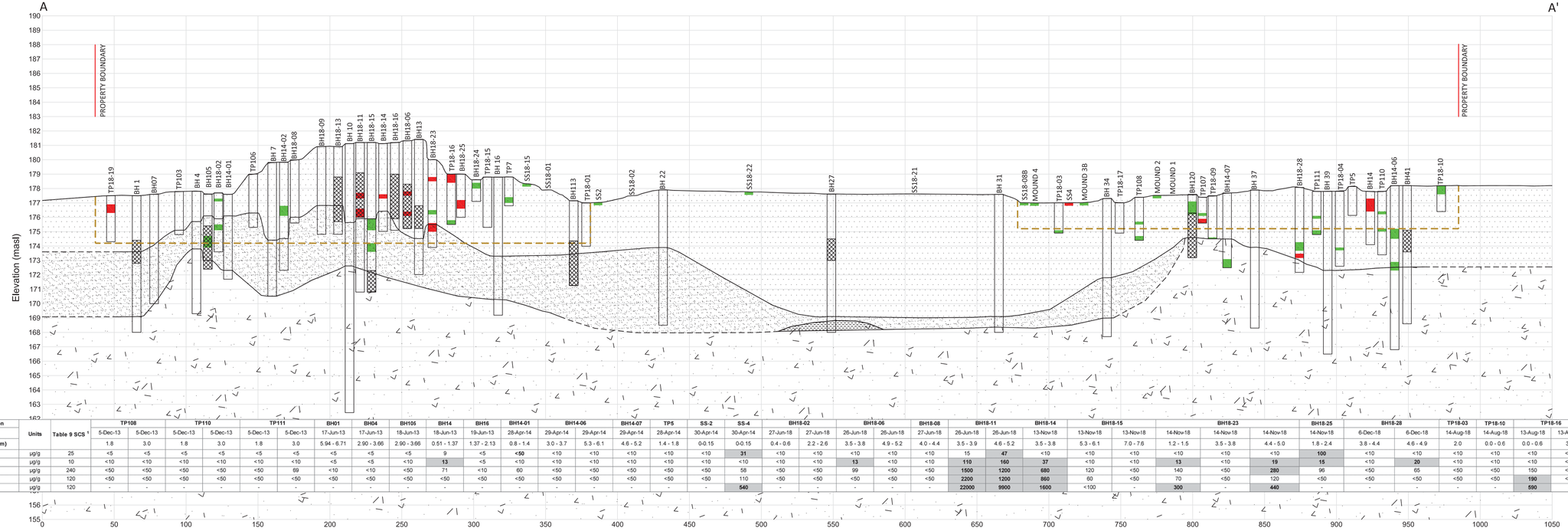
SOIL RESULTS - PHCs

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By: TLC	Checked By: NJY	Figure:	11a

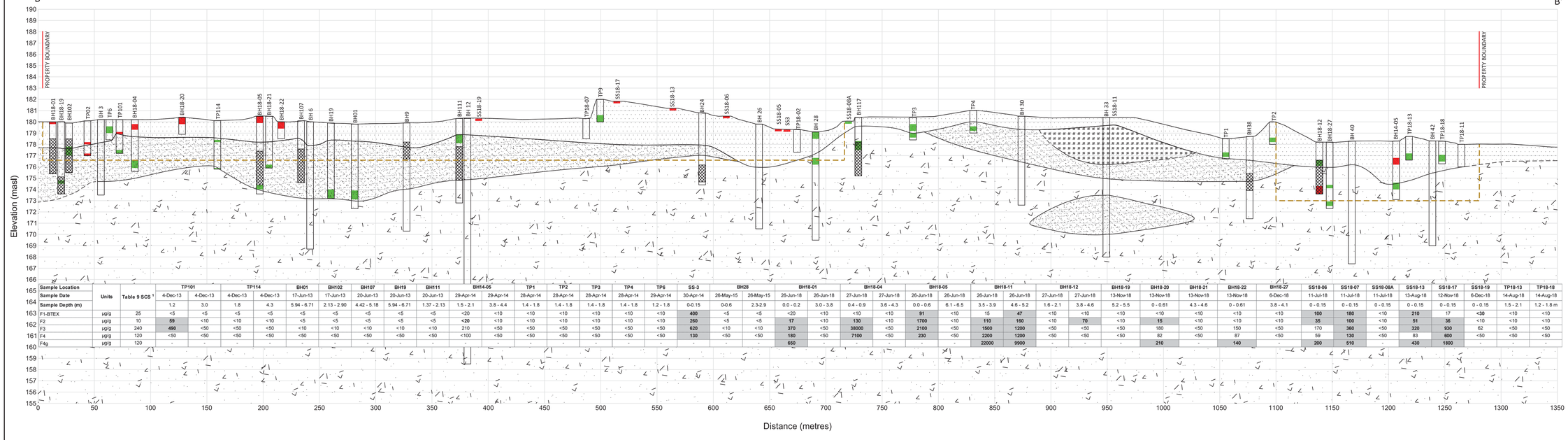
Cross - Section A-A'



Sample Location			TP108		TP110		TP111		BH01	BH04	BH105	BH14	BH16	BH14-01	BH14-06		BH14-07	TP5	SS-2	SS-4	BH18-02		BH18-06		BH18-08	BH18-11		BH18-14	BH18-15			BH18-23			BH18-25	BH18-28			TP18-03	TP18-10	TP18-16		TP18-19
Sample Date	Units	Table 9 SCS [1]	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	17-Jun-13	17-Jun-13	18-Jun-13	18-Jun-13	19-Jun-13	28-Apr-14	29-Apr-14	29-Apr-14	29-Apr-14	28-Apr-14	30-Apr-14	30-Apr-14	27-Jun-18	27-Jun-18	26-Jun-18	26-Jun-18	27-Jun-18	26-Jun-18	26-Jun-18	13-Nov-18	13-Nov-18	13-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18	6-Dec-18	6-Dec-18	14-Aug-18	14-Aug-18	13-Aug-18	13-Aug-18	13-Aug-18
Sample Depth (m)			1.8	3.0	1.8	3.0	1.8	3.0	5.94 - 6.71	2.90 - 3.66	2.90 - 3.66	0.51 - 1.37	1.37 - 2.13	0.8 - 1.4	3.0 - 3.7	5.3 - 6.1	4.6 - 5.2	1.4 - 1.8	0-0.15	0-0.15	0.4 - 0.6	2.2 - 2.6	3.5 - 3.8	4.9 - 5.2	4.0 - 4.4	3.5 - 3.9	4.6 - 5.2	3.5 - 3.8	5.3 - 6.1	7.0 - 7.6	1.2 - 1.5	3.5 - 3.8	4.4 - 5.0	1.8 - 2.4	3.8 - 4.4	4.6 - 4.9	2.0	0.0 - 0.6	0.0 - 0.6	3.5	0.6 - 1.2
F1-BTEX	µg/g	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	9	<5	**<50**	<10	<10	<10	<10	<10	31	<10	<10	<10	<10	<10	15	47	<10	<10	<10	<10	<10	<10	100	<10	<10	<10	<10	<10	<10	11
F2	µg/g	10	<10	<10	<10	<10	<10	<10	<5	<5	<10	13	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	13	<10	<10	110	160	37	<10	<10	13	<10	19	15	<10	20	<10	<10	<10	<10	140
F3	µg/g	240	<50	<50	<50	<50	<50	89	<10	<10	<50	71	<10	60	<50	<50	<50	<50	<50	58	<50	<50	99	<50	<50	1500	1200	680	120	<50	140	<50	280	96	<50	65	<50	150	<50	1800
F4	µg/g	120	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	110	<50	<50	<50	<50	<50	2200	1200	860	60	<50	70	<50	120	<50	<50	<50	<50	190	<50	850
F4g	µg/g	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	540	-	-	-	-	-	22000	9900	1600	<100	-	300	-	440	-	-	-	-	590	-	4900

Horizontal Scale = 1:1,500
Vertical Scale = 1:150

Cross - Section B-B'



Sample Location			TP101		TP114		BH01	BH102	BH107	BH19	BH111	BH14-05		TP1	TP2	TP3	TP4	TP6	SS-3	BH28		BH18-01		BH18-04		BH18-05		BH18-11		BH18-12			BH18-19	BH18-20	BH18-21	BH18-22	BH18-27	SS18-06	SS18-07	SS18-08A	SS18-13	SS18-17	BH18-19	TP18-13	TP18-18
Sample Date	Units	Table 9 SCS [1]	4-Dec-13	4-Dec-13	4-Dec-13	4-Dec-13	17-Jun-13	17-Jun-13	20-Jun-13	20-Jun-13	20-Jun-13	29-Apr-14	29-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	29-Apr-14	30-Apr-14	26-May-15	26-May-15	26-Jun-18	26-Jun-18	27-Jun-18	27-Jun-18	26-Jun-18	26-Jun-18	26-Jun-18	26-Jun-18	27-Jun-18	27-Jun-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	6-Dec-18	11-Jul-18	11-Jul-18	11-Jul-18	13-Aug-18	12-Nov-18	6-Dec-18	14-Aug-18	14-Aug-18
Sample Depth (m)			1.2	3.0	1.8	4.3	5.94 - 6.71	2.13 - 2.90	4.42 - 5.18	5.94 - 6.71	1.37 - 2.13	1.5 - 2.1	3.8 - 4.4	1.4 - 1.8	1.4 - 1.8	1.4 - 1.8	1.4 - 1.8	1.2 - 1.8	0-0.15	0-0.6	2.3-2.9	0.0 - 0.2	3.0 - 3.8	0.4 - 0.9	3.6 - 4.3	0.0 - 0.6	6.1 - 6.5	3.5 - 3.9	4.6 - 5.2	1.6 - 2.1	3.8 - 4.6	5.2 - 5.5	0 - 0.61	4.3 - 4.6	0 - 0.61	3.8 - 4.1	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	1.5 - 2.1	1.2 - 1.8 m
F1-BTEX	µg/g	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<20	<10	<10	<10	<10	<10	<10	400	<5	<5	<20	<10	<10	<10	91	<10	15	47	<10	<10	<10	<10	<10	<10	100	180	<10	210	17	**<30**	<10	<10
F2	µg/g	10	59	<10	<10	<10	<5	<5	<5	<5	<5	**<20**	<10	<10	<10	<10	<10	<10	260	<5	<5	17	<10	130	<10	1700	<10	110	160	<10	70	<10	15	<10	<10	<10	35	100	<10	51	36	<10	<10	<10
F3	µg/g	240	490	<50	<50	<50	<50	<50	<50	<50	<50	210	<50	<50	<50	<50	<50	<50	620	<10	<10	370	<50	38000	<50	2100	<50	1500	1200	<50	<50	<50	180	<50	150	<50	170	360	<50	320	930	62	<50	<50
F4	µg/g	120	<50	<50	<50	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50	<50	<50	<50	130	<50	<50	180	<50	7100	<50	230	<50	2200	1200	<50	<50	<50	82	<50	87	<50	59	130	<50	83	600	<50	<50	<50
F4g	µg/g	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	650	-	-	-	-	-	22000	9900	-	-	-	210	-	140	-	200	510	-	430	1800	-	-	-

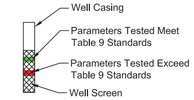
Horizontal Scale = 1:1,750
Vertical Scale = 1:175

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT MIDLAND BAY LANDING

CORPORATION OF THE TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand



NOTE:
SS AND MOUND SAMPLES WITH NO RESULTS SHOWN WERE NOT ANALYZED FOR THE PARAMETER(S) REPORTED.

Table 9 SCS	
F1-BTEX	25
F2	10
F3	240
F4	120

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

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CROSS - SECTIONS A-A' AND B-B'
CROSS - GRADIENT PHCs IN SOIL

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	As Shown	Vertical Exaggeration:	As Shown
Drawn By:	TLC	Checked By:	NJY
Figure:	11b		

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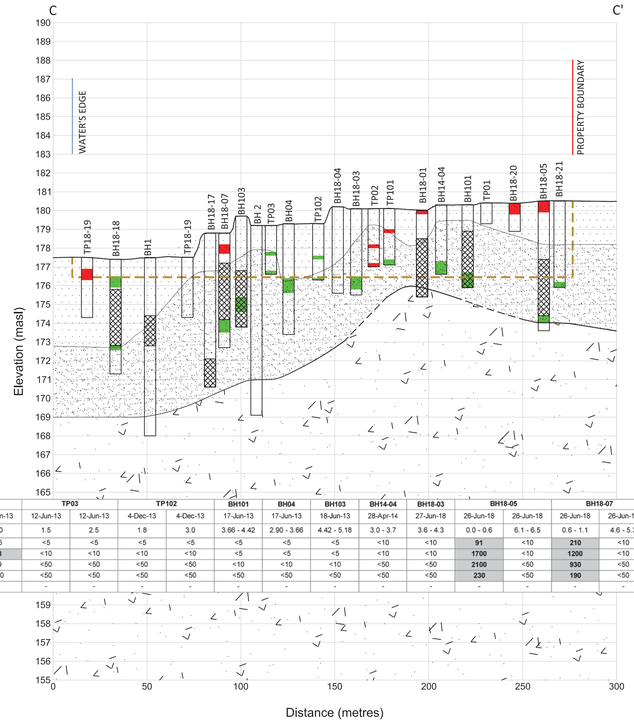
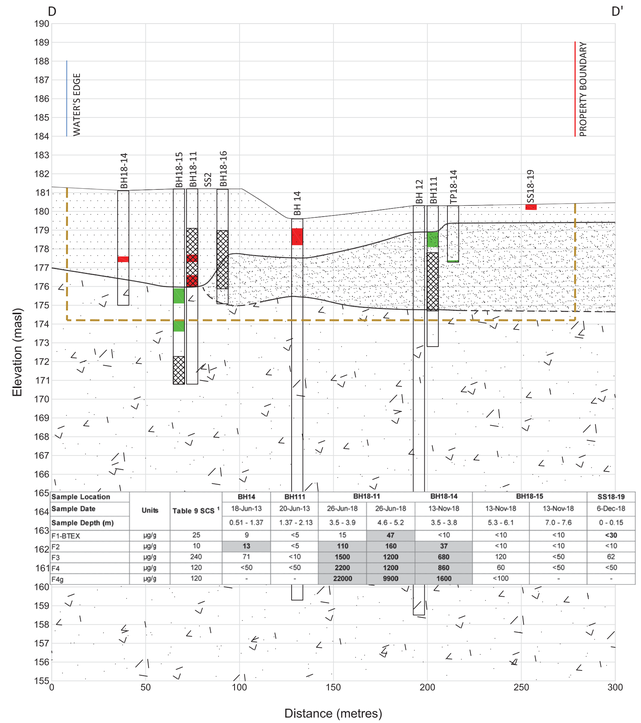
Cross - Section C-C'



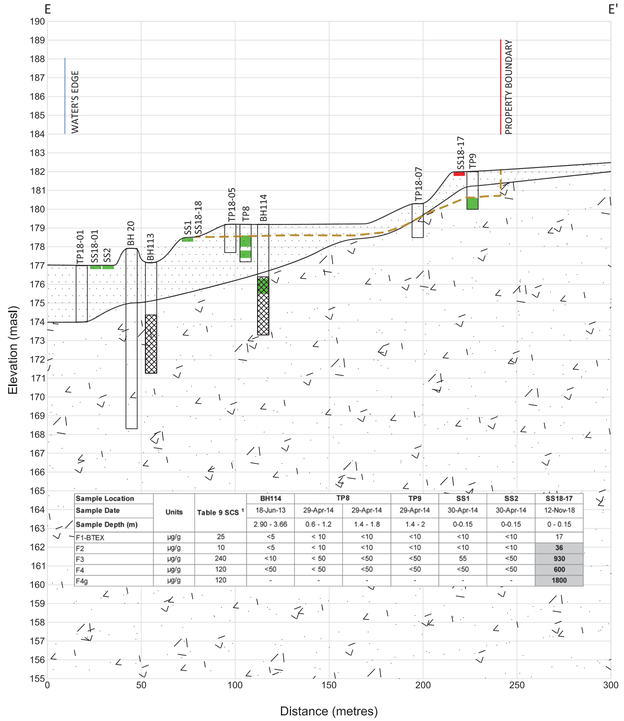
Sample Location			TP02		TP03		TP102		BH101	BH04	BH103	BH14-04	BH18-03	BH18-05		BH18-07		BH18-18		BH18-20	BH18-21
Sample Date	Units	Table 9 SCS [1]	12-Jun-13	12-Jun-13	12-Jun-13	12-Jun-13	4-Dec-13	4-Dec-13	17-Jun-13	17-Jun-13	18-Jun-13	28-Apr-14	27-Jun-18	26-Jun-18	26-Jun-18	26-Jun-18	26-Jun-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18
Sample Depth (m)			2.0	3.0	1.5	2.5	1.8	3.0	3.66 - 4.42	2.90 - 3.66	4.42 - 5.18	3.0 - 3.7	3.6 - 4.3	0.0 - 0.6	6.1 - 6.5	0.6 - 1.1	4.6 - 5.3	0.9 - 1.5	4.6 - 4.9	0 - 0.61	4.3 - 4.6
F1-BTEX	µg/g	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	**91**	<10	**210**	<10	<10	<10	<10	<10
F2	µg/g	10	**590**	**18**	<10	<10	<10	<10	<5	<5	<5	<10	<10	**1700**	<10	**1200**	<10	<10	<10	**15**	<10
F3	µg/g	240	**1300**	79	<50	<50	<50	<50	<10	<10	<10	<50	<50	**2100**	<50	**930**	<50	<50	<50	180	<50
F4	µg/g	120	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**230**	<50	**190**	<50	<50	<50	82	<50
F4g	µg/g	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**210**	-

Cross - Section D-D'



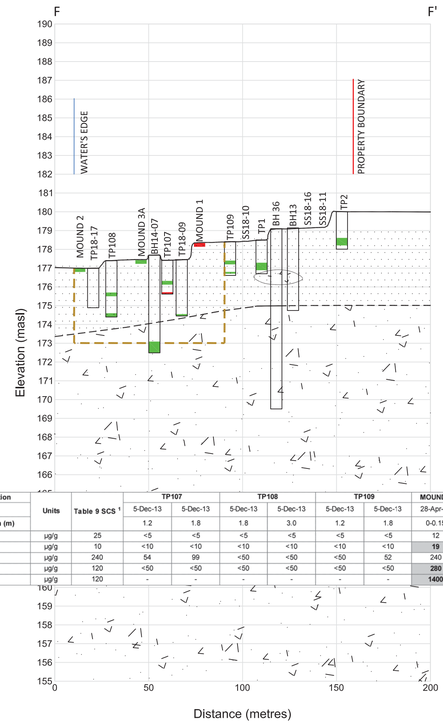
Sample Location			BH14	BH111	BH18-11		BH18-14	BH18-15		SS18-19
Sample Date	Units	Table 9 SCS [1]	18-Jun-13	20-Jun-13	26-Jun-18	26-Jun-18	13-Nov-18	13-Nov-18	13-Nov-18	6-Dec-18
Sample Depth (m)			0.51 - 1.37	1.37 - 2.13	3.5 - 3.9	4.6 - 5.2	3.5 - 3.8	5.3 - 6.1	7.0 - 7.6	0 - 0.15
F1-BTEX	µg/g	25	9	<5	15	**47**	<10	<10	<10	**<30**
F2	µg/g	10	**13**	<5	**110**	**160**	**37**	<10	<10	<10
F3	µg/g	240	71	<10	**1500**	**1200**	**680**	120	<50	62
F4	µg/g	120	<50	<50	**2200**	**1200**	**860**	60	<50	<50
F4g	µg/g	120	-	-	**22000**	**9900**	**1600**	<100	-	-

Cross - Section E-E'



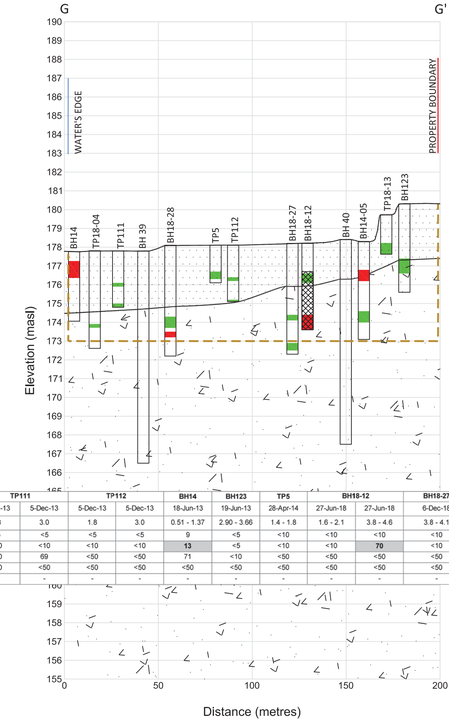
Sample Location			BH114	TP8		TP9	SS1	SS2	SS18-17
Sample Date	Units	Table 9 SCS [1]	18-Jun-13	29-Apr-14	29-Apr-14	29-Apr-14	30-Apr-14	30-Apr-14	12-Nov-18
Sample Depth (m)			2.90 - 3.66	0.6 - 1.2	1.4 - 1.8	1.4 - 2	0-0.15	0-0.15	0 - 0.15
F1-BTEX	µg/g	25	<5	< 10	<10	<10	<10	<10	17
F2	µg/g	10	<5	< 10	<10	<10	<10	<10	**38**
F3	µg/g	240	<10	< 50	<50	<50	55	<50	**930**
F4	µg/g	120	<50	< 50	<50	<50	<50	<50	**600**
F4g	µg/g	120	-	-	-	-	-	-	**1800**

Cross - Section F-F'



Sample Location			TP107		TP108		TP109		MOUND 1	MOUND 2	MOUND 3A
Sample Date	Units	Table 9 SCS [1]	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	28-Apr-14	28-Apr-14	28-Apr-14
Sample Depth (m)			1.2	1.8	1.8	3.0	1.2	1.8	0-0.15	0-0.15	0-0.15
F1-BTEX	µg/g	25	<5	<5	<5	<5	<5	<5	12	14	<10
F2	µg/g	10	<10	<10	<10	<10	<10	<10	**19**	<10	<10
F3	µg/g	240	54	99	<50	<50	<50	52	240	<50	<50
F4	µg/g	120	<50	<50	<50	<50	<50	<50	**280**	<50	<50
F4g	µg/g	120	-	-	-	-	-	-	**1400**	-	-

Cross - Section G-G'



Sample Location			TP111		TP112		BH14	BH123	TP5	BH18-12		BH18-27	BH18-28		
Sample Date	Units	Table 9 SCS [1]	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	18-Jun-13	19-Jun-13	28-Apr-14	27-Jun-18	27-Jun-18	6-Dec-18	6-Dec-18	6-Dec-18	
Sample Depth (m)			1.8	3.0	1.8	3.0	0.51 - 1.37	2.90 - 3.66	1.4 - 1.8	1.6 - 2.1	3.8 - 4.6	3.8 - 4.1	3.8 - 4.4	4.6 - 4.9	
F1-BTEX	µg/g	25	<5	<5	<5	<5	9	<5	<10	<10	<10	<10	<10	<10	
F2	µg/g	10	<10	<10	<10	<10	**13**	<5	<10	<10	**70**	<10	<10	**20**	
F3	µg/g	240	<50	69	<50	<50	71	<10	<50	<50	<50	<50	<50	65	
F4	µg/g	120	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	
F4g	µg/g	120	-	-	-	-	-	-	-	-	-	-	-	-	

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING

CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Parameters Tested Meet Table 9 Standards
- Parameters Tested Exceed Table 9 Standards
- Well Screen

NOTE:
SS AND MOUND SAMPLES WITH NO RESULTS SHOWN WERE NOT ANALYZED FOR THE PARAMETER(S) REPORTED.

Table 9 SCS	
F1-BTEX	25
F2	10
F3	240
F4	120

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

CAMBIUM
P.O. Box 325, 52 Hunter Street East
Peterborough, Ontario, K9H 1G5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

CROSS - SECTIONS C-C' TO G-G' ALONG- GRADIENT PHCs IN SOIL

Project No.: 6820-001		Date: March 2019
		Rev.:
Horizontal Scale: 1:1,500		Vertical Scale: 1:150
Drawn By: TLC	Checked By: NJY	Figure: 11c

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

MIDLAND BAY OF GEORGIAN BAY

Former 420 Bayshore Drive

Former 288 Bayshore Drive

Former 475 Bayshore Drive

Bayshore Drive

William Street

BH18-14		
Depth	3.5-3.8	4.6-5.2
Benzene	0.16/0.27	<0.020 (<0.020)
Ethylbenzene	0.13/0.19	<0.020 (<0.020)
Toluene	0.48/0.74	<0.020 (<0.020)
Xylene Mixture	0.85/1.2	<0.020 (<0.020)

BH18-06		
Depth	3.5 - 3.8	4.9 - 5.2
Benzene	0.36 (1.3)	<0.020
Ethylbenzene	0.059 (0.17)	<0.020
Toluene	0.61 (2)	<0.020
Xylene Mixture	0.37 (1)	<0.040

BH18-23			
Depth	1.2-1.5	3.5-3.8	4.4-5.0
Benzene	0.065	0.026	0.68
Ethylbenzene	0.043	0.064	0.19
Toluene	0.2	0.17	1.5
Xylene Mixture	0.27	0.26	1.3

BH18-25		
Depth	1.8-2.4	
Benzene	0.59	
Ethylbenzene	1.3	
Toluene	4	
Xylene Mixture	9.1	

BH18-24		
Depth	0-0.61	
Benzene	<0.020 (<0.020)	
Ethylbenzene	<0.020 (<0.020)	
Toluene	0.026 (0.037)	
Xylene Mixture	<0.040 (0.072)	

SS18-01		
Depth	0 - 0.15	
Benzene	0.092	
Ethylbenzene	0.12	
Toluene	0.52	
Xylene Mixture	0.95	

SS2		
Depth	0 - 0.15	
Benzene	0.041	
Xylene Mixture	0.21	

SS18-18		
Depth	0 - 0.15	
Benzene	0.082	
Ethylbenzene	0.16	
Toluene	0.47	
Xylene Mixture	0.84	

SS18-22		
Depth	0 - 0.15	
Benzene	0.26	
Ethylbenzene	0.17	
Toluene	0.87	
Xylene Mixture	1.5	

SS18-07		
Depth	0 - 0.15	
Benzene	1.7	
Ethylbenzene	2.6	
Toluene	14	
Xylene Mixture	25	

SS18-08B		
Depth	0 - 0.15	
Benzene	0.088	
Ethylbenzene	0.077	
Toluene	0.39	
Xylene Mixture	0.53	

MOUND 4		
Depth	0 - 0.15	
Benzene	0.041	
Xylene Mixture	0.32	

SS4		
Depth	0 - 0.15	
Benzene	0.76	
Ethylbenzene	1	
Toluene	4.8	
Xylene Mixture	7	

MOUND 2		
Depth	0 - 0.15	
Benzene	0.55	
Ethylbenzene	0.27	
Toluene	1.6	
Xylene Mixture	1.3	

MOUND 1		
Depth	0 - 0.15	
Benzene	0.074	
Ethylbenzene	0.13	
Toluene	0.42	
Xylene Mixture	0.8	

BH120		
Depth	0.51 - 1.37	
Benzene	0.1	
Ethylbenzene	0.32	
Toluene	3	
Xylene Mixture	1.5	

TP107		
Depth	1.2	1.8
Benzene	1.5	8.4
Ethylbenzene	0.6	3.4
Toluene	3.9	21
Xylene Mixture	4	24

BH18-11		
Depth	3.5 - 3.9	4.6 - 5.2
Benzene	0.058	<0.020 (0.024)
Ethylbenzene	0.044	<0.020 (0.098)
Toluene	0.28	0.037 (0.067)
Xylene Mixture	0.12	0.025 (0.029)

BH18-13		
Depth	2.9-3.5	4.6-5.2
Benzene	0.74	<0.020
Ethylbenzene	0.17	<0.020
Toluene	1.3	<0.020
Xylene Mixture	1.1	<0.020

BH14-02	
Depth	3.0 - 3.7
Benzene	0.21
Toluene	0.29
Xylene Mixture	0.11

BH 7	
Depth	3.1 - 3.7
Benzene	0.31
Toluene	0.5
Xylene Mixture	0.31

BH14-01		
Depth	0.8 - 1.4	
Benzene	<0.10 (<0.10)	
Ethylbenzene	<0.10 (<0.10)	
Xylene Mixture	<0.20 (<0.20)	

BH18-07		
Depth	0.6 - 1.1	4.6 - 5.3
Benzene	0.31	<0.020
Ethylbenzene	0.27	<0.020
Toluene	0.99	<0.020
Xylene Mixture	2	<0.040

TP18-19		
Depth	0.6 - 1.2	
Benzene	0.17	
Ethylbenzene	0.15	
Toluene	0.55	
Xylene Mixture	0.91	

BH18-04		
Depth	0.4 - 0.9	3.6 - 4.3
Benzene	0.17	<0.020
Ethylbenzene	0.25	<0.020
Toluene	0.75	<0.020
Xylene Mixture	1.1	<0.040

TP101		
Depth	1.2	3.0
Benzene	0.07	<0.02
Ethylbenzene	0.15	<0.05
Toluene	0.55	<0.05
Xylene Mixture	0.85	<0.05

BH18-01		
Depth	0.0 - 0.2	3.0 - 3.8
Benzene	0.12	<0.020
Ethylbenzene	0.23	<0.020
Toluene	0.55	<0.020
Xylene Mixture	2.2	<0.040

BH18-20	
Depth	0-0.61
Benzene	0.14
Ethylbenzene	0.12
Toluene	0.49
Xylene Mixture	0.79

BH18-05		
Depth	0.0 - 0.6	6.1 - 6.5
Xylene Mixture	0.54	<0.040

BH18-22	
Depth	0-0.61
Benzene	0.1
Ethylbenzene	0.11
Toluene	0.44
Xylene Mixture	0.7

SS18-17	
Depth	0 - 0.15
Benzene	0.15
Ethylbenzene	0.22
Toluene	0.86
Xylene Mixture	1.7

SS18-13	
Depth	0 - 0.15
Benzene	2.2
Ethylbenzene	2.4
Toluene	12
Xylene Mixture	19

SS18-19	
Depth	0 - 0.15
Benzene	<0.060
Ethylbenzene	<0.060
Xylene Mixture	<0.12

SS18-20	
Depth	0 - 0.15
Xylene Mixture	0.14

SS18-06	
Depth	0 - 0.15
Benzene	1.4
Ethylbenzene	1.9
Toluene	8.5
Xylene Mixture	14

SS3	
Depth	0 - 0.15
Benzene	5
Ethylbenzene	4.8
Toluene	25
Xylene Mixture	43

SS18-05	
Depth	0 - 0.15
Benzene	0.087
Ethylbenzene	0.11
Toluene	0.39
Xylene Mixture	0.85

SS18-08A	
Depth	0 - 0.15
Xylene Mixture	0.19

MOUND 3A	
Depth	0 - 0.15
Xylene Mixture	0.18

TP109		
Depth	1.2	1.8
Benzene	<0.02	0.15
Ethylbenzene	<0.05	0.27
Toluene	0.35	1.3
Xylene Mixture	0.24	2.4

SS18-10	
Depth	0 - 0.15
Xylene Mixture	0.095

TP112		
Depth	1.8	3
Toluene	0.3	<0.05
Xylene Mixture	0.21	<0.05

BH14-05		
Depth	1.5 - 2.1	3.8 - 4.4
Benzene	<0.040	<0.020 (<0.020)
Xylene Mixture	<0.080	<0.040 (<0.040)

TP18-11	
Depth	2.0
Benzene	0.14
Ethylbenzene	0.098
Toluene	0.46
Xylene Mixture	0.59

TP18-09	
Depth	3.0
Benzene	<0.040
Xylene Mixture	<0.080

TP111		
Depth	1.8	3
Benzene	0.97	0.47
Ethylbenzene	0.97	0.38
Toluene	5.8	2.2
Xylene Mixture	6.7	3

BH14	
Depth	0.51 - 1.37
Ethylbenzene	0.13
Toluene	0.59
Xylene Mixture	0.56

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PETO MacCALLUM LTD.
- MONITORING WELL
- BOREHOLE
- SAMPLE (CRUSHED ROCK FOR CHEMICAL TESTING)

PINCHIN LTD.
- MONITORING WELL
- BOREHOLE
- TEST PIT

STANTEC
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE

CAMBIUM
- MONITORING WELL
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE
- MOUND
- PARAMETERS TESTED MEET TABLE 9 SCS
- PARAMETERS TESTED EXCEED TABLE 9 SCS
- EXTENT OF IMPACT

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

Table 9 SCS

Benzene	0.02
Ethylbenzene	0.05
Toluene	0.2
Xylene Mixture	0.05

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

25 0 25 50 75 100 m

1 : 1,250

CAMBIUM
P.O. Box 325, 52 Hunter Street East
Peterborough, Ontario, K9H 1G5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

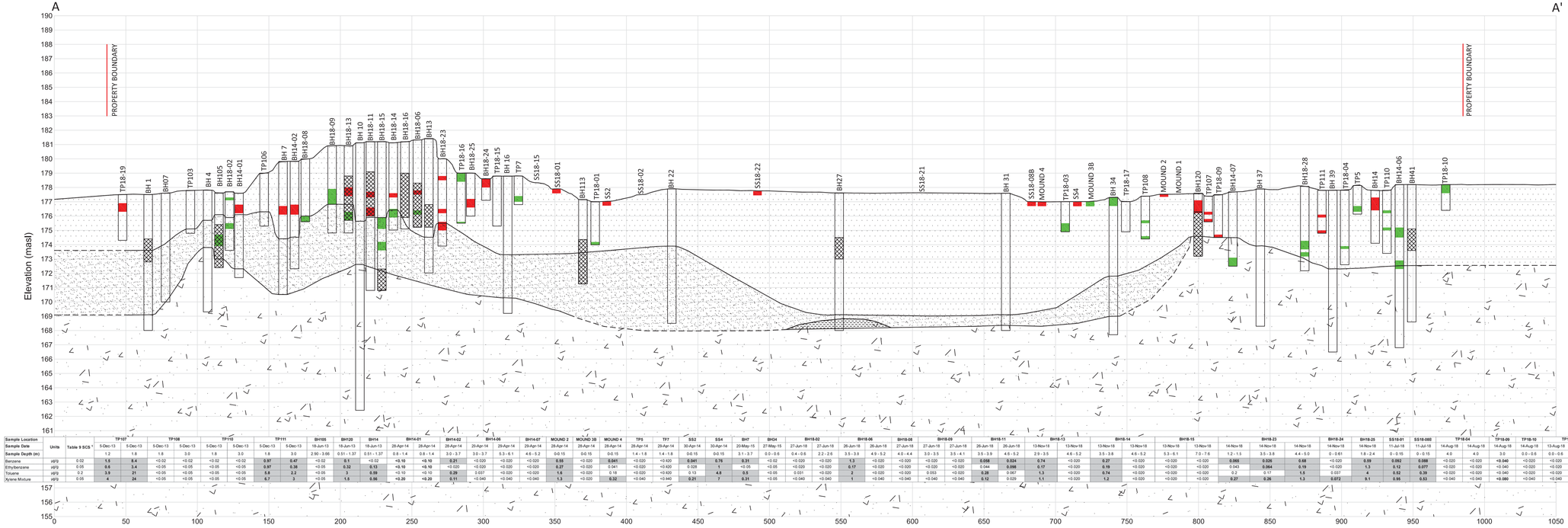
SOIL RESULTS - BTEX

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By: TLC	Checked By: NJY	Figure:	12a

P:\6820's to 6899\6820-001 Midland Bay Landing\Drawings\Drawings\12a\6820-001-12 Phase Two Figures.dwg

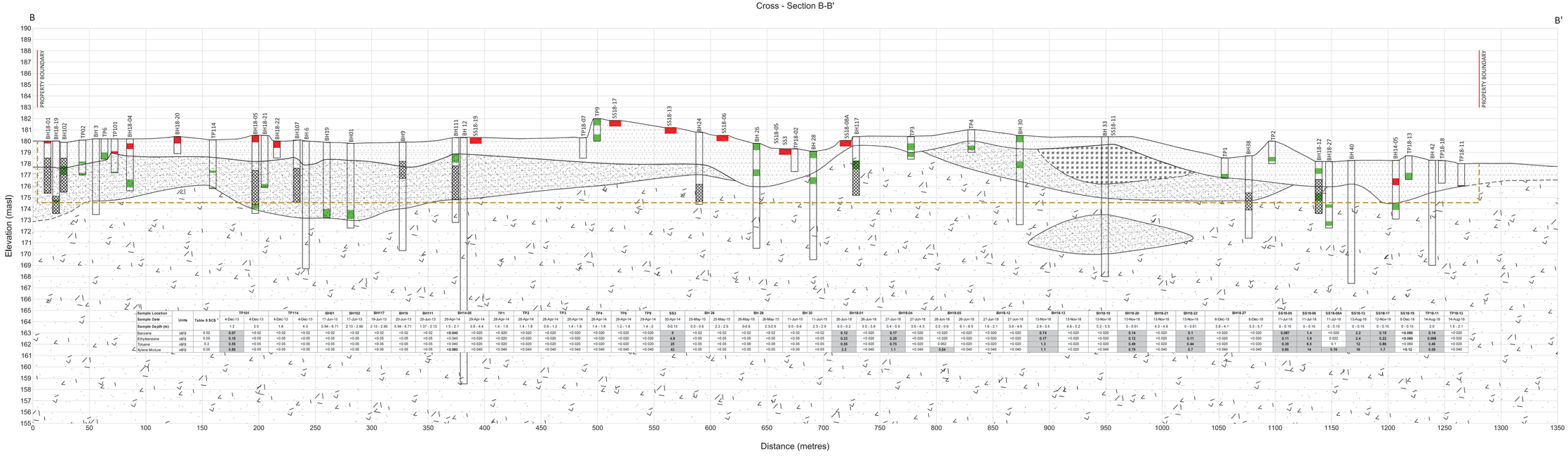
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

Cross - Section A-A'



Sample Location			TP107		TP108		TP109		TP110		TP111		BH105	BH120	BH14	BH14-01		BH14-02	BH14-06	BH14-07		MOUND 2	MOUND 3B	MOUND 4	TP5	TP7	SS2	SS4	BH7	BH34	BH18-02		BH18-06	BH18-09	BH18-05		BH18-11		BH18-13		BH18-14		BH18-15			BH18-23		BH18-24	BH18-25	SS18-01	SS18-08B	TP18-04		TP18-09	TP18-10	TP18-16		TP18-19
Sample Date	Units	Table 9 SCS [1]	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	18-Jun-13	18-Jun-13	18-Jun-13	28-Apr-14	28-Apr-14	28-Apr-14	20-Apr-14	29-Apr-14	29-Apr-14	29-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	29-Apr-14	29-Apr-14	20-May-15	27-May-15	27-Jun-18	27-Jun-18	26-Jun-18	27-Jun-18	27-Jun-18	26-Jun-18	26-Jun-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18	14-Nov-18	11-Jul-18	11-Jul-18	11-Jul-18	13-Aug-18	12-Nov-18	5-Dec-18	14-Aug-18	14-Aug-18	14-Aug-18	14-Aug-18	13-Aug-18	13-Aug-18	13-Aug-18
Sample Depth (m)			1.2	1.8	1.8	3.0	1.8	3.0	1.8	3.0	2.90 - 3.66	0.51 - 1.37	0.51 - 1.37	0.8 - 1.4	0.8 - 1.4	3.0 - 3.7	3.0 - 3.7	5.3 - 6.1	4.6 - 5.2	0-0.15	0-0.15	0-0.15	1.4 - 1.8	1.4 - 1.8	0-0.15	0-0.15	3.1 - 3.7	0.0 - 0.6	0.4 - 0.6	2.2 - 2.6	3.5 - 3.8	4.9 - 5.2	4.0 - 4.4	3.0 - 3.5	3.5 - 4.1	3.5 - 3.9	4.6 - 5.2	2.9 - 3.5	4.6 - 5.2	3.5 - 3.8	4.6 - 5.2	5.3 - 6.1	7.0 - 7.6	1.2 - 1.5	3.5 - 3.8	4.4 - 5.0	0 - 0.61	1.8 - 2.4	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	4.0	4.0	3.0	0.0 - 0.6	0.0 - 0.6	3.5	0.6 - 1.2
Benzene	ug/g	0.02	1.5	8.4	<0.02	<0.02	<0.02	<0.02	0.1	<0.02	0.97	0.47	<0.02	0.1	<0.02	<0.10	<0.10	0.21	<0.020	<0.020	<0.020	0.55	<0.020	0.041	<0.020	<0.020	0.041	0.76	0.31	<0.02	<0.020	<0.020	1.3	<0.020	<0.020	<0.020	<0.020	0.038	0.034	0.74	<0.020	0.27	<0.020	<0.020	<0.020	0.065	0.026	0.68	<0.020	0.59	0.092	0.068	<0.020	<0.020	<0.040	<0.020	<0.020	<0.020	0.17
Ethylbenzene	ug/g	0.05	0.6	3.4	<0.05	<0.05	<0.05	<0.05	0.32	0.13	0.97	0.38	<0.05	0.32	0.13	<0.10	<0.10	<0.020	<0.020	<0.020	<0.020	0.27	<0.020	5.041	<0.020	<0.020	0.028	1	<0.05	<0.05	<0.020	<0.020	0.17	<0.020	<0.020	<0.020	<0.020	0.044	0.096	0.17	<0.020	0.19	<0.020	<0.020	<0.020	0.043	0.064	0.19	<0.020	1.3	0.12	0.077	<0.020	<0.020	<0.040	<0.020	<0.020	<0.020	0.15
Toluene	ug/g	0.2	3.9	21	<0.05	<0.05	<0.05	<0.05	5.8	2.2	<0.05	3	0.59	<0.10	<0.10	0.29	0.037	<0.020	<0.020	1.6	<0.020	0.18	<0.020	<0.020	0.13	4.8	0.5	<0.05	0.031	<0.020	2	<0.020	<0.020	0.053	<0.020	0.28	0.067	1.3	<0.020	0.74	<0.020	<0.020	<0.020	0.2	0.17	1.5	0.037	4	0.52	0.39	<0.020	<0.020	<0.040	<0.020	<0.020	<0.020	0.55
Xylene Mixture	ug/g	0.05	4	24	<0.05	<0.05	<0.05	<0.05	6.7	3	<0.05	1.5	0.56	<0.20	<0.20	0.11	<0.040	<0.040	<0.040	1.3	<0.020	0.32	<0.040	<0.040	0.21	7	0.31	<0.05	<0.040	<0.040	1	<0.040	<0.040	<0.040	<0.040	0.12	0.029	1.1	<0.020	1.2	<0.020	<0.020	<0.020	0.27	0.26	1.3	0.072	9.1	0.99	0.53	<0.040	<0.040	<0.080	<0.040	<0.040	<0.040	0.91

Cross - Section B-B'



Sample Location			TP101		TP114		BH01	BH102	BH117	BH19	BH111	BH14-06	TP1	TP2	TP3	TP4	TP6	TP9	SS3	BH 26		BH 28		BH 30	BH18-01	BH18-04		BH18-05	BH18-12			BH18-13		BH18-19	BH18-20	BH18-21	BH18-22		BH18-27	SS18-05	SS18-06	SS18-08A	SS18-13	SS18-17	SS18-19	TP18-11	TP18-13
Sample Date	Units	Table 9 SCS [1]	4-Dec-13	4-Dec-13	4-Dec-13	4-Dec-13	17-Jun-13	17-Jun-13	19-Jun-13	20-Jun-13	20-Jun-13	29-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	29-Apr-14	29-Apr-14	30-Apr-14	25-May-15	25-May-15	26-May-15	28-May-15	11-Jun-15	11-Jun-15	26-Jun-18	27-Jun-18	27-Jun-18	26-Jun-18	26-Jun-18	27-Jun-18	27-Jun-18	27-Jun-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	6-Dec-18	6-Dec-18	11-Jul-18	11-Jul-18	11-Jul-18	13-Aug-18	12-Nov-18	5-Dec-18	14-Aug-18	14-Aug-18
Sample Depth (m)			1.2	3.0	1.8	4.3	5.94 - 6.71	2.13 - 2.90	2.13 - 2.90	5.94 - 6.71	1.37 - 2.13	1.5 - 2.1	3.8 - 4.4	1.4 - 1.8	1.4 - 1.8	0.6 - 1.2	1.4 - 1.8	1.4 - 1.8	1.2 - 1.8	1.4 - 2	0-0.15	0.0 - 0.6	2.3 - 2.9	0-0.6	2.3-2.9	0.0 - 0.6	2.3 - 2.9	0.0 - 0.2	3.0 - 3.8	0.4 - 0.9	3.8 - 4.3	0.0 - 0.6	6.1 - 6.5	1.6 - 2.1	3.8 - 4.6	2.9 - 3.5	4.6 - 5.2	5.2 - 5.5	0 - 0.61	4.3 - 4.6	0 - 0.61	3.8 - 4.1	5.3 - 5.7	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	2.0	1.5 - 2.1
Benzene	ug/g	0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.040	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.12	<0.020	0.17	<0.020	<0.020	<0.020	<0.020	<0.020	0.74	<0.020	<0.020	0.14	<0.020	0.1	<0.020	<0.020	0.087	1.4	<0.020	2.2	0.15	<0.060	0.14	<0.020
Ethylbenzene	ug/g	0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.040	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	4.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.23	<0.020	0.23	<0.020	<0.020	<0.020	<0.020	<0.020	0.17	<0.020	<0.020	0.12	<0.020	0.11	<0.020	<0.020	0.11	1.9	0.022	2.4	0.22	<0.060	0.088	<0.020
Toluene	ug/g	0.2	0.55	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.040	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	25	<0.05	<0.05	<0.05	<0.08	<0.05	<0.05	0.55	<0.020	0.75	<0.020	0.062	<0.020	<0.020	<0.020	1.3	<0.020	<0.020	0.49	<0.020	0.44	<0.020	<0.020	0.39	8.5	0.1	12	0.85	<0.060	0.46	<0.020
Xylene Mixture	ug/g	0.05	0.85	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.080	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	43	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.2	<0.040	1.1	<0.040	0.84	<0.040	<0.040	<0.040	1.1	<0.020	<0.040	0.79	<0.040	0.7	<0.040	<0.040	0.85	14	0.19	19	1.7	<0.12	0.69	<0.040

NOTE:
SS AND MOUND SAMPLES WITH NO RESULTS SHOWN WERE NOT ANALYZED FOR THE PARAMETER(S) REPORTED.

Table 9 SCS	
Benzene	0.02
Ethylbenzene	0.05
Toluene	0.2
Xylene Mixture	0.05

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

LEGEND

- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Parameters Tested Meet Table 9 Standard
- Parameters Tested Exceed Table 9 Standard
- Well Screen

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CROSS - SECTIONS A-A' AND B-B'
CROSS - GRADIENT BTEX IN SOIL

Project No.: 6820-001	Date: March 2019
	Rev.:
Horizontal Scale: As Shown	Vertical Scale: As Shown
Drawn By: TLC	Checked By: NJY
	Figure: 12b

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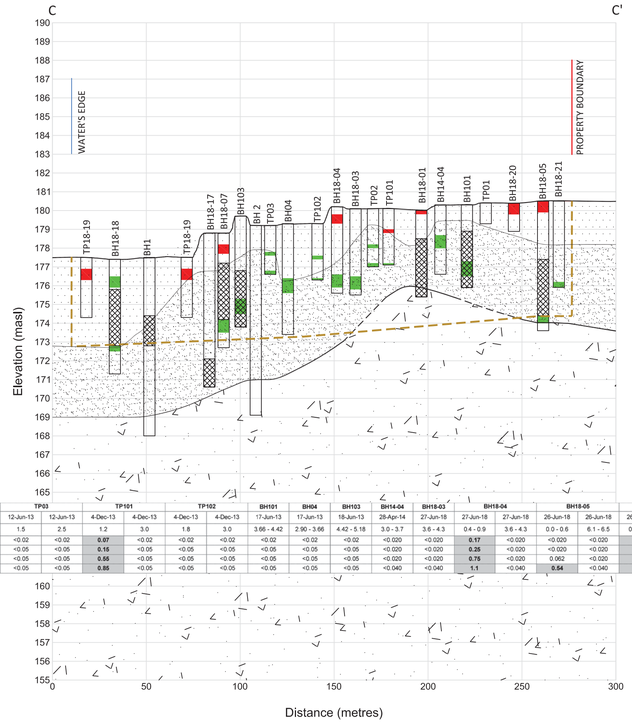
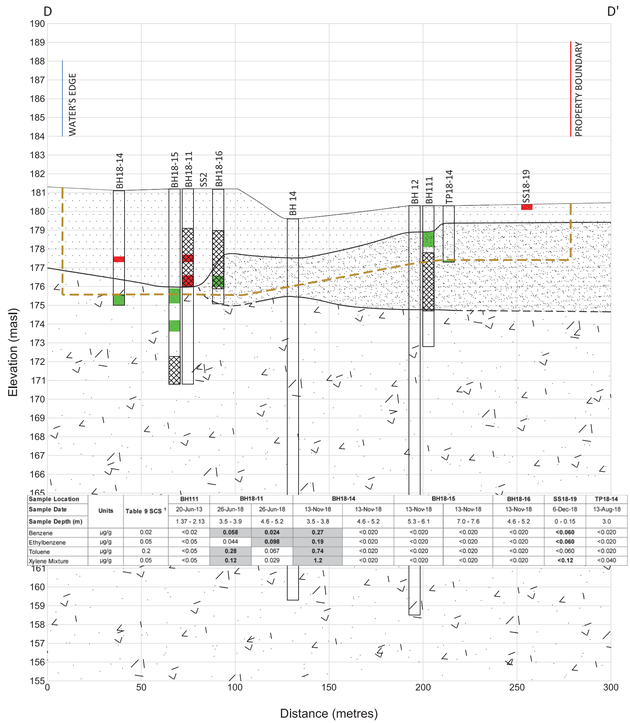
Cross - Section C-C'



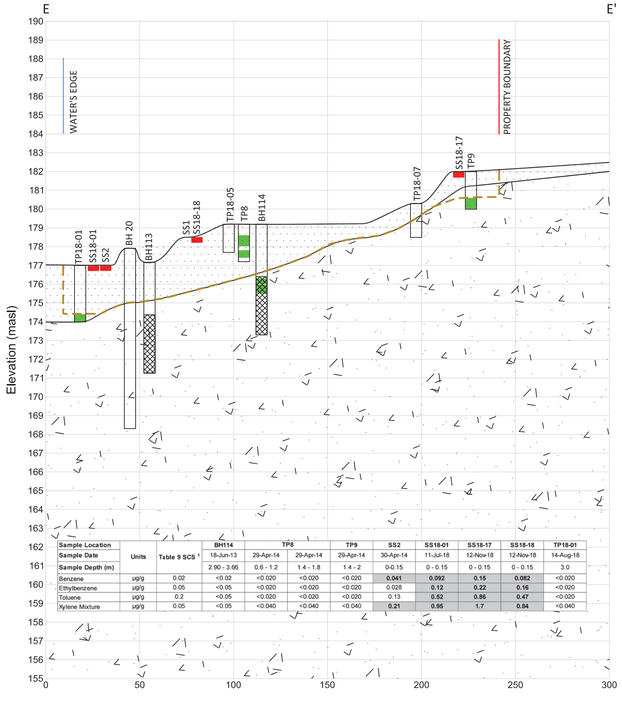
Sample Location			TP02		TP03		TP101		TP102		BH101	BH04	BH103	BH14-04	BH18-03	BH18-04		BH18-05		BH18-07		BH18-19	BH18-20	BH18-21	TP18-19
Sample Date	**Units**	**Table 9 SCS** [1]	12-Jun-13	12-Jun-13	12-Jun-13	12-Jun-13	4-Dec-13	4-Dec-13	4-Dec-13	4-Dec-13	17-Jun-13	17-Jun-13	18-Jun-13	28-Apr-14	27-Jun-18	27-Jun-18	27-Jun-18	26-Jun-18	26-Jun-18	26-Jun-18	26-Jun-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Aug-18
Sample Depth (m)			2.0	3.0	1.5	2.5	1.2	3.0	1.8	3.0	3.66 - 4.42	2.90 - 3.66	4.42 - 5.18	3.0 - 3.7	3.6 - 4.3	0.4 - 0.9	3.6 - 4.3	0.0 - 0.6	6.1 - 6.5	0.6 - 1.1	4.6 - 5.3	5.2 - 5.5	0 - 0.61	4.3 - 4.6	0.6 - 1.2
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	**0.07**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.020	<0.020	**0.17**	<0.020	<0.020	<0.020	**0.31**	<0.020	<0.020	**0.14**	<0.020	**0.17**
Ethylbenzene	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	**0.15**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.020	<0.020	**0.25**	<0.020	<0.020	<0.020	**0.27**	<0.020	<0.020	**0.12**	<0.020	**0.15**
Toluene	µg/g	0.2	<0.05	<0.05	<0.05	<0.05	**0.55**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.020	<0.020	**0.75**	<0.020	0.062	<0.020	**0.99**	<0.020	<0.020	**0.49**	<0.020	**0.55**
Xylene Mixture	µg/g	0.05	<0.05	<0.05	<0.05	<0.05	**0.85**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.040	<0.040	**1.1**	<0.040	**0.54**	<0.040	**2**	<0.040	<0.040	**0.79**	<0.040	**0.91**

Cross - Section D-D'



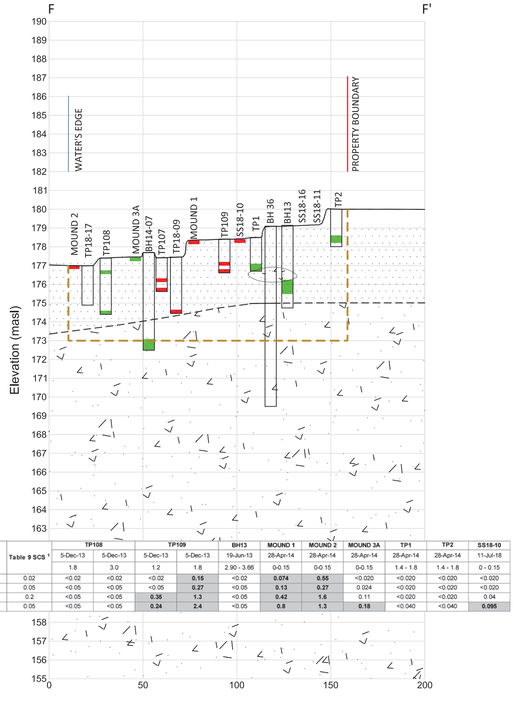
Sample Location			BH111	BH18-11		BH18-14		BH18-15		BH18-16	SS18-19	TP18-14
Sample Date	**Units**	**Table 9 SCS** [1]	20-Jun-13	26-Jun-18	26-Jun-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	6-Dec-18	13-Aug-18
Sample Depth (m)			1.37 - 2.13	3.5 - 3.9	4.6 - 5.2	3.5 - 3.8	4.6 - 5.2	5.3 - 6.1	7.0 - 7.6	4.6 - 5.2	0 - 0.15	3.0
Benzene	µg/g	0.02	<0.02	**0.068**	**0.024**	**0.27**	<0.020	<0.020	<0.020	<0.020	**<0.060**	<0.020
Ethylbenzene	µg/g	0.05	<0.05	0.044	**0.098**	**0.19**	<0.020	<0.020	<0.020	<0.020	**<0.060**	<0.020
Toluene	µg/g	0.2	<0.05	**0.28**	0.067	**0.74**	<0.020	<0.020	<0.020	<0.020	<0.060	<0.020
Xylene Mixture	µg/g	0.05	<0.05	**0.12**	0.029	**1.2**	<0.020	<0.020	<0.020	<0.020	**<0.12**	<0.040

Cross - Section E-E'



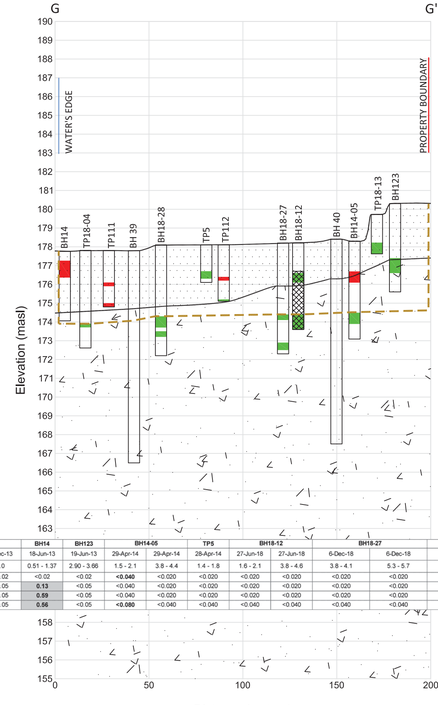
Sample Location			BH114	TP8		TP9	SS2	SS18-01	SS18-17	SS18-18	TP18-01
Sample Date	**Units**	**Table 9 SCS** [1]	18-Jun-13	29-Apr-14	29-Apr-14	29-Apr-14	30-Apr-14	11-Jul-18	12-Nov-18	12-Nov-18	14-Aug-18
Sample Depth (m)			2.90 - 3.66	0.6 - 1.2	1.4 - 1.8	1.4 - 2	0-0.15	0 - 0.15	0 - 0.15	0 - 0.15	3.0
Benzene	µg/g	0.02	<0.02	<0.020	<0.020	<0.020	**0.041**	**0.092**	**0.15**	**0.082**	<0.020
Ethylbenzene	µg/g	0.05	<0.05	<0.020	<0.020	<0.020	0.028	**0.12**	**0.22**	**0.16**	<0.020
Toluene	µg/g	0.2	<0.05	<0.020	<0.020	<0.020	0.13	**0.52**	**0.86**	**0.47**	<0.020
Xylene Mixture	µg/g	0.05	<0.05	<0.040	<0.040	<0.040	**0.21**	**0.95**	**1.7**	**0.84**	<0.040

Cross - Section F-F'



Sample Location			TP108		TP109		BH13	MOUND 1	MOUND 2	MOUND 3A	TP1	TP2	SS18-10
Sample Date	**Units**	**Table 9 SCS** [1]	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	19-Jun-13	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	11-Jul-18
Sample Depth (m)			1.8	3.0	1.2	1.8	2.90 - 3.66	0-0.15	0-0.15	0-0.15	1.4 - 1.8	1.4 - 1.8	0 - 0.15
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	**0.15**	<0.02	**0.074**	**0.55**	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	µg/g	0.05	<0.05	<0.05	**0.27**	<0.05	<0.05	**0.13**	**0.27**	0.024	<0.020	<0.020	<0.020
Toluene	µg/g	0.2	<0.05	<0.05	**0.38**	**1.3**	<0.05	**0.42**	**1.6**	0.11	<0.020	<0.020	0.04
Xylene Mixture	µg/g	0.05	<0.05	<0.05	**0.24**	**2.4**	<0.05	**0.8**	**1.3**	**0.18**	<0.040	<0.040	**0.095**

Cross - Section G-G'



Sample Location			TP112		BH14	BH123	BH14-05		TP5	BH18-12		BH18-27			BH18-28			TP18-04
Sample Date	**Units**	**Table 9 SCS** [1]	5-Dec-13	5-Dec-13	18-Jun-13	19-Jun-13	29-Apr-14	29-Apr-14	28-Apr-14	27-Jun-18	27-Jun-18	6-Dec-18	6-Dec-18	6-Dec-18	6-Dec-18	6-Dec-18	6-Dec-18	14-Aug-18
Sample Depth (m)			1.8	3.0	0.51 - 1.37	2.90 - 3.66	1.5 - 2.1	3.8 - 4.4	1.4 - 1.8	1.6 - 2.1	3.8 - 4.6	3.8 - 4.1	5.3 - 5.7	3.8 - 4.4	4.6 - 4.9	4.0		
Benzene	µg/g	0.02	<0.02	<0.02	<0.02	<0.02	**<0.040**	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	µg/g	0.05	<0.05	<0.05	<0.05	**0.13**	<0.05	<0.040	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.036	<0.020	
Toluene	µg/g	0.2	**0.3**	<0.05	**0.59**	<0.05	<0.040	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.15	<0.020	
Xylene Mixture	µg/g	0.05	**0.21**	<0.05	**0.56**	<0.05	**<0.080**	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	

Table 9 SCS	
Benzene	0.02
Ethylbenzene	0.05
Toluene	0.2
Xylene Mixture	0.05

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING

CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Parameters Tested Meet Table 9 Standard
- Parameters Tested Exceed Table 9 Standard
- Well Screen

NOTE:
SS AND MOUND SAMPLES WITH NO RESULTS SHOWN WERE NOT ANALYZED FOR THE PARAMETER(S) REPORTED.

CAMBIUM
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CROSS - SECTIONS C-C' TO G-G' ALONG - GRADIENT BTEX IN SOIL

Project No.: 6820-001		Date: March 2019
		Rev.:
Horizontal Scale: 1:1,500	Vertical Scale: 1:150	
Drawn By: TLC	Checked By: NJY	Figure: 12c

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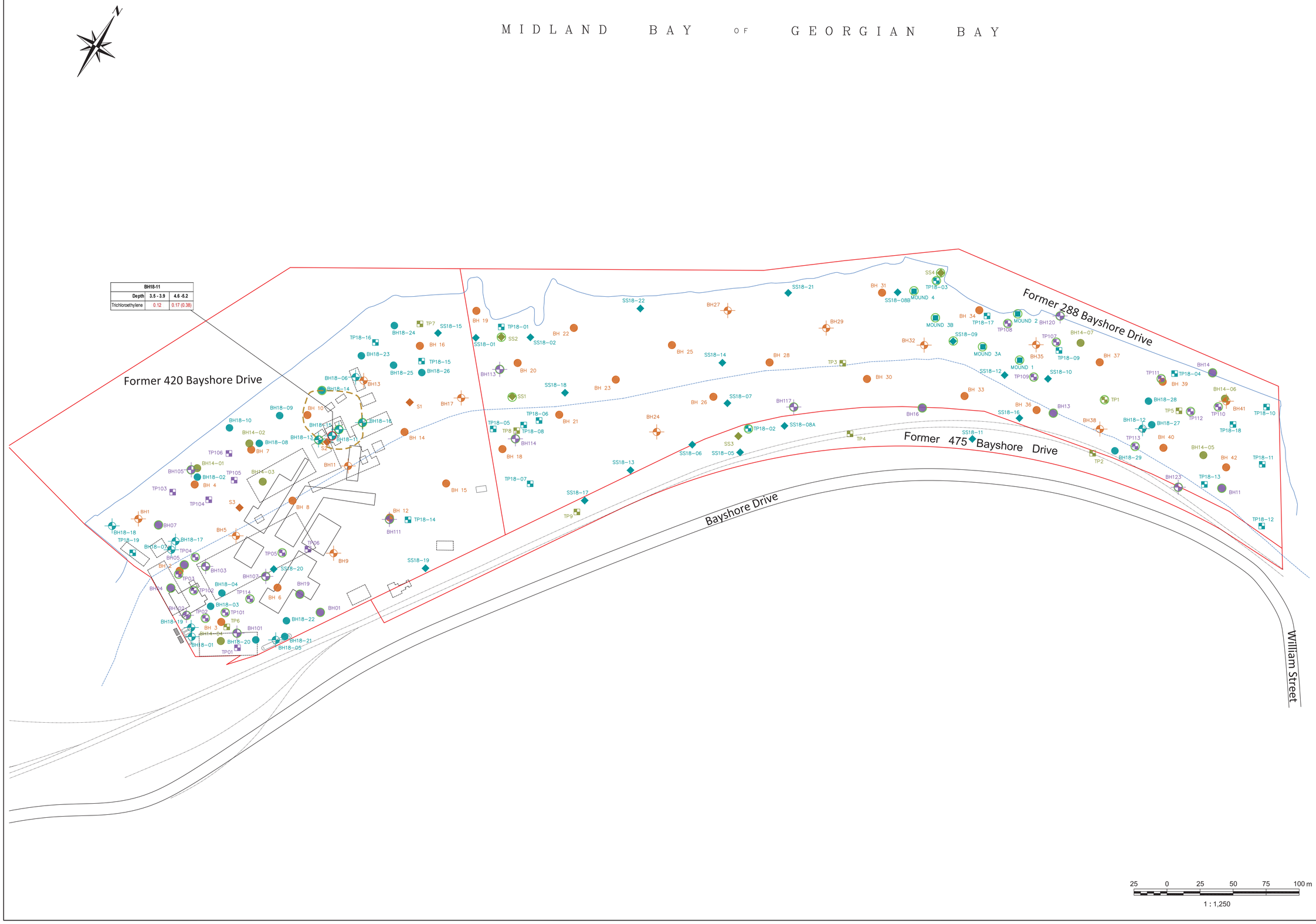
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING

CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario



LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PETO MacCALLUM LTD.
- MONITORING WELL
- BOREHOLE
- SAMPLE (CRUSHED ROCK FOR CHEMICAL TESTING)

PINCHIN LTD.
- MONITORING WELL
- BOREHOLE
- TEST PIT

STANTEC
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE

CAMBIUM
- MONITORING WELL
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE
- MOUND

- PARAMETERS TESTED MEET TABLE 9 SCS
- PARAMETERS TESTED EXCEED TABLE 9 SCS
- EXTENT OF IMPACT

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

Table 9 SCS	
Trichloroethylene	0.05

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

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SOIL RESULTS - VOCs

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By: TLC	Checked By: NJY	Figure:	13a

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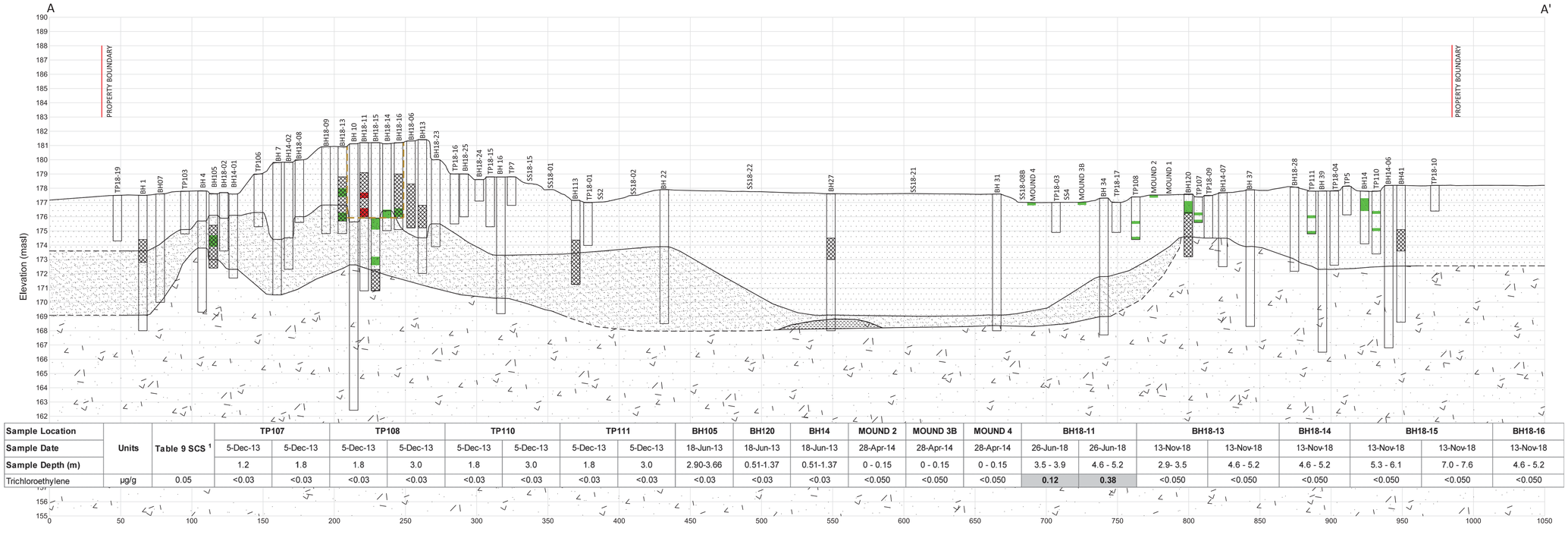
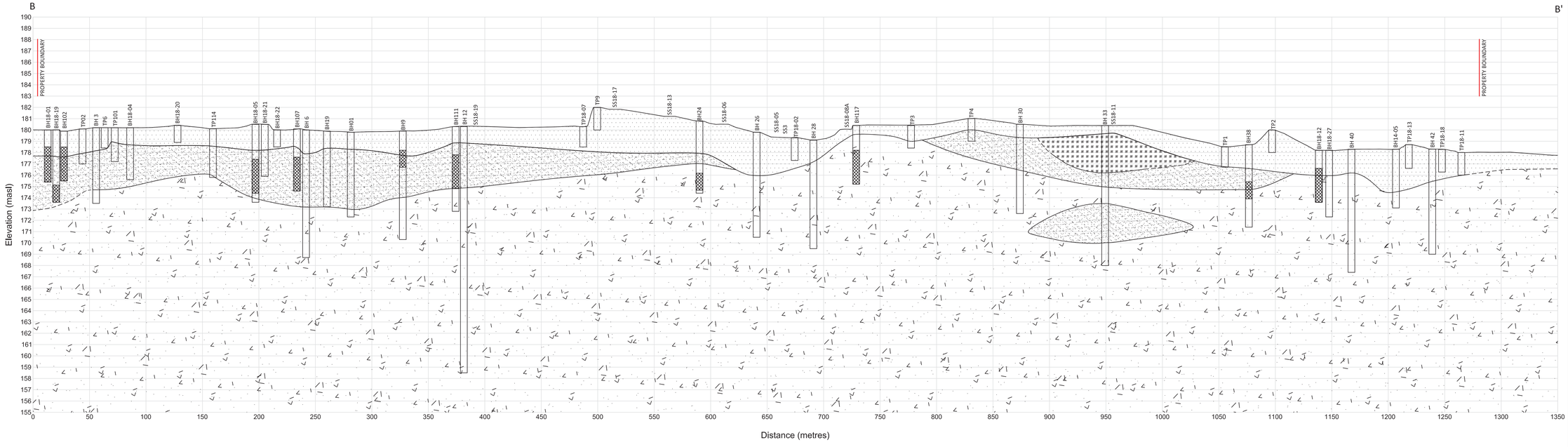
Cross - Section A-A'



Sample Location	Units	Table 9 SCS [1]	TP107		TP108		TP110		TP111		BH105	BH120	BH14	MOUND 2	MOUND 3B	MOUND 4	BH18-11		BH18-13		BH18-14	BH18-15		BH18-16
Sample Date			5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	18-Jun-13	18-Jun-13	18-Jun-13	28-Apr-14	28-Apr-14	28-Apr-14	26-Jun-18	26-Jun-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18
Sample Depth (m)			1.2	1.8	1.8	3.0	1.8	3.0	1.8	3.0	2.90-3.66	0.51-1.37	0.51-1.37	0 - 0.15	0 - 0.15	0 - 0.15	3.5 - 3.9	4.6 - 5.2	2.9- 3.5	4.6 - 5.2	4.6 - 5.2	5.3 - 6.1	7.0 - 7.6	4.6 - 5.2
Trichloroethylene	µg/g	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.050	<0.050	<0.050	**0.12**	**0.38**	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Horizontal Scale = 1:1,500
Vertical Scale = 1:150

Cross - Section B-B'



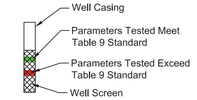
Horizontal Scale = 1:1,750
Vertical Scale = 1:175

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING

CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand



NOTE:
SS AND MOUND SAMPLES WITH NO RESULTS SHOWN WERE NOT ANALYZED FOR THE PARAMETER(S) REPORTED.

Table 9 SCS	
Acetone	0.5
n-Hexane	0.05
Trichloroethylene	0.05

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

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Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

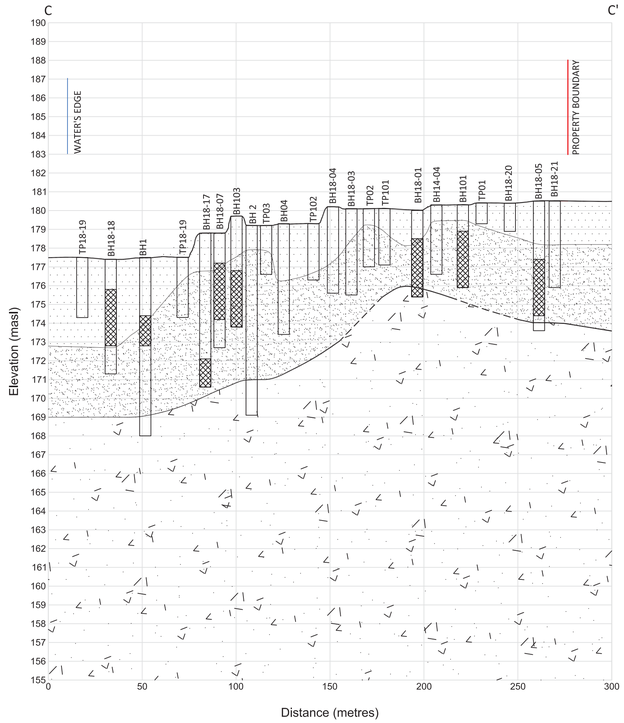
CROSS - SECTIONS A-A' AND B-B'
CROSS - GRADIENT VOCs IN SOIL

Project No.: 6820-001	Date: March 2019
	Rev.:
Horizontal Scale: As Shown	Vertical Scale: As Shown
Drawn By: TLC	Checked By: NJY
Figure: 13b	

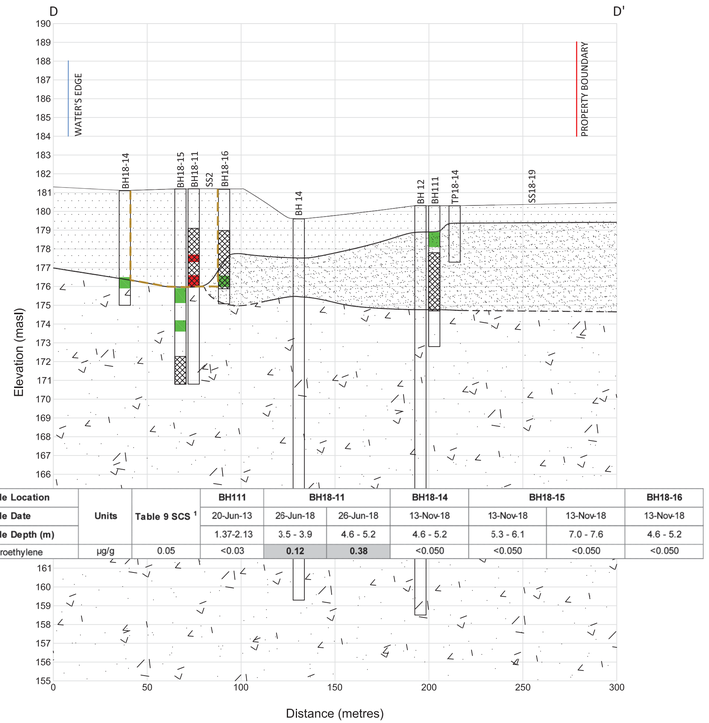
P:\6800s-6899\6820-001 Midland Bay Landing\Graphics\Drawings\CAD\2019-03-15\Phase Two Figures.dwg

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

Cross - Section C-C'

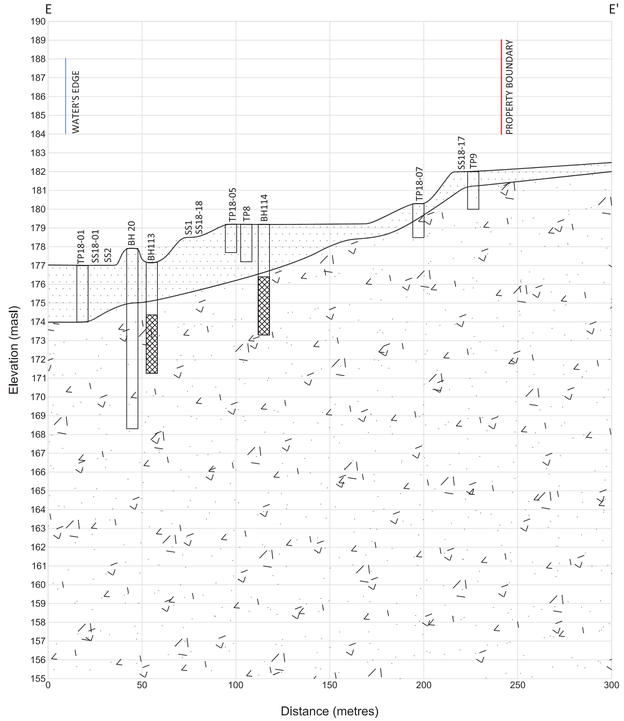


Cross - Section D-D'

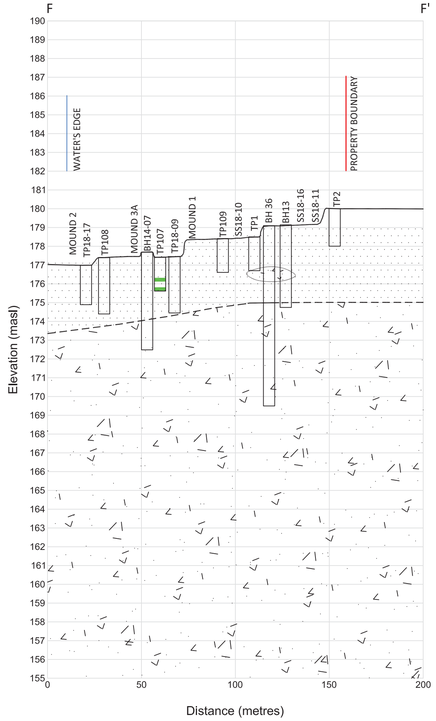


Sample Location	Units	Table 9 SCS [1]	BH111	BH18-11		BH18-14	BH18-15		BH18-16
Sample Date			20-Jun-13	26-Jun-18	26-Jun-18	13-Nov-18	13-Nov-18	13-Nov-18	13-Nov-18
Sample Depth (m)			1.37-2.13	3.5 - 3.9	4.6 - 5.2	4.6 - 5.2	5.3 - 6.1	7.0 - 7.6	4.6 - 5.2
Trichloroethylene	µg/g	0.05	<0.03	**0.12**	**0.38**	<0.050	<0.050	<0.050	<0.050

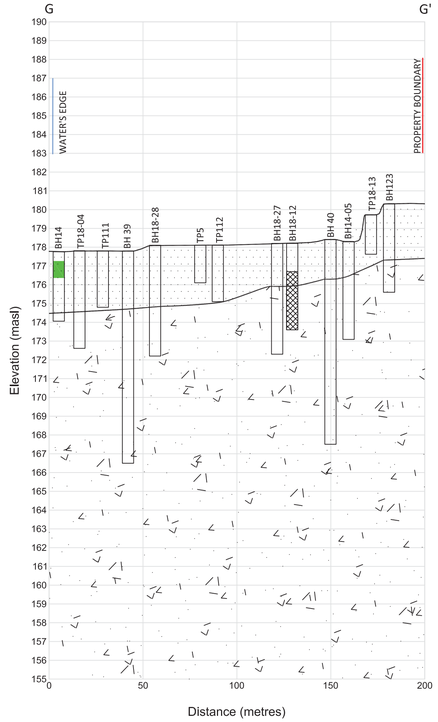
Cross - Section E-E'



Cross - Section F-F'

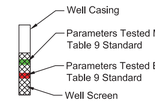


Cross - Section G-G'



LEGEND

- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand



NOTE:
SS AND MOUND SAMPLES WITH NO RESULTS SHOWN WERE NOT ANALYZED FOR THE PARAMETER(S) REPORTED.

Table 9 SCS	
Trichloroethylene	0.05

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

CAMBIUM
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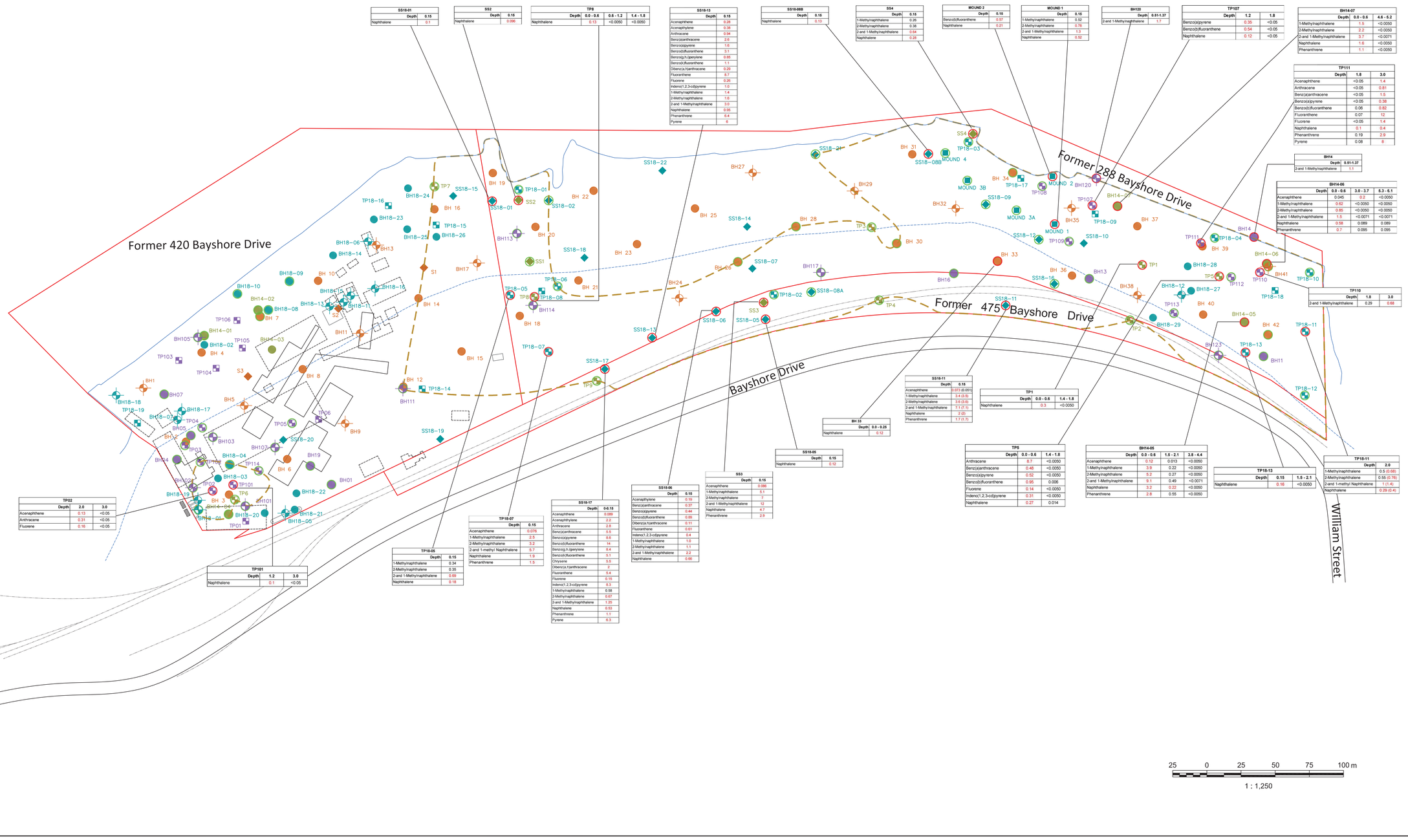
www.cambium-inc.com

CROSS - SECTIONS C-C' TO G-G' ALONG - GRADIENT VOCs IN SOIL

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,500	Vertical Scale:	1:150
Drawn By:	TLC	Checked By:	NJY
Figure:	13c		

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

MIDLAND BAY OF GEORGIAN BAY



SS18-01	
Depth	0.1
Naphthalene	0.1

SS2	
Depth	0.15
Naphthalene	0.056

TP8			
Depth	0.0 - 0.6	0.6 - 1.2	1.4 - 1.8
Naphthalene	0.13	<0.0050	<0.0050

SS18-13	
Depth	0.15
Acenaphthene	0.28
Acenaphthylene	0.38
Anthracene	0.94
Benz(a)anthracene	2.6
Benzo(a)pyrene	1.6
Benzo(b)fluoranthene	3.1
Benzo(g,h,i)perylene	0.85
Benzo(k)fluoranthene	1.1
Dibenz(a,h)anthracene	0.29
Fluoranthene	8.7
Fluorene	0.26
Indeno(1,2,3-cd)pyrene	1.0
1-Methylnaphthalene	1.4
2-Methylnaphthalene	1.6
2-and 1-Methylnaphthalene	3.0
Naphthalene	0.85
Phenanthrene	6.4
Pyrene	6

SS18-08B	
Depth	0.15
Naphthalene	0.13

SS4	
Depth	0.15
1-Methylnaphthalene	0.25
2-Methylnaphthalene	0.38
2-and 1-Methylnaphthalene	0.64
Naphthalene	0.28

MOUND 2		
Depth	0.15	
Benzo(b)fluoranthene	0.57	
Naphthalene	0.21	

MOUND 1	
Depth	0.15
1-Methylnaphthalene	0.52
2-Methylnaphthalene	0.78
2-and 1-Methylnaphthalene	1.3
Naphthalene	0.52

BH120		
Depth	0.51-1.37	
2-and 1-Methylnaphthalene	1.7	

TP107		
Depth	1.2	1.8
Benzo(a)pyrene	0.35	<0.05
Benzo(b)fluoranthene	0.54	<0.05
Naphthalene	0.12	<0.05

BH14-07		
Depth	0.0 - 0.6	4.6 - 5.2
1-Methylnaphthalene	1.5	<0.0050
2-Methylnaphthalene	2.2	<0.0050
2-and 1-Methylnaphthalene	3.7	<0.0071
Naphthalene	1.6	<0.0050
Phenanthrene	1.1	<0.0050

TP111		
Depth	1.8	3.0
Acenaphthene	<0.05	1.4
Anthracene	<0.05	0.81
Benz(a)anthracene	<0.05	1.5
Benzo(a)pyrene	<0.05	0.38
Benzo(b)fluoranthene	0.06	0.82
Fluoranthene	0.07	12
Fluorene	<0.05	1.4
Naphthalene	0.1	0.4
Phenanthrene	0.19	2.9
Pyrene	0.08	8

BH14		
Depth	0.51-1.37	
2-and 1-Methylnaphthalene	1.1	

BH14-06			
Depth	0.0 - 0.6	3.0 - 3.7	5.3 - 6.1
Acenaphthene	0.045	0.2	<0.0050
1-Methylnaphthalene	0.62	<0.0050	<0.0050
2-Methylnaphthalene	0.85	<0.0050	<0.0050
2-and 1-Methylnaphthalene	1.5	<0.0071	<0.0071
Naphthalene	0.58	0.089	0.089
Phenanthrene	0.7	0.095	0.095

TP110		
Depth	1.8	3.0
2-and 1-Methylnaphthalene	0.29	0.68

SS18-11	
Depth	0.15
Acenaphthene	0.073 (0.051)
1-Methylnaphthalene	3.4 (3.5)
2-Methylnaphthalene	3.6 (3.5)
2-and 1-Methylnaphthalene	7.1 (7.1)
Naphthalene	2 (2)
Phenanthrene	1.7 (1.7)

TP1		
Depth	0.0 - 0.6	1.4 - 1.8
Naphthalene	0.3	<0.0050

BH 33	
Depth	0.0 - 0.25
Naphthalene	0.12

SS18-05	
Depth	0.15
Naphthalene	0.12

TP5		
Depth	0.0 - 0.6	1.4 - 1.8
Anthracene	8.7	<0.0050
Benz(a)anthracene	0.48	<0.0050
Benzo(a)pyrene	0.52	<0.0050
Benzo(b)fluoranthene	0.95	0.006
Fluorene	0.14	<0.0050
Indeno(1,2,3-cd)pyrene	0.31	<0.0050
Naphthalene	0.27	0.014

BH14-05			
Depth	0.0 - 0.6	1.5 - 2.1	3.8 - 4.4
Acenaphthene	0.12	0.013	<0.0050
1-Methylnaphthalene	3.9	0.22	<0.0050
2-Methylnaphthalene	5.2	0.27	<0.0050
2-and 1-Methylnaphthalene	9.1	0.49	<0.0071
Naphthalene	3.2	0.22	<0.0050
Phenanthrene	2.8	0.55	<0.0050

TP18-13		
Depth	0.15	1.5 - 2.1
Naphthalene	0.16	<0.0050

TP18-11		
Depth	2.0	
1-Methylnaphthalene	0.5	(0.68)
2-Methylnaphthalene	0.55	(0.76)
2-and 1-methyl Naphthalene	1	(1.4)
Naphthalene	0.29	(0.4)

TP02		
Depth	2.0	3.0
Acenaphthene	0.13	<0.05
Anthracene	0.31	<0.05
Fluorene	0.16	<0.05

TP101			
Depth	1.2	3.0	
Naphthalene	0.1	<0.05	

TP18-05	
Depth	0.15
1-Methylnaphthalene	0.34
2-Methylnaphthalene	0.35
2-and 1-Methylnaphthalene	0.69
Naphthalene	0.18

TP18-07	
Depth	0.15
Acenaphthene	0.076
1-Methylnaphthalene	2.5
2-Methylnaphthalene	3.2
2-and 1-methyl Naphthalene	5.7
Naphthalene	1.9
Phenanthrene	1.5

SS18-17	
Depth	0-0.15
Acenaphthene	0.089
Acenaphthylene	2.2
Anthracene	2.8
Benz(a)anthracene	5.5
Benzo(a)pyrene	8.6
Benzo(b)fluoranthene	14
Benzo(g,h,i)perylene	8.4
Benzo(k)fluoranthene	5.1
Chrysene	5.5
Dibenz(a,h)anthracene	2
Fluoranthene	5.4
Fluorene	0.15
Indeno(1,2,3-cd)pyrene	6.3
1-Methylnaphthalene	0.58
2-Methylnaphthalene	0.67
2-and 1-Methylnaphthalene	1.25
Naphthalene	0.53
Phenanthrene	1.1
Pyrene	6.3

SS18-06	
Depth	0.15
Acenaphthylene	0.19
Benz(a)anthracene	0.37
Benzo(a)pyrene	0.44
Benzo(b)fluoranthene	0.89
Dibenz(a,h)anthracene	0.11
Fluoranthene	0.61
Indeno(1,2,3-cd)pyrene	0.4
1-Methylnaphthalene	1.0
2-Methylnaphthalene	1.1
2-and 1-Methylnaphthalene	2.2
Naphthalene	0.66

SS3	
Depth	0.15
Acenaphthene	0.096
1-Methylnaphthalene	5.1
2-Methylnaphthalene	7
2-and 1-Methylnaphthalene	12
Naphthalene	4.7
Phenanthrene	2.9

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PETO MacCALLUM LTD.
- MONITORING WELL
- BOREHOLE
- SAMPLE (CRUSHED ROCK FOR CHEMICAL TESTING)

PINCHIN LTD.
- MONITORING WELL
- BOREHOLE
- TEST PIT

STANTEC
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE

CAMBIUM
- MONITORING WELL
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE
- MOUND

- PARAMETERS TESTED MEET TABLE 9 SCS
- PARAMETERS TESTED EXCEED TABLE 9 SCS
- EXTENT OF IMPACT

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

Table 9 SCS	
Acenaphthene	0.072
Acenaphthylene	0.093
Anthracene	0.22
Benz(a)anthracene	0.36
Benzo(a)pyrene	0.3
Benzo(b)fluoranthene	0.47
Benzo(g,h,i)perylene	0.68
Benzo(k)fluoranthene	0.48
Chrysene	2.8
Dibenz(a,h)anthracene	0.1
Fluoranthene	0.56
Fluorene	0.12
Indeno(1,2,3-cd)pyrene	0.23
1-Methylnaphthalene	0.59
2-Methylnaphthalene	0.59
2-and 1-Methylnaphthalene	0.59
Naphthalene	0.09
Phenanthrene	0.69
Pyrene	1

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

25 0 25 50 75 100 m

1 : 1,250

CAMBIUM
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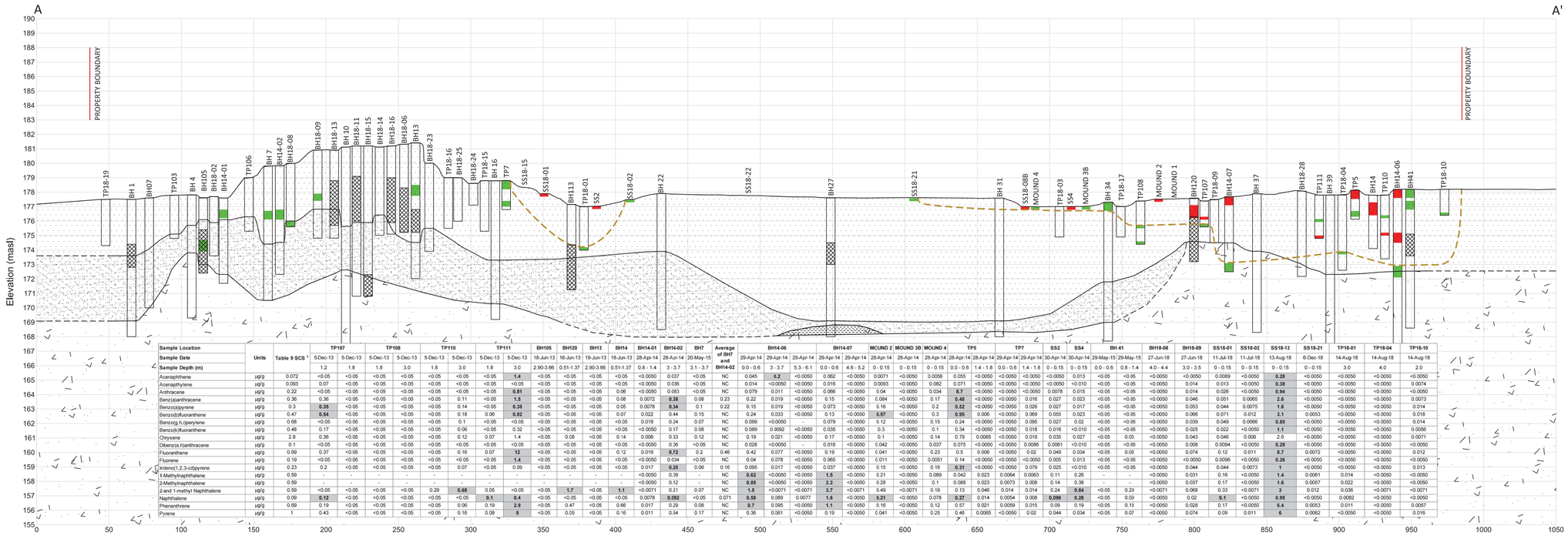
SOIL RESULTS - PAHs

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By:	TLC	Checked By:	NJY
Figure:	14a		

P:\6800's\6820\6820-001 Midland Bay Landing\Graphics\Drawings\ACAD\2019-03 Phase Two Figures.dwg

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

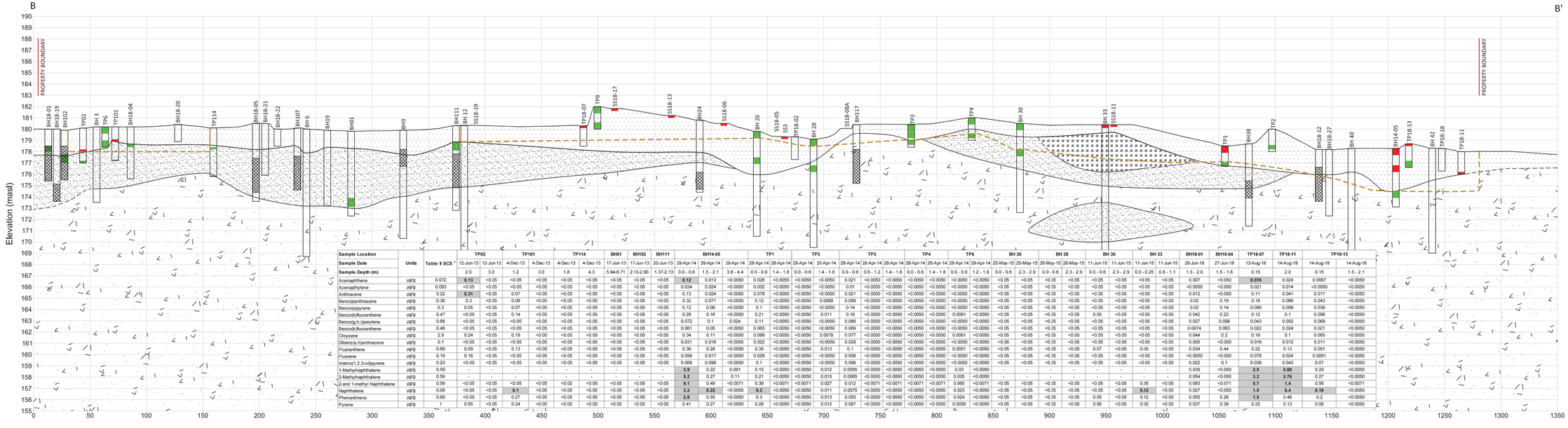
Cross - Section A-A'



Horizontal Scale = 1:1,500
Vertical Scale = 1:150

Sample Location			TP107		TP108		TP110		TP111		BH105	BH120	BH13	BH14	BH14-01	BH14-02	BH7	Average of BH7 and BH14-02	BH14-06			BH14-07		MCUND 2	MOUND 3B	MOUND 4	TP5		TP7		SS2	SS4	BH 41		BH18-08	BH18-09	SS18-01	SS18-02	SS18-13	SS18-21	TP18-01	TP18-04	TP18-10
Sample Date	**Units**	**Table 9 SCS** [1]	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	18-Jun-13	18-Jun-13	19-Jun-13	18-Jun-13	28-Apr-14	28-Apr-14	20-May-15		29-Apr-14	29-Apr-14	29-Apr-14	29-Apr-14	29-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	29-Apr-14	29-Apr-14	30-Apr-14	30-Apr-14	29-May-15	29-May-15	27-Jun-18	27-Jun-18	11-Jul-18	11-Jul-18	13-Aug-18	6-Dec-18	14-Aug-18	14-Aug-18	14-Aug-18
Sample Depth (m)			1.2	1.8	1.8	3.0	1.8	3.0	1.8	3.0	2.90-3.66	0.51-1.37	2.90-3.66	0.51-1.37	0.8 - 1.4	3 - 3.7	3.1 - 3.7		0.0 - 0.6	3 - 3.7	5.3 - 6.1	0.0 - 0.6	4.6 - 5.2	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	0.0 - 0.6	1.4 - 1.8	0.0 - 0.6	1.4 - 1.8	0 - 0.15	0 - 0.15	0.0 - 0.6	0.8 - 1.4	4.0 - 4.4	3.0 - 3.5	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	3.0	4.0	2.0
Acenaphthene	µg/g	0.072	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.4**	<0.05	<0.05	<0.05	<0.05	<0.0050	0.037	<0.05	NC	0.045	**6.2**	<0.0050	0.062	<0.0050	0.0071	<0.0050	0.0056	0.055	<0.0050	<0.0050	<0.0050	0.013	<0.05	<0.05	<0.0050	<0.0050	0.0089	<0.0050	**0.28**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Acenaphthylene	µg/g	0.093	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050	0.036	<0.05	NC	0.014	<0.0050	<0.0050	0.016	<0.0050	0.0093	<0.0050	0.082	0.071	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.0050	<0.0050	0.013	<0.0050	**0.38**	<0.0050	<0.0050	<0.0050	<0.0050	0.0074
Anthracene	µg/g	0.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.81**	<0.05	<0.05	<0.05	<0.05	0.06	<0.0050	0.083	<0.05	NC	0.079	0.011	<0.0050	0.066	<0.0050	0.04	<0.0050	0.034	**8.7**	<0.0050	<0.0050	0.0078	0.015	<0.05	<0.05	<0.0050	0.014	0.026	<0.0050	**0.94**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benz(a)anthracene	µg/g	0.36	0.36	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	**1.5**	<0.05	<0.05	<0.05	0.08	0.0072	**0.38**	0.08	0.23	0.22	0.019	<0.0050	0.15	<0.0050	0.084	<0.0050	0.17	**0.48**	<0.0050	<0.0050	0.016	0.027	0.023	<0.05	<0.05	<0.0050	0.046	0.051	0.0065	**2.6**	<0.0050	<0.0050	<0.0050	0.0073
Benzo(a)pyrene	µg/g	0.3	**0.35**	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	**0.38**	<0.05	<0.05	<0.05	0.05	0.0078	**0.34**	0.1	0.22	0.15	0.019	<0.0050	0.073	<0.0050	0.16	<0.0050	0.2	**0.52**	<0.0050	<0.0050	0.026	0.027	0.017	<0.05	<0.05	<0.0050	0.053	0.044	0.0075	**1.6**	<0.0050	<0.0050	<0.0050	0.014
Benzo(b)fluoranthene	µg/g	0.47	**0.54**	<0.05	<0.05	<0.05	<0.05	0.18	0.06	**0.82**	<0.05	<0.05	<0.05	0.07	0.022	0.44	0.15	NC	0.24	0.033	<0.0050	0.13	<0.0050	**0.87**	<0.0050	0.3	**0.95**	0.006	<0.0050	0.069	0.055	0.023	<0.05	<0.05	<0.0050	0.066	0.071	0.012	**3.1**	0.0053	<0.0050	<0.0050	0.018
Benzo(g,h,i)perylene	µg/g	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.018	0.24	0.07	NC	0.099	<0.0050	-	0.079	<0.0050	0.12	<0.0050	0.15	0.24	<0.0050	<0.0050	0.095	0.027	0.02	<0.05	<0.05	<0.0050	0.039	0.049	0.0066	**0.85**	<0.0050	<0.0050	<0.0050	0.014
Benzo(k)fluoranthene	µg/g	0.48	0.17	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.32	<0.05	<0.05	<0.05	<0.05	<0.0050	0.17	0.06	NC	0.089	0.0092	<0.0050	0.035	<0.0050	0.3	<0.0050	0.1	0.34	<0.0050	<0.0050	0.018	0.016	<0.010	<0.05	<0.05	<0.0050	0.025	0.022	<0.0050	**1.1**	<0.0050	<0.0050	<0.0050	0.0056
Chrysene	µg/g	2.8	0.36	<0.05	<0.05	<0.05	<0.05	0.12	0.07	1.4	<0.05	0.08	<0.05	0.14	0.006	0.33	0.12	NC	0.19	0.021	<0.0050	0.17	<0.0050	0.1	<0.0050	0.14	0.79	0.0065	<0.0050	0.019	0.035	0.027	<0.05	0.05	<0.0050	0.043	0.046	0.006	2.6	<0.0050	<0.0050	<0.0050	0.0071
Dibenz(a,h)anthracene	µg/g	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050	0.36	<0.05	NC	0.028	<0.0050	-	0.016	<0.0050	0.042	<0.0050	0.037	0.075	<0.0050	<0.0050	0.0086	0.0061	<0.010	<0.05	<0.05	<0.0050	0.008	0.0094	<0.0050	**0.29**	<0.0050	<0.0050	<0.0050	<0.0050
Fluoranthene	µg/g	0.69	0.37	<0.05	<0.05	<0.05	<0.05	0.16	0.07	**12**	<0.05	<0.05	<0.05	<0.05	0.012	0.016	**0.72**	0.2	0.46	0.42	0.077	<0.0050	0.19	<0.0050	0.041	<0.0050	0.23	0.5	0.006	<0.0050	0.02	0.049	0.034	<0.05	0.03	<0.0050	0.074	0.12	0.011	**8.7**	0.0072	<0.0050	<0.0050	0.012
Fluorene	µg/g	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.4**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050	0.034	<0.05	NC	0.04	0.078	<0.0050	0.065	<0.0050	0.011	<0.0050	0.0051	0.14	<0.0050	<0.0050	<0.0050	0.005	0.013	<0.05	<0.05	<0.0050	0.044	0.044	0.0073	**0.26**	<0.0050	<0.0050	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.2	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	0.09	<0.05	<0.05	<0.05	<0.05	0.017	**0.28**	0.06	0.16	0.095	0.017	<0.0050	0.037	<0.0050	0.15	<0.0050	0.16	**0.31**	<0.0050	<0.0050	0.079	0.025	<0.010	<0.05	<0.05	<0.0050	0.044	0.044	0.0073	**1**	<0.0050	<0.0050	<0.0050	0.013
1-Methylnaphthalene	µg/g	0.59	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	0.39	-	NC	**0.62**	<0.0050	<0.0050	**1.5**	<0.0050	0.21	<0.0050	0.089	0.042	0.023	0.0064	0.0063	0.11	0.26	-	-	<0.0050	0.031	0.16	<0.0050	**1.4**	0.0061	0.014	<0.0050	<0.0050
2-Methylnaphthalene	µg/g	0.59	-	-	-	-	-	-	-	-	-	-	-	-	<0.0050	0.12	-	NC	**0.85**	<0.0050	<0.0050	**2.2**	<0.0050	0.28	<0.0050	0.1	0.088	0.023	0.0073	0.008	0.14	0.38	-	-	<0.0050	0.037	0.17	<0.0050	**1.6**	0.0057	0.022	<0.0050	<0.0050
2-and 1-methyl Naphthalene	µg/g	0.59	<0.05	<0.05	<0.05	<0.05	<0.05	0.29	**0.68**	0.05	<0.05	<0.05	**1.7**	<0.05	**1.1**	<0.0071	0.21	0.07	NC	**1.5**	<0.0071	<0.0071	**3.7**	<0.0071	0.49	<0.0071	0.19	0.13	0.046	0.014	0.014	0.24	**0.64**	<0.05	0.23	<0.0071	0.068	0.33	<0.0071	**3**	0.012	0.036	<0.0071	<0.0071
Naphthalene	µg/g	0.09	**0.12**	<0.05	<0.05	<0.05	<0.05	<0.05	**0.1**	**0.4**	<0.05	<0.05	<0.05	<0.05	0.0078	**0.092**	<0.05	0.071	**0.58**	0.089	0.0077	**1.6**	<0.0050	**0.21**	<0.0050	0.078	**0.27**	0.014	0.0054	0.008	**0.096**	**0.28**	<0.05	0.09	<0.0050	0.02	**0.1**	<0.0050	**0.95**	<0.0050	0.0082	<0.0050	<0.0050
Phenanthrene	µg/g	0.69	0.19	<0.05	<0.05	<0.05	<0.05	0.06	0.19	**2.9**	<0.05	0.47	<0.05	0.66	0.017	0.29	0.08	NC	**0.7**	0.095	<0.0050	**1.1**	<0.0050	0.16	<0.0050	0.12	0.57	0.021	0.0059	0.015	0.09	0.19	<0.05	0.13	<0.0050	0.028	0.17	<0.0050	**6.4**	0.0053	0.011	<0.0050	0.0057
Pyrene	µg/g	1	0.43	<0.05	<0.05	<0.05	<0.05	0.16	0.08	**8**	<0.05	0.05	<0.05	0.16	0.011	0.54	0.17	NC	0.36	0.061	<0.0050	0.19	<0.0050	0.041	<0.0050	0.25	0.46	0.0065	<0.0050	0.02	0.044	0.034	<0.05	0.07	<0.0050	0.074	0.09	0.011	**6**	0.0062	<0.0050	<0.0050	0.016

Cross - Section B-B'



Horizontal Scale = 1:1,750
Vertical Scale = 1:175

Sample Location			TP02		TP101		TP114		BH01	BH102	BH111	BH14-05		TP1		TP2		TP3			TP4		TP6		BH 25		BH 28		BH 30		BH 33		BH18-01	BH18-04	TP18-07	TP18-11	TP18-13	
Sample Date	**Units**	**Table 9 SCS** [1]	12-Jun-13	12-Jun-13	4-Dec-13	4-Dec-13	4-Dec-13	4-Dec-13	17-Jun-13	17-Jun-13	20-Jun-13	29-Apr-14	29-Apr-14	29-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	29-Apr-14	29-Apr-14	25-May-15	25-May-15	26-May-15	26-May-15	11-Jun-15	11-Jun-15	11-Jun-15	11-Jun-15	26-Jun-18	27-Jun-18	13-Aug-18	14-Aug-18	14-Aug-18	
Sample Depth (m)			2.0	3.0	1.2	3.0	1.8	4.3	5.94-6.71	2.13-2.90	1.37-2.13	0.0 - 0.6	1.5 - 2.1	3.8 - 4.4	0.0 - 0.6	1.4 - 1.8	0.0 - 0.6	1.4 - 1.8	0.0 - 0.6	0.6 - 1.2	1.4 - 1.8	0.0 - 0.6	1.4 - 1.8	0.0 - 0.6	1.2 - 1.8	0.0 - 0.6	2.3 - 2.9	0.0 - 0.6	2.3 - 2.9	0.0 - 0.6	2.3 - 2.9	0.0 - 0.25	0.8 - 1.1	1.5 - 2.0	1.5 - 1.8	0.15	2.0	0.15	1.5 - 2.1	
Acenaphthene	µg/g	0.072	**0.13**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.12**	0.013	<0.0050	0.028	<0.0050	<0.0050	0.021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.007	<0.050	**0.076**	0.024	0.0067	<0.0050	
Acenaphthylene	µg/g	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.034	0.024	<0.0050	0.032	<0.0050	<0.0050	0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050	<0.050	0.021	0.014	<0.0050	<0.0050	
Anthracene	µg/g	0.22	0.07	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	0.024	<0.0050	0.079	<0.0050	<0.0050	0.021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.012	<0.050	0.11	0.041	0.017	<0.0050	
Benz(a)anthracene	µg/g	0.36	0.2	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.32	0.071	<0.0050	0.12	<0.0050	<0.0050	0.0068	0.099	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.19	0.18	0.086	0.043	<0.0050	
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	0.09	<0.0050	0.1	<0.0050	<0.0050	<0.0050	0.14	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.14	0.086	0.056	0.038	<0.0050	
Benzo(b)fluoranthene	µg/g	0.47	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.26	0.16	<0.0050	0.21	<0.0050	<0.0050	0.011	0.16	<0.0050	<0.0050	<0.0050	<0.0050	0.0081	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.042	0.22	0.12	0.1	0.096	<0.0050	
Benzo(g,h,i)perylene	µg/g	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.072	0.1	0.024	0.11	<0.0050	<0.0050	0.086	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.027	0.098	0.043	0.052	0.069	<0.0050	
Benzo(k)fluoranthene	µg/g	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.061	0.05	<0.0050	0.063	<0.0050	<0.0050	0.069	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0074	0.063	0.022	0.024	0.021	<0.0050	
Chrysene	µg/g	2.8	0.24	<0.05	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.34	0.11	<0.0050	0.099	<0.0050	<0.0050	0.0078	0.077	<0.0050	<0.0050	<0.0050	<0.0050	0.0061	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.044	0.2	0.18	0.1	0.065	<0.0050	
Dibenz(a,h)anthracene	µg/g	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.031	0.016	<0.0050	0.022	<0.0050	<0.0050	0.029	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.005	<0.050	0.016	0.012	0.011	<0.0050	
Fluoranthene	µg/g	0.69	0.09	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.36	0.28	<0.0050	0.35	<0.0050	<0.0050	0.013	0.1	<0.0050	<0.0050	<0.0050	<0.0050	0.0051	<0.0050	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	0.05	<0.05	0.034	0.44	0.22	0.13	0.051	<0.0050	
Fluorene	µg/g	0.19	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.099	0.017	<0.0050	0.028	<0.0050	<0.0050	0.008	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050	<0.050	0.078	0.024	0.0061	<0.0050	
Indeno(1,2,3-cd)pyrene	µg/g	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.069	0.099	<0.0050	0.1	<0.0050	<0.0050	0.098	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.022	0.1	0.036	0.043	0.07	<0.0050	
1-Methylnaphthalene	µg/g	0.59	-	-	-	-	-	-	-	-	-	**3.9**	0.22	0.091	0.15	<0.0050	<0.0050	0.012	0.0055	<0.0050	<0.0050	<0.0050	<0.0050	0.03	<0.0050	-	-	-	-	-	-	-	-	0.039	<0.050	**2.5**	**0.68**	0.29	<0.0050	
2-Methylnaphthalene	µg/g	0.59	-	-	-	-	-	-	-	-	-	**5.2**	0.27	0.11	0.21	<0.0050	<0.0050	0.015	0.0065	<0.0050	<0.0050	<0.0050	<0.0050	0.035	<0.0050	-	-	-	-	-	-	-	-	0.054	<0.050	**3.2**	**0.76**	0.27	<0.0050	
2-and 1-methyl Naphthalene	µg/g	0.59	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	**9.1**	0.49	<0.0071	0.36	<0.0071	<0.0071	0.027	0.012	<0.0071	<0.0071	<0.0071	<0.0071	0.065	<0.0071	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.36	<0.05	0.093	<0.071	**5.7**	**1.4**	0.56	<0.0071	
Naphthalene	µg/g	0.09	<0.05	<0.05	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.2**	**0.22**	<0.0050	**0.3**	<0.0050	<0.0050	0.011	0.0075	<0.0050	<0.0050	<0.0050	<0.0050	0.023	<0.0050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.12**	<0.05	0.027	<0.050	**1.9**	**0.4**	**0.16**	<0.0050	
Phenanthrene	µg/g	0.69	<0.05	<0.05	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.8**	0.55	<0.0050	0.3	<0.0050	<0.0050	0.013	0.055	<0.0050	<0.0050	<0.0050	<0.0050	0.024	<0.0050	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	0.12	<0.05	0.055	0.26	**1.5**	0.46	0.2	<0.0050	
Pyrene	µg/g	1	0.85	<0.05	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.41	0.27	<0.0050	0.28	<0.0050	<0.0050	0.012	0.087	<0.0050	<0.0050	<0.0050	<0.0050	0.0056	<0.0050	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.05	<0.05	0.037	0.39	0.25	0.13	0.06	<0.0050	

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

Table 9 SCS	
Acenaphthene	0.072
Acenaphthylene	0.093
Anthracene	0.22
Benz(a)anthracene	0.36
Benzo(a)pyrene	0.3
Benzo(b)fluoranthene	0.47
Benzo(g,h,i)perylene	0.68
Benzo(k)fluoranthene	0.48
Chrysene	2.8
Dibenz(a,h)anthracene	0.1
Fluoranthene	0.56
Fluorene	0.12
Indeno(1,2,3-cd)pyrene	0.23
1-Methylnaphthalene	0.59
2-Methylnaphthalene	0.59
2-and 1-Methylnaphthalene	0.59
Naphthalene	0.09
Phenanthrene	0.69
Pyrene	1

LEGEND

- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Parameters Tested Meet Table 9 Standard
- Parameters Tested Exceed Table 9 Standard
- Well Screen

NOTE:
SS AND MOUND SAMPLES WITH NO RESULTS SHOWN WERE NOT ANALYZED FOR THE PARAMETER(S) REPORTED.

P.O. Box 325, 52 Hunter Street East
Peterborough, Ontario, K9H 1G5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

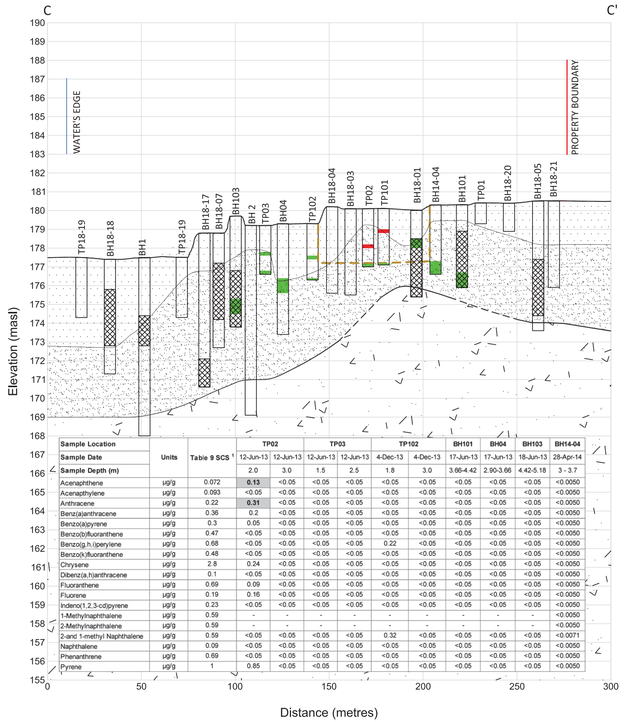
CROSS - SECTIONS A-A' AND B-B'
CROSS - GRADIENT PAHs IN SOIL

Project No.: 6820-001	Date: March 2019
	Rev.:
Horizontal Scale: As Shown	Vertical Scale: As Shown
Drawn By: TLC	Checked By: NJY

Figure: 14b

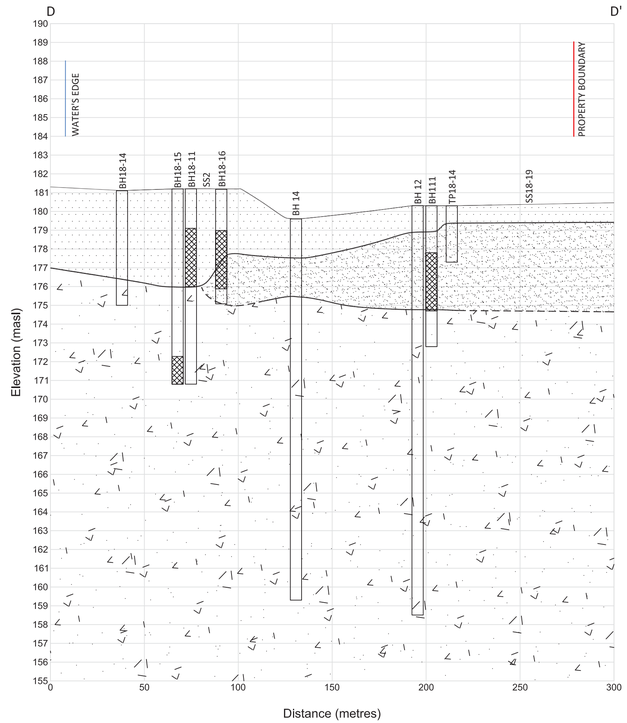
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

Cross - Section C-C'

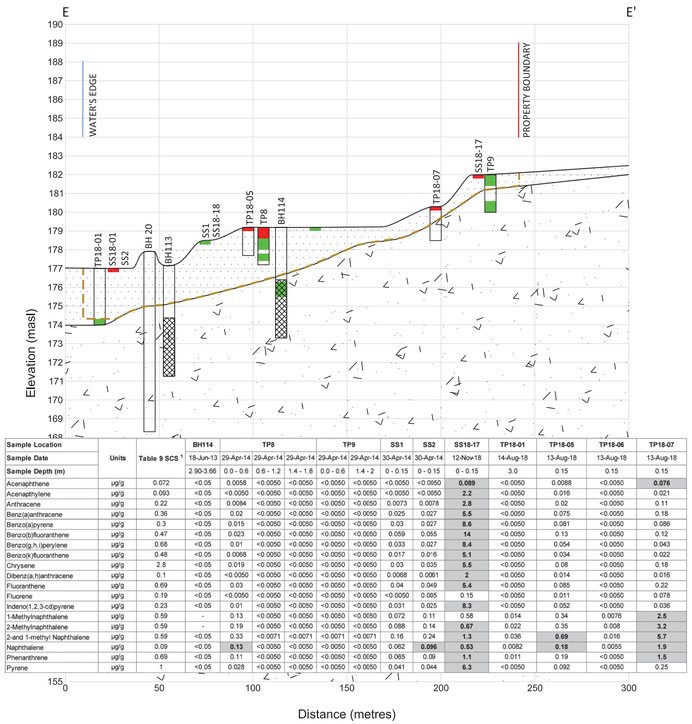


Sample Location			TP02		TP03		TP102		BH101	BH04	BH103	BH14-04
Sample Date	Units	Table 9 SCS [1]	12-Jun-13	12-Jun-13	12-Jun-13	12-Jun-13	4-Dec-13	4-Dec-13	17-Jun-13	17-Jun-13	18-Jun-13	28-Apr-14
Sample Depth (m)			2.0	3.0	1.5	2.5	1.8	3.0	3.66-4.42	2.90-3.66	4.42-5.18	3 - 3.7
Acenaphthene	µg/g	0.072	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Acenaphthylene	µg/g	0.093	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05	<0.0050
Anthracene	µg/g	0.22	0.31	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Benz(a)anthracene	µg/g	0.36	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Benzo(b)fluoranthene	µg/g	0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Benzo(g,h,i)perylene	µg/g	0.68	<0.05	<0.05	<0.05	<0.05	0.22	<0.05	<0.05	<0.05	<0.05	<0.0050
Benzo(k)fluoranthene	µg/g	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Chrysene	µg/g	2.8	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Dibenz(a,h)anthracene	µg/g	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Fluoranthene	µg/g	0.69	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Fluorene	µg/g	0.19	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Indeno(1,2,3-cd)pyrene	µg/g	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
1-Methylnaphthalene	µg/g	0.59	-	-	-	-	-	-	-	-	-	<0.0050
2-Methylnaphthalene	µg/g	0.59	-	-	-	-	-	-	-	-	-	<0.0050
2-and 1-methyl Naphthalene	µg/g	0.59	<0.05	<0.05	<0.05	<0.05	0.32	<0.05	<0.05	<0.05	<0.05	<0.0071
Naphthalene	µg/g	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Phenanthrene	µg/g	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050
Pyrene	µg/g	1	0.85	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0050

Cross - Section D-D'

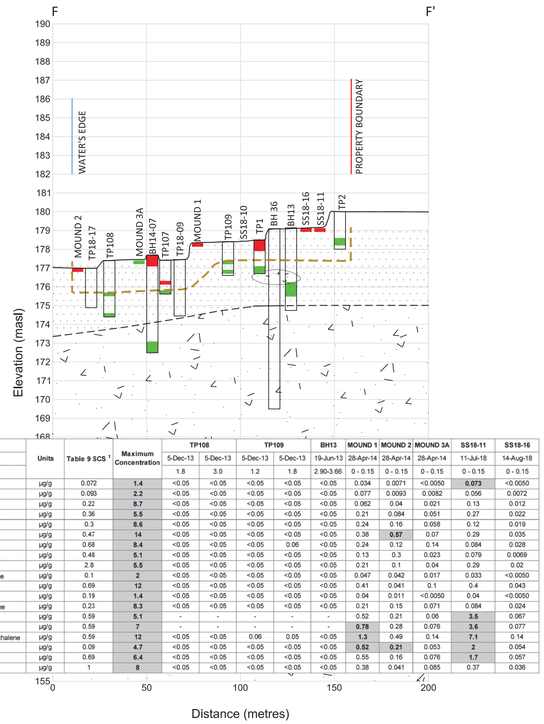


Cross - Section E-E'



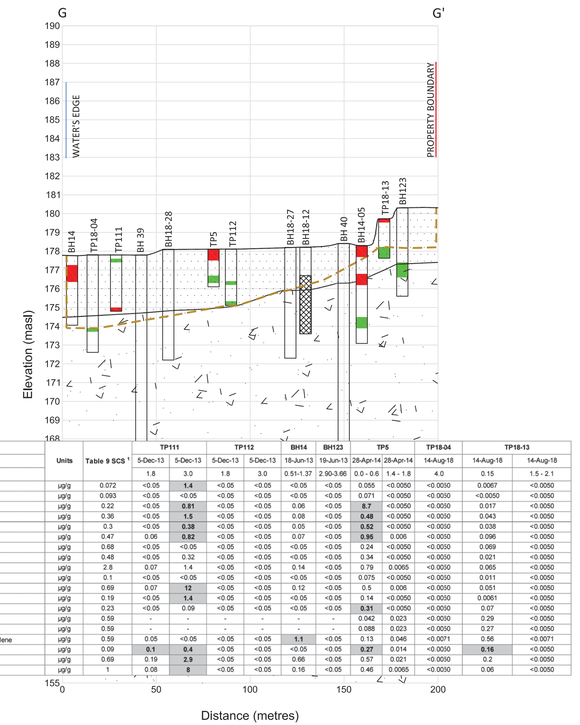
Sample Location			BH114	TP8			TP9		SS1	SS2	SS18-17	TP18-01	TP18-05	TP18-06	TP18-07
Sample Date	Units	Table 9 SCS [1]	18-Jun-13	29-Apr-14	29-Apr-14	29-Apr-14	29-Apr-14	29-Apr-14	30-Apr-14	30-Apr-14	12-Nov-18	14-Aug-18	13-Aug-18	13-Aug-18	13-Aug-18
Sample Depth (m)			2.90-3.66	0.0 - 0.6	0.6 - 1.2	1.4 - 1.8	0.0 - 0.6	1.4 - 2	0 - 0.15	0 - 0.15	0 - 0.15	3.0	0.15	0.15	0.15
Acenaphthene	µg/g	0.072	<0.05	0.0058	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.089	<0.0050	0.0088	<0.0050	0.076
Acenaphthylene	µg/g	0.093	<0.05	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	2.2	<0.0050	0.016	<0.0050	0.021
Anthracene	µg/g	0.22	<0.05	0.0084	<0.0050	<0.0050	<0.0050	<0.0050	0.0073	0.0078	2.8	<0.0050	0.02	<0.0050	0.11
Benz(a)anthracene	µg/g	0.36	<0.05	0.02	<0.0050	<0.0050	<0.0050	<0.0050	0.025	0.027	5.5	<0.0050	0.075	<0.0050	0.18
Benzo(a)pyrene	µg/g	0.3	<0.05	0.015	<0.0050	<0.0050	<0.0050	<0.0050	0.03	0.027	8.6	<0.0050	0.081	<0.0050	0.086
Benzo(b)fluoranthene	µg/g	0.47	<0.05	0.023	<0.0050	<0.0050	<0.0050	<0.0050	0.059	0.055	14	<0.0050	0.13	<0.0050	0.12
Benzo(g,h,i)perylene	µg/g	0.68	<0.05	0.01	<0.0050	<0.0050	<0.0050	<0.0050	0.033	0.027	8.4	<0.0050	0.054	<0.0050	0.043
Benzo(k)fluoranthene	µg/g	0.48	<0.05	0.0068	<0.0050	<0.0050	<0.0050	<0.0050	0.017	0.016	5.1	<0.0050	0.034	<0.0050	0.022
Chrysene	µg/g	2.8	<0.05	0.019	<0.0050	<0.0050	<0.0050	<0.0050	0.03	0.035	5.5	<0.0050	0.08	<0.0050	0.18
Dibenz(a,h)anthracene	µg/g	0.1	<0.05	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0068	0.0081	2	<0.0050	0.014	<0.0050	0.016
Fluoranthene	µg/g	0.69	<0.05	0.03	<0.0050	<0.0050	<0.0050	<0.0050	0.04	0.049	5.4	<0.0050	0.085	<0.0050	0.22
Fluorene	µg/g	0.19	<0.05	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.005	0.15	<0.0050	0.011	<0.0050	0.078
Indeno(1,2,3-cd)pyrene	µg/g	0.23	<0.05	0.01	<0.0050	<0.0050	<0.0050	<0.0050	0.031	0.025	8.3	<0.0050	0.052	<0.0050	0.036
1-Methylnaphthalene	µg/g	0.59	-	0.13	<0.0050	<0.0050	<0.0050	<0.0050	0.072	0.11	0.58	0.014	0.34	0.0076	2.5
2-Methylnaphthalene	µg/g	0.59	-	0.19	<0.0050	<0.0050	<0.0050	<0.0050	0.088	0.14	0.67	0.022	0.35	0.008	3.2
2-and 1-methyl Naphthalene	µg/g	0.59	<0.05	0.33	<0.0071	<0.0071	<0.0071	<0.0071	0.16	0.24	1.3	0.036	0.69	0.016	5.7
Naphthalene	µg/g	0.09	<0.05	0.13	<0.0050	<0.0050	<0.0050	<0.0050	0.062	0.095	0.53	0.0082	0.18	0.0055	1.9
Phenanthrene	µg/g	0.69	<0.05	0.11	<0.0050	<0.0050	<0.0050	<0.0050	0.065	0.09	1.1	0.011	0.19	<0.0050	1.5
Pyrene	µg/g	1	<0.05	0.028	<0.0050	<0.0050	<0.0050	0.041	0.044	6.3	<0.0050	0.092	<0.0050	<0.0050	0.25

Cross - Section F-F'



Sample Location				TP108		TP109		BH13	MOUND 1	MOUND 2	MOUND 3A	SS18-11	SS18-16
Sample Date	Units	Table 9 SCS [1]	Maximum Concentration	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	19-Jun-13	28-Apr-14	28-Apr-14	28-Apr-14	11-Jul-18	14-Aug-18
Sample Depth (m)				1.8	3.0	1.2	1.8	2.90-3.66	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15
Acenaphthene	µg/g	0.072	1.4	<0.05	<0.05	<0.05	<0.05	<0.05	0.034	0.0071	<0.0050	0.073	<0.0050
Acenaphthylene	µg/g	0.093	2.2	<0.05	<0.05	<0.05	<0.05	<0.05	0.077	0.0093	0.0082	0.056	0.0072
Anthracene	µg/g	0.22	8.7	<0.05	<0.05	<0.05	<0.05	<0.05	0.062	0.04	0.021	0.13	0.012
Benz(a)anthracene	µg/g	0.36	5.5	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	0.084	0.051	0.27	0.022
Benzo(a)pyrene	µg/g	0.3	8.6	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	0.16	0.058	0.12	0.019
Benzo(b)fluoranthene	µg/g	0.47	14	<0.05	<0.05	<0.05	<0.05	<0.05	0.38	0.57	0.07	0.29	0.035
Benzo(g,h,i)perylene	µg/g	0.68	8.4	<0.05	<0.05	<0.05	0.06	<0.05	0.24	0.12	0.14	0.084	0.028
Benzo(k)fluoranthene	µg/g	0.48	5.1	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	0.3	0.023	0.079	0.0069
Chrysene	µg/g	2.8	5.5	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	0.1	0.04	0.29	0.02
Dibenz(a,h)anthracene	µg/g	0.1	2	<0.05	<0.05	<0.05	<0.05	<0.05	0.047	0.042	0.017	0.033	<0.0050
Fluoranthene	µg/g	0.69	12	<0.05	<0.05	<0.05	<0.05	<0.05	0.41	0.041	0.1	0.4	0.043
Fluorene	µg/g	0.19	1.4	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	0.011	<0.0050	0.04	<0.0050
Indeno(1,2,3-cd)pyrene	µg/g	0.23	8.3	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	0.15	0.071	0.094	0.024
1-Methylnaphthalene	µg/g	0.59	5.1	-	-	-	-	-	0.52	0.21	0.06	3.5	0.067
2-Methylnaphthalene	µg/g	0.59	7	-	-	-	-	-	0.78	0.28	0.076	3.6	0.077
2-and 1-methyl Naphthalene	µg/g	0.59	12	<0.05	<0.05	0.06	0.05	<0.05	1.3	0.49	0.14	7.1	0.14
Naphthalene	µg/g	0.09	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	0.52	0.21	0.053	2	0.054
Phenanthrene	µg/g	0.69	6.4	<0.05	<0.05	<0.05	<0.05	<0.05	0.55	0.16	0.076	1.7	0.057
Pyrene	µg/g	1	8	<0.05	<0.05	<0.05	<0.05	<0.05	0.38	0.041	0.085	0.37	0.036

Cross - Section G-G'



Sample Location			TP111		TP112		BH14	BH123	TP5	TP18-04	TP18-13	
Sample Date	Units	Table 9 SCS [1]	5-Dec-13	5-Dec-13	5-Dec-13	5-Dec-13	18-Jun-13	19-Jun-13	28-Apr-14	28-Apr-14	14-Aug-18	14-Aug-18	14-Aug-18
Sample Depth (m)			1.8	3.0	1.8	3.0	0.51-1.37	2.90-3.66	0.0 - 0.6	1.4 - 1.8	4.0	0.15	1.5 - 2.1
Acenaphthene	µg/g	0.072	<0.05	1.4	<0.05	<0.05	<0.05	<0.05	0.055	<0.0050	<0.0050	0.0067	<0.0050
Acenaphthylene	µg/g	0.093	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.071	<0.0050	<0.0050	<0.0050	<0.0050
Anthracene	µg/g	0.22	<0.05	0.81	<0.05	<0.05	0.06	<0.05	0.7	<0.0050	<0.0050	0.017	<0.0050
Benz(a)anthracene	µg/g	0.36	<0.05	1.5	<0.05	<0.05	0.08	<0.05	0.48	<0.0050	<0.0050	0.043	<0.0050
Benzo(a)pyrene	µg/g	0.3	<0.05	0.38	<0.05	<0.05	0.05	<0.05	0.52	<0.0050	<0.0050	0.038	<0.0050
Benzo(b)fluoranthene	µg/g	0.47	0.06	0.82	<0.05	<0.05	0.07	<0.05	0.95	0.008	<0.0050	0.096	<0.0050
Benzo(g,h,i)perylene	µg/g	0.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	<0.0050	<0.0050	0.069	<0.0050
Benzo(k)fluoranthene	µg/g	0.48	<0.05	0.32	<0.05	<0.05	<0.05	<0.05	0.34	<0.0050	<0.0050	0.021	<0.0050
Chrysene	µg/g	2.8	0.07	1.4	<0.05	<0.05	0.14	<0.05	0.79	0.0065	<0.0050	0.065	<0.0050
Dibenz(a,h)anthracene	µg/g	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.075	<0.0050	<0.0050	0.011	<0.0050
Fluoranthene	µg/g	0.69	0.07	12	<0.05	<0.05	0.12	<0.05	0.5	0.006	<0.0050	0.051	<0.0050
Fluorene	µg/g	0.19	<0.05	1.4	<0.05	<0.05	<0.05	<0.05	0.14	<0.0050	<0.0050	0.0061	<0.0050
Indeno(1,2,3-cd)pyrene	µg/g	0.23	<0.05	0.09	<0.05	<0.05	<0.05	<0.05	0.31	<0.0050	<0.0050	0.07	<0.0050
1-Methylnaphthalene	µg/g	0.59	-	-	-	-	-	-	0.042	0.023	<0.0050	0.29	<0.0050
2-Methylnaphthalene	µg/g	0.59	-	-	-	-	-	-	0.088	0.023	<0.0050	0.27	<0.0050
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	1.1	<0.05	0.13	0.046	<0.0071	0.56	<0.0071
Naphthalene	µg/g	0.09	0.1	0.4	<0.05	<0.05	<0.05	<0.05	0.27	0.014	<0.0050	0.16	<0.0050
Phenanthrene	µg/g	0.69	0.19	2.9	<0.05	<0.05	0.66	<0.05	0.57	0.021	<0.0050	0.2	<0.0050
Pyrene	µg/g	1	0.08	8	<0.05	<0.05	0.16	<0.05	0.46	0.0065	<0.0050	0.06	<0.0050

LEGEND

- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Parameters Tested Meet Table 9 Standard
- Parameters Tested Exceed Table 9 Standard
- Well Screen

NOTE:
SS AND MOUND SAMPLES WITH NO RESULTS SHOWN WERE NOT ANALYZED FOR THE PARAMETER(S) REPORTED.

Table 9 SCS	
Acenaphthene	0.072
Acenaphthylene	0.093
Anthracene	0.22
Benz(a)anthracene	0.36
Benzo(a)pyrene	0.3
Benzo(b)fluoranthene	0.47
Benzo(g,h,i)perylene	0.68
Benzo(k)fluoranthene	0.48
Chrysene	2.8
Dibenz(a,h)anthracene	0.1
Fluoranthene	0.56
Fluorene	0.12
Indeno(1,2,3-cd)pyrene	0.23
1-Methylnaphthalene	0.59
2-Methylnaphthalene	0.59
2-and 1-Methylnaphthalene	0.59
Naphthalene	0.09
Phenanthrene	0.69
Pyrene	1

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

CAMBIUM
P.O. Box 325, 52 Hunter Street East
Peterborough, Ontario, K9H 1G5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

CROSS - SECTIONS C-C' TO G-G' ALONG - GRADIENT PAHs IN SOIL

Project No.: 6820-001	Date: March 2019	Rev.:
Horizontal Scale: 1:1,500	Vertical Scale: 1:150	
Drawn By: TLC	Checked By: NJY	Figure: 14c

P:\6800s-6899s\6820-00_Midland Bay Landing\Graphics\Drawings\CAD\2019-03-13 Phase Two Figures.dwg

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

MIDLAND BAY OF GEORGIAN BAY

Former 420 Bayshore Drive

Former 288 Bayshore Drive

Former 475 Bayshore Drive

Bayshore Drive

William Street

BH18-09		
Depth	3.0 - 3.5	3.5 - 4.1
Antimony	1.4 (0.75)	<0.2
Lead	510 (51)	1.8
Molybdenum	3.6 (2.9)	<0.5

BH18-06		
Depth	1.5 - 1.8	
Molybdenum	6.8	

TP18-15	
Depth	3.5
Beryllium	1.1 (3.2)
Cadmium	0.14 (1.3)
Cobalt	8.5 (48)
Nickel	22 (84)
Uranium	0.82 (3.1)

BH 16		
Depth	0.0 -0.6	2.3 - 2.9
Antimony	<0.8	1.8

SS2	
Depth	0 - 0.15
Antimony	1.8
Copper	170

BH 20		
Depth	0.0 - 0.6	2.3 - 2.9
Antimony	2	<0.8
Arsenic	9	27

BH 34	
Depth	0.0 - 0.6
Arsenic	68

MOUND 2	
Depth	0 - 0.15
Arsenic	29
Selenium	1.6

MOUND 1	
Depth	0 - 0.15
Cyanide	0.07

BH14-07		
Depth	0.0 - 0.6	
Arsenic	46	
Selenium	1.7	

BH14-02	
Depth	3.0 - 3.7
Antimony	1.7
Lead	330

BH 7	
Depth	0.0 - 0.6
Antimony	2.3

TP106		
Depth	1.8	3.0
Antimony	10	<0.8
Barium	69	222
Lead	241	9

BH105	
Depth	2.90 - 3.66
Barium	265

TP103		
Depth	1.8	3.0
Antimony	3.1	<0.8
Lead	163	2

TP18-19	
Depth	0.6 - 1.2
Antimony	16
Barium	270
Cadmium	1.8
Copper	280
Lead	810
Molybdenum	2.8
Silver	1.2
Zinc	710

BH18-07	
Depth	0.6 - 1.1
Antimony	13
Barium	830
Copper	270
Lead	6800
Mercury	1.4
Molybdenum	3.1
Zinc	1300

TP02		
Depth	2.0	3.0
Barium	390	87

TP101		
Depth	1.2	3.0
Antimony	5.4	<0.8
Barium	1470	53
Lead	5630	21
Zinc	968	21

BH18-08	
Depth	4.0 - 4.4
Barium	230

SS1	
Depth	0 - 0.15
Antimony	88
Copper	130

SS18-13	
Depth	0.6 - 1.2
Arsenic	110
Molybdenum	2.4
Selenium	9.2

SS18-06	
Depth	0 - 0.15
Antimony	1.5
Arsenic	96
Selenium	3.5

SS3	
Depth	0 - 0.15
Selenium	2.1

25 0 25 50 75 100 m

1 : 1,250

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PETO MacCALLUM LTD.
- MONITORING WELL
- BOREHOLE
- SAMPLE (CRUSHED ROCK FOR CHEMICAL TESTING)

PINCHIN LTD.
- MONITORING WELL
- BOREHOLE
- TEST PIT

STANTEC
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE

CAMBIUM
- MONITORING WELL
- BOREHOLE
- TEST PIT
- SURFICIAL SOIL SAMPLE
- MOUND

- PARAMETERS TESTED MEET TABLE 9 SCS
- PARAMETERS TESTED EXCEED TABLE 9 SCS
- EXTENT OF IMPACT

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

Table 9 SCS	
Antimony	1.3
Arsenic	18
Barium	220
Cadmium	1.2
Cobalt	22
Copper	92
Cyanide	0.051
Lead	120
Mercury	0.27
Molybdenum	2
Nickel	82
Selenium	1.5
Silver	0.5
Zinc	290

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

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www.cambium-inc.com

SOIL RESULTS - METALS

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By: TLC	Checked By: NJY	Figure:	15a

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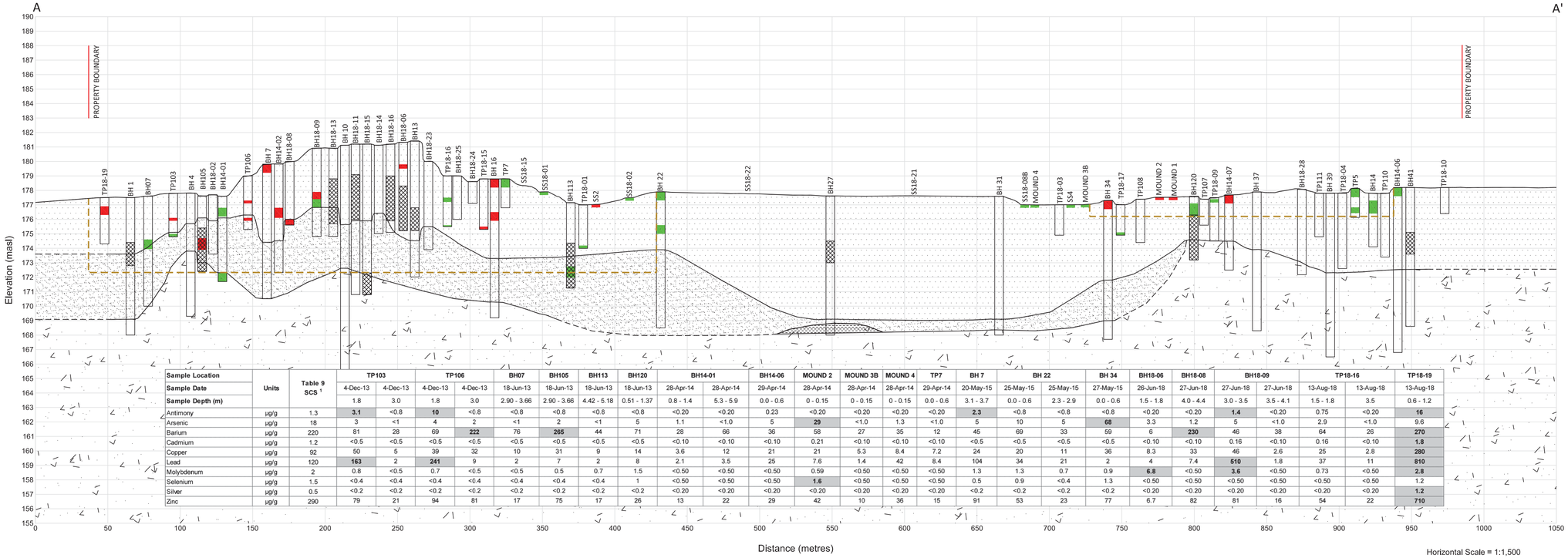
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

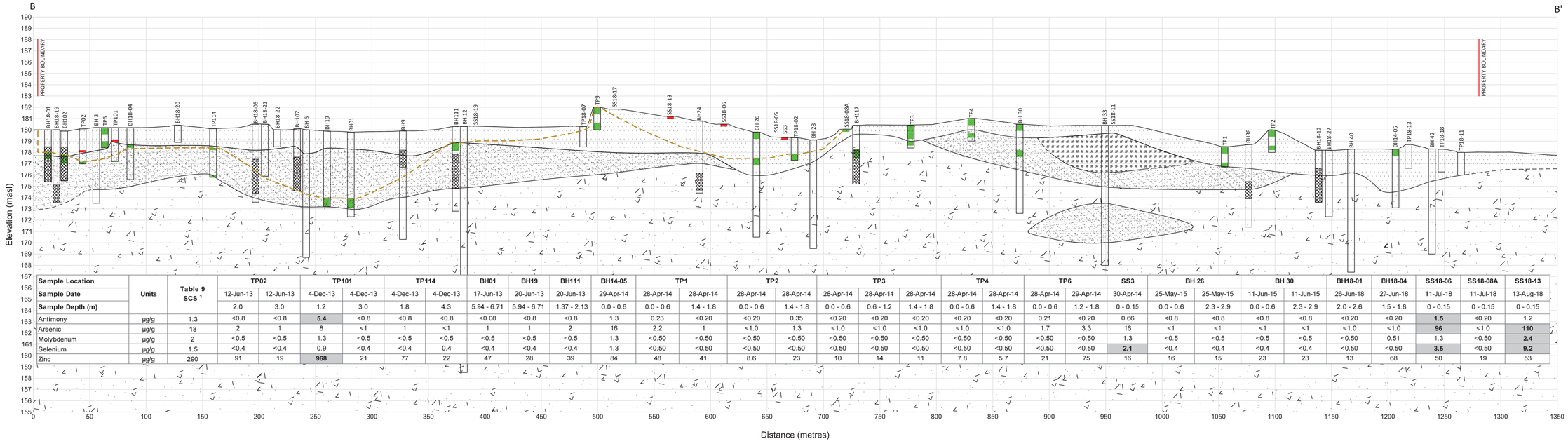
Cross - Section A-A'



Sample Location	Units	Table 9 SCS [1]	TP103		TP106		BH07	BH105	BH113	BH120	BH14-01		BH14-06	MOUND 2	MOUND 3B	MOUND 4	TP7	BH 7	BH 22		BH 34	BH18-06	BH18-08	BH18-09		TP18-16		TP18-19
Sample Date			4-Dec-13	4-Dec-13	4-Dec-13	4-Dec-13	18-Jun-13	18-Jun-13	18-Jun-13	18-Jun-13	28-Apr-14	28-Apr-14	29-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	29-Apr-14	20-May-15	25-May-15	25-May-15	27-May-15	26-Jun-18	27-Jun-18	27-Jun-18	27-Jun-18	13-Aug-18	13-Aug-18	13-Aug-18
Sample Depth (m)			1.8	3.0	1.8	3.0	2.90 - 3.66	2.90 - 3.66	4.42 - 5.18	0.51 - 1.37	0.8 - 1.4	5.3 - 5.9	0.0 - 0.6	0 - 0.15	0 - 0.15	0 - 0.15	0.0 - 0.6	3.1 - 3.7	0.0 - 0.6	2.3 - 2.9	0.0 - 0.6	1.5 - 1.8	4.0 - 4.4	3.0 - 3.5	3.5 - 4.1	1.5 - 1.8	3.5	0.6 - 1.2
Antimony	µg/g	1.3	**3.1**	<0.8	**10**	<0.8	<0.8	<0.8	<0.8	<0.8	<0.20	<0.20	0.23	<0.20	<0.20	<0.20	<0.20	**2.3**	<0.8	<0.8	<0.8	<0.20	<0.20	**1.4**	<0.20	0.75	<0.20	**16**
Arsenic	µg/g	18	3	<1	4	2	<1	2	<1	5	1.1	<1.0	5	**29**	<1.0	1.3	<1.0	5	10	5	**68**	3.3	1.2	5	<1.0	2.9	<1.0	9.6
Barium	µg/g	220	81	28	69	**222**	76	**265**	**44**	71	28	66	36	58	27	35	12	45	69	33	59	6	**230**	46	38	64	26	**270**
Cadmium	µg/g	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10	0.21	<0.10	<0.10	<0.10	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	0.16	<0.10	0.16	<0.10	**1.8**
Copper	µg/g	92	50	5	39	32	10	31	9	14	3.6	12	21	21	5.3	8.4	7.2	24	20	11	36	8.3	33	46	2.6	25	2.8	**280**
Lead	µg/g	120	**163**	2	**241**	9	2	7	2	8	2.1	3.5	25	7.6	1.4	42	8.4	104	34	21	2	4	7.4	**510**	1.8	37	11	**810**
Molybdenum	µg/g	2	0.8	<0.5	0.7	<0.5	<0.5	0.5	0.7	1.5	<0.50	<0.50	<0.50	0.59	<0.50	<0.50	<0.50	1.3	1.3	0.7	0.9	**6.8**	<0.50	**3.6**	<0.50	0.73	<0.50	**2.8**
Selenium	µg/g	1.5	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	1	<0.50	<0.50	<0.50	**1.6**	<0.50	<0.50	<0.50	0.5	0.9	<0.4	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2
Silver	µg/g	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	**1.2**
Zinc	µg/g	290	79	21	94	81	17	75	17	26	13	22	29	42	10	36	15	91	53	23	77	6.7	82	81	16	54	22	**710**

Horizontal Scale = 1:1,500
Vertical Scale = 1:150

Cross - Section B-B'



Sample Location	Units	Table 9 SCS [1]	TP02		TP101		TP114		BH01	BH19	BH111	BH14-05	TP1		TP2		TP3			TP4		TP6		SS3	BH 26		BH 30		BH18-01	BH18-04	SS18-06	SS18-08A	SS18-13
Sample Date			12-Jun-13	12-Jun-13	4-Dec-13	4-Dec-13	4-Dec-13	4-Dec-13	17-Jun-13	20-Jun-13	20-Jun-13	29-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	28-Apr-14	29-Apr-14	30-Apr-14	25-May-15	25-May-15	11-Jun-15	11-Jun-15	26-Jun-18	27-Jun-18	11-Jul-18	11-Jul-18	13-Aug-18
Sample Depth (m)			2.0	3.0	1.2	3.0	1.8	4.3	5.94 - 6.71	5.94 - 6.71	1.37 - 2.13	0.0 - 0.6	0.0 - 0.6	1.4 - 1.8	0.0 - 0.6	1.4 - 1.8	0.0 - 0.6	0.6 - 1.2	1.4 - 1.8	0.0 - 0.6	1.4 - 1.8	0.0 - 0.6	1.2 - 1.8	0 - 0.15	0.0 - 0.6	2.3 - 2.9	0.0 - 0.6	2.3 - 2.9	2.0 - 2.6	1.5 - 1.8	0 - 0.15	0 - 0.15	0 - 0.15
Antimony	µg/g	1.3	<0.8	<0.8	**5.4**	<0.8	<0.8	<0.8	<0.08	<0.8	<0.8	1.3	0.23	<0.20	<0.20	0.35	<0.20	<0.20	<0.20	<0.20	<0.20	0.21	<0.20	0.66	<0.8	<0.8	<0.8	<0.8	<0.20	<0.20	**1.5**	<0.20	1.2
Arsenic	µg/g	18	2	1	8	<1	1	<1	1	1	2	16	2.2	1	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	3.3	16	<1	<1	<1	<1	<1.0	<1.0	**96**	<1.0	**110**
Molybdenum	µg/g	2	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	<0.5	<0.5	<0.5	<0.5	<0.50	0.51	1.3	<0.50	**2.4**
Selenium	µg/g	1.5	<0.4	<0.4	0.9	<0.4	<0.4	0.4	<0.4	<0.4	<0.4	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**2.1**	<0.4	<0.4	<0.4	<0.4	<0.50	<0.50	**3.5**	<0.50	**9.2**
Zinc	µg/g	290	91	19	**968**	21	77	22	47	28	39	84	48	41	8.6	23	10	14	11	7.8	5.7	21	75	16	16	15	23	23	13	68	50	19	53

Horizontal Scale = 1:1,750
Vertical Scale = 1:175

LEGEND

- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Parameters Tested Meet Table 9 Standard
- Parameters Tested Exceed Table 9 Standard
- Well Screen

NOTE:
SS AND MOUND SAMPLES WITH NO RESULTS SHOWN WERE NOT ANALYZED FOR THE PARAMETER(S) REPORTED.

Table 9 SCS	
Antimony	1.3
Arsenic	18
Barium	220
Cadmium	1.2
Cobalt	22
Copper	92
Cyanide	0.051
Lead	120
Mercury	0.27
Molybdenum	2
Nickel	82
Selenium	1.5
Silver	0.5
Zinc	290

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

CAMBIUM
P.O. Box 325, 52 Hunter Street East
Peterborough, Ontario, K9H 1G5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

CROSS - SECTIONS A-A' AND B-B'
CROSS - GRADIENT METALS IN SOIL

Project No.: 6820-001	Date: March 2019
	Rev.:
Horizontal Scale: As Shown	Vertical Scale: As Shown
Drawn By: TLC	Checked By: NJY
Figure: 15b	

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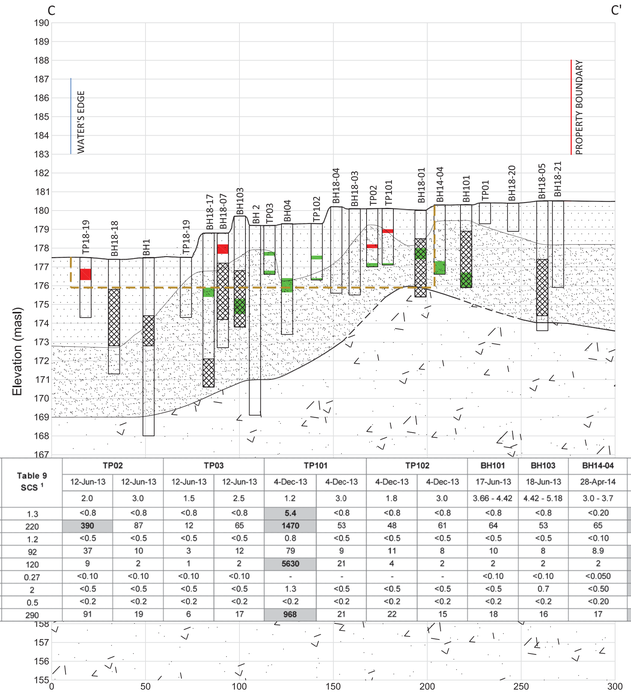
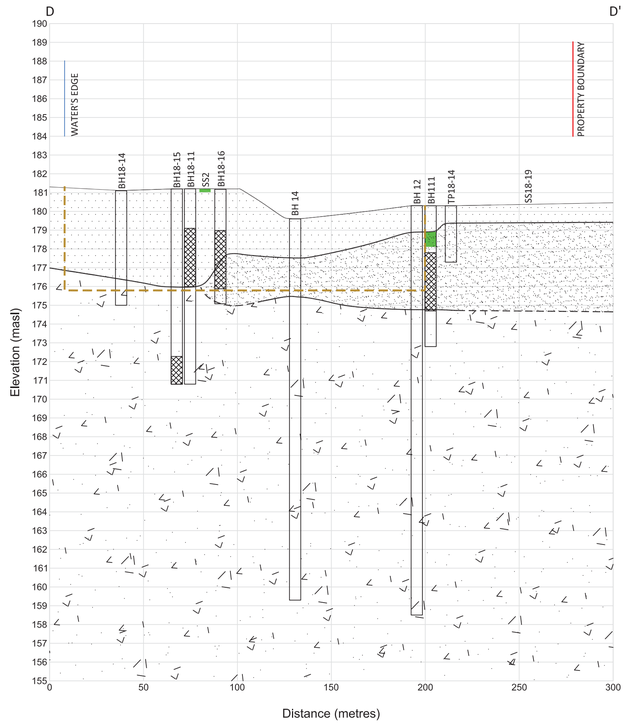
Cross - Section C-C'

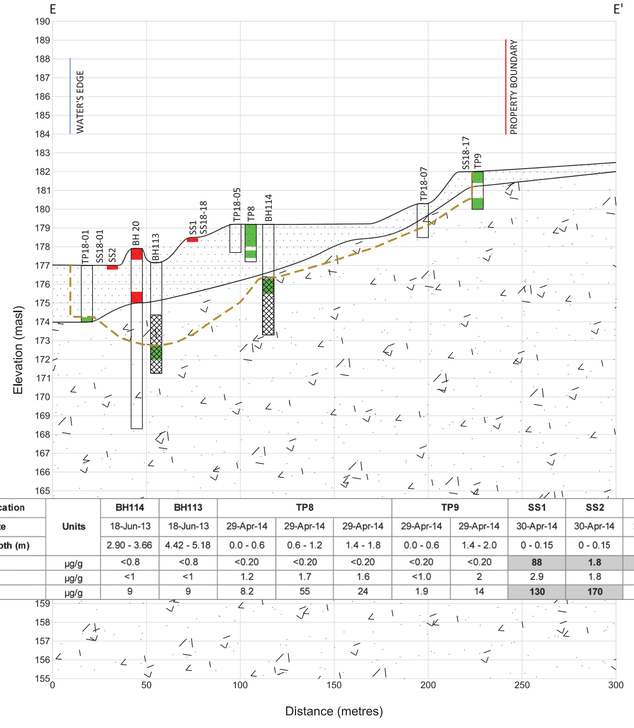


Sample Location	Units	Table 9 SCS [1]	TP02		TP03		TP101		TP102		BH101	BH103	BH14-04	BH18-07	BH18-17	TP18-19
Sample Date			12-Jun-13	12-Jun-13	12-Jun-13	12-Jun-13	4-Dec-13	4-Dec-13	4-Dec-13	4-Dec-13	17-Jun-13	18-Jun-13	28-Apr-14	26-Jun-18	12-Nov-18	13-Aug-18
Sample Depth (m)			2.0	3.0	1.5	2.5	1.2	3.0	1.8	3.0	3.66 - 4.42	4.42 - 5.18	3.0 - 3.7	0.6 - 1.1	2.9 -3.4	0.6 - 1.2
Antimony	µg/g	1.3	<0.8	<0.8	<0.8	<0.8	**5.4**	<0.8	<0.8	<0.8	<0.8	<0.8	<0.20	**13**	<0.20	**16**
Barium	µg/g	220	**390**	87	12	65	**1470**	53	48	61	64	53	65	**830**	120	**270**
Cadmium	µg/g	1.2	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	1.2	<0.10	**1.8**
Copper	µg/g	92	37	10	3	12	79	9	11	8	10	8	8.9	**270**	10	**280**
Lead	µg/g	120	9	2	1	2	**5630**	21	4	2	2	2	2	**6800**	3	**810**
Mercury	µg/g	0.27	<0.10	<0.10	<0.10	<0.10	-	-	-	-	<0.10	<0.10	<0.050	**1.4**	<0.050	-
Molybdenum	µg/g	2	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	0.7	<0.50	**3.1**	<0.50	**2.8**
Silver	µg/g	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	0.37	<0.20	**1.2**
Zinc	µg/g	290	91	19	6	17	**968**	21	22	15	18	16	17	**1300**	26	**710**

Cross - Section D-D'

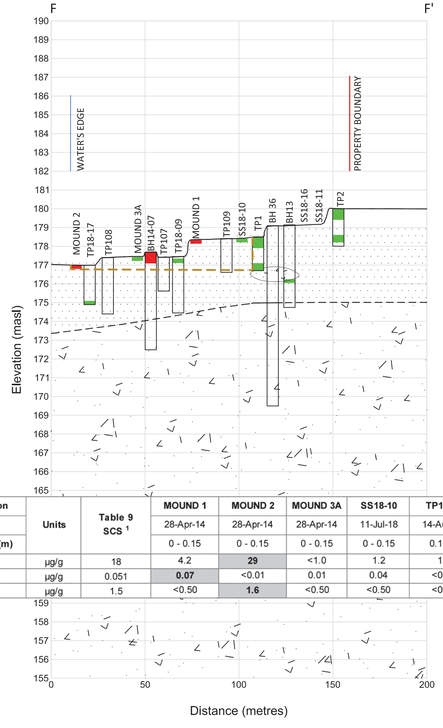


Cross - Section E-E'



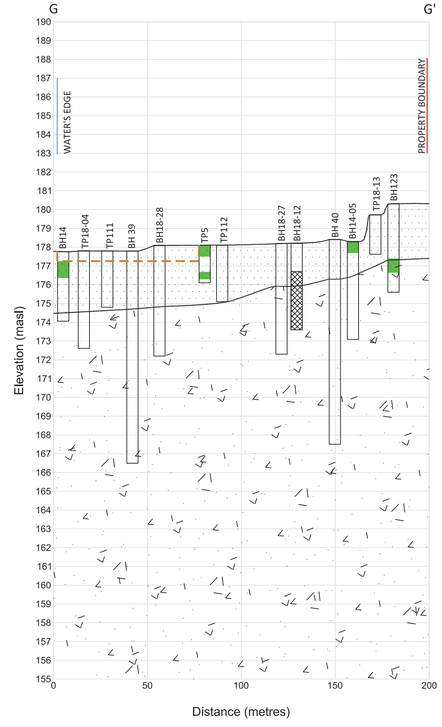
Sample Location	Units	BH114	BH113	TP8			TP9		SS1	SS2	BH 20	
Sample Date		18-Jun-13	18-Jun-13	29-Apr-14	29-Apr-14	29-Apr-14	29-Apr-14	29-Apr-14	30-Apr-14	30-Apr-14	22-May-15	22-May-15
Sample Depth (m)		2.90 - 3.66	4.42 - 5.18	0.0 - 0.6	0.6 - 1.2	1.4 - 1.8	0.0 - 0.6	1.4 - 2.0	0 - 0.15	0 - 0.15	0.0 - 0.6	2.3 - 2.9
Antimony	µg/g	<0.8	<0.8	<0.20	<0.20	<0.20	<0.20	<0.20	**88**	**1.8**	**2**	<0.8
Arsenic	µg/g	<1	<1	1.2	1.7	1.6	<1.0	2	2.9	1.8	9	**27**
Copper	µg/g	9	9	8.2	55	24	1.9	14	**130**	**170**	22	35

Cross - Section F-F'



Sample Location	Units	Table 9 SCS [1]	MOUND 1	MOUND 2	MOUND 3A	SS18-10	TP18-09	TP18-17
Sample Date			28-Apr-14	28-Apr-14	28-Apr-14	11-Jul-18	14-Aug-18	14-Aug-18
Sample Depth (m)			0 - 0.15	0 - 0.15	0 - 0.15	0 - 0.15	0.15 m	2.0
Arsenic	µg/g	18	4.2	**29**	<1.0	1.2	1.2	<1.0
Cyanide	µg/g	0.051	**0.07**	<0.01	0.01	0.04	<0.01	<0.01
Selenium	µg/g	1.5	<0.50	**1.6**	<0.50	<0.50	<0.50	<0.50

Cross - Section G-G'



PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING

CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Parameters Tested Meet Table 9 Standard
- Parameters Tested Exceed Table 9 Standard
- Well Screen

NOTE:
SS AND MOUND SAMPLES WITH NO RESULTS SHOWN WERE NOT ANALYZED FOR THE PARAMETER(S) REPORTED.

Table 9 SCS	
Antimony	1.3
Arsenic	18
Barium	220
Cadmium	1.2
Cobalt	22
Copper	92
Cyanide	0.051
Lead	120
Mercury	0.27
Molybdenum	2
Nickel	82
Selenium	1.5
Silver	0.5
Zinc	290

Table 9 - GENERIC SITE CONDITION STANDARDS FOR SHALLOW SOILS IN A NON-POTABLE GROUNDWATER CONDITION (MOE, 2011).

CAMBIUM
P.O. Box 325, 52 Hunter Street East
Peterborough, Ontario, K9H 1G5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

CROSS - SECTIONS C-C' TO G-G' ALONG - GRADIENT METALS IN SOIL

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,500	Vertical Scale:	1:150
Drawn By:	TLC	Checked By:	NJY
Figure:	15c		

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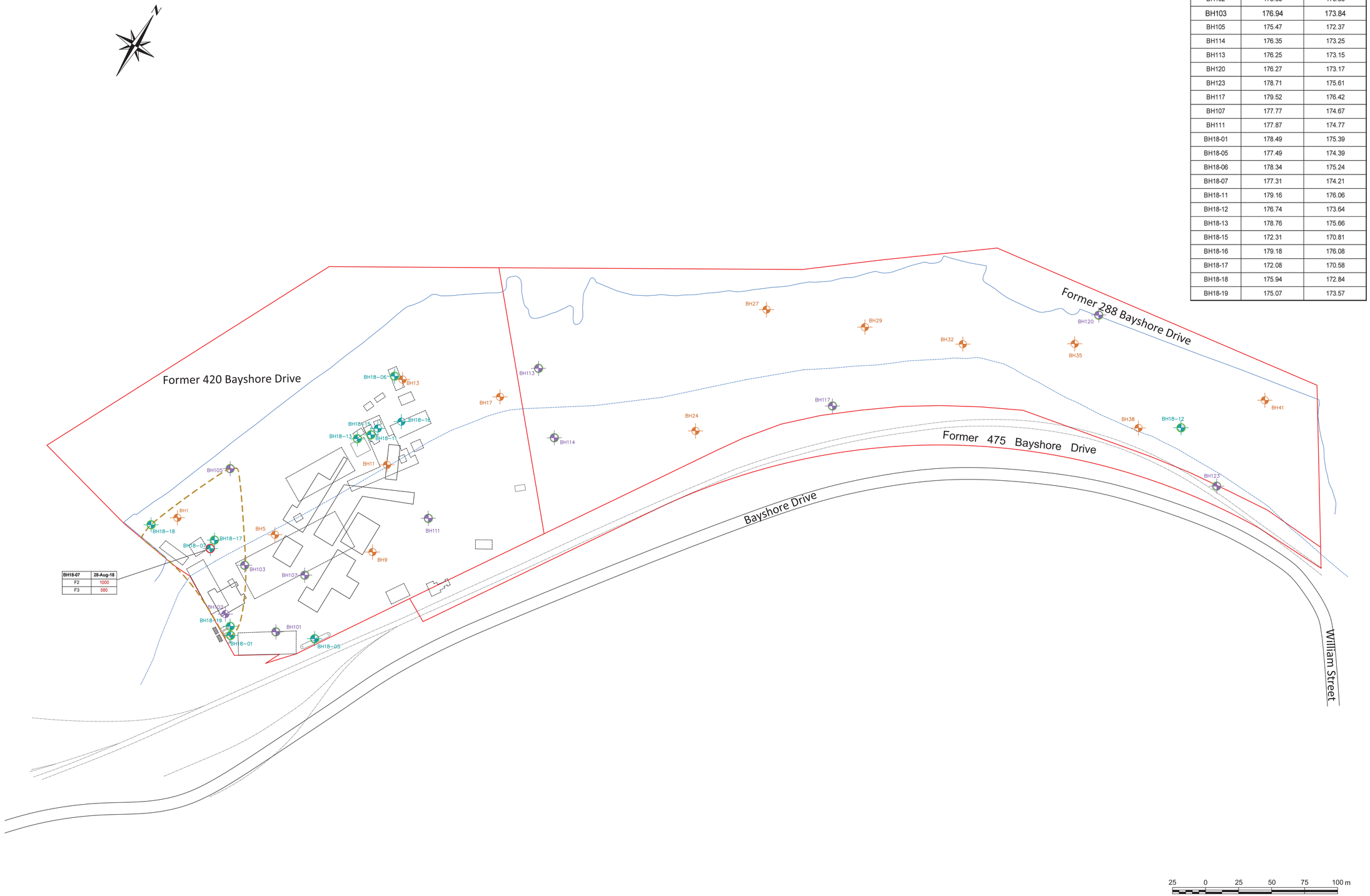
Well ID	Top of Screen (masl)	Bottom of Screen (masl)
BH101	178.96	175.86
BH102	178.63	175.53
BH103	176.94	173.84
BH105	175.47	172.37
BH114	176.35	173.25
BH113	176.25	173.15
BH120	176.27	173.17
BH123	178.71	175.61
BH117	179.52	176.42
BH107	177.77	174.67
BH111	177.87	174.77
BH18-01	178.49	175.39
BH18-05	177.49	174.39
BH18-06	178.34	175.24
BH18-07	177.31	174.21
BH18-11	179.16	176.06
BH18-12	176.74	173.64
BH18-13	178.76	175.66
BH18-15	172.31	170.81
BH18-16	179.18	176.08
BH18-17	172.08	170.58
BH18-18	175.94	172.84
BH18-19	175.07	173.57



PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PETO MacCALLUM LTD.
- MONITORING WELL

PINCHIN LTD.
- MONITORING WELL

CAMBIUM
- MONITORING WELL

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

- PARAMETERS TESTED MEET TABLE 7 SCS
- PARAMETERS TESTED EXCEED TABLE 7 SCS
- EXTENT OF IMPACT

NOTE:
BH18-13 AND BH18-19 ANALYZED FOR ONLY PHC F1

Table 7 SCS	
F2	150
F3	500

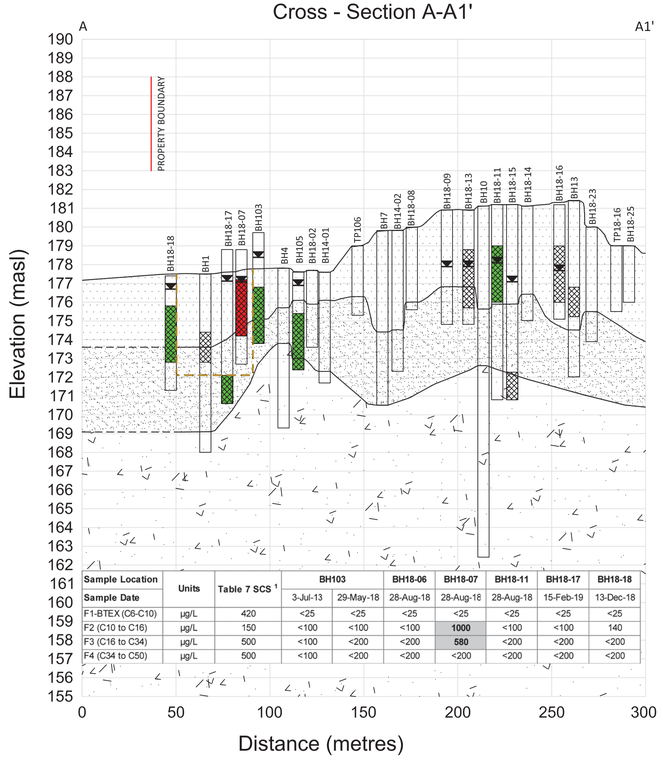
Table 7 - GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATERBODY IN A NON - POTABLE GROUNDWATER CONDITION (MOE, 2011).

P.O. Box 325, 52 Hunter Street East
Peterborough, Ontario, K9H 1G5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

GROUNDWATER RESULTS - PHCs

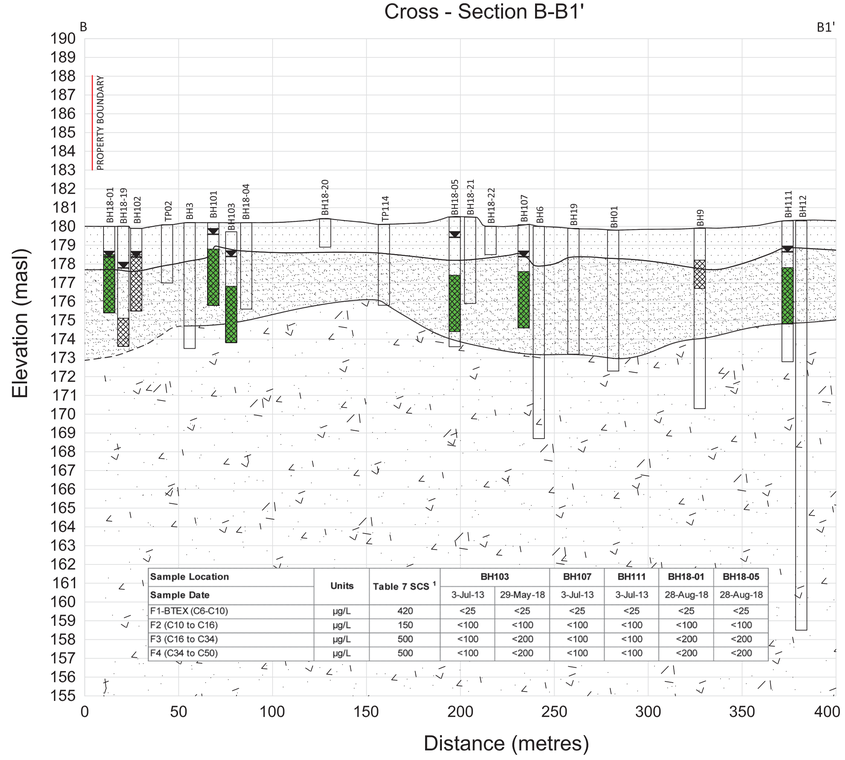
Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By:	TLC	Checked By:	NJY
Figure:	16a		

Cross - Section A-A1'



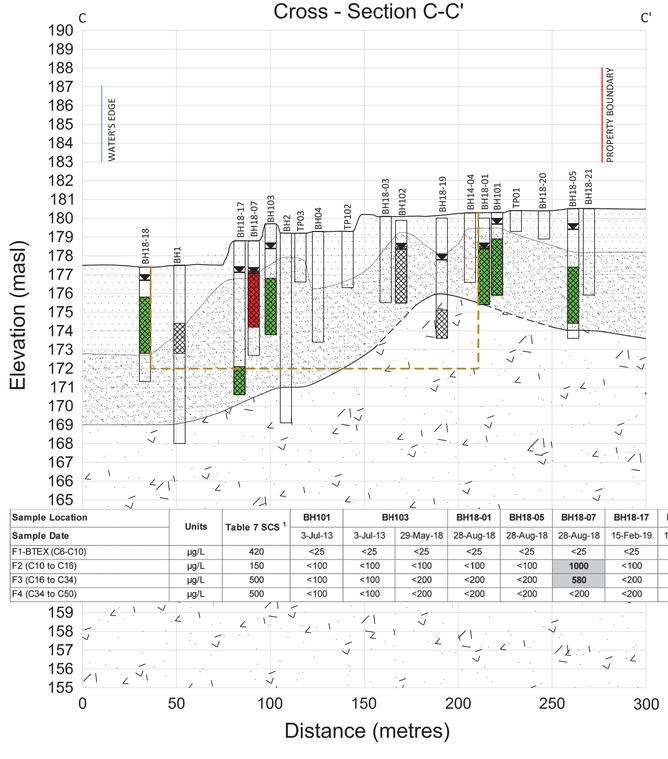
Sample Location	Units	Table 7 SCS [1]	BH103		BH18-06	BH18-07	BH18-11	BH18-17	BH18-18
Sample Date			3-Jul-13	29-May-18	28-Aug-18	28-Aug-18	28-Aug-18	15-Feb-19	13-Dec-18
F1-BTEX (C6-C10)	µg/L	420	<25	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	<100	<100	<100	**1000**	<100	<100	140
F3 (C16 to C34)	µg/L	500	<100	<200	<200	**580**	<200	<200	<200
F4 (C34 to C50)	µg/L	500	<100	<200	<200	<200	<200	<200	<200

Cross - Section B-B1'



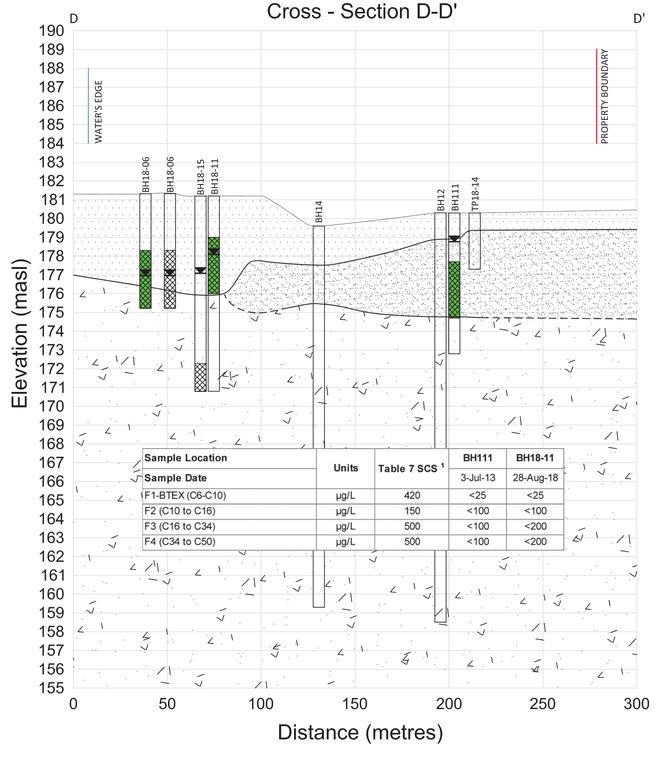
Sample Location	Units	Table 7 SCS [1]	BH103		BH107	BH111	BH18-01	BH18-05
Sample Date			3-Jul-13	29-May-18	3-Jul-13	3-Jul-13	28-Aug-18	28-Aug-18
F1-BTEX (C6-C10)	µg/L	420	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	<100	<100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	<100	<200	<100	<100	<200	<200
F4 (C34 to C50)	µg/L	500	<100	<200	<100	<100	<200	<200

Cross - Section C-C'



Sample Location	Units	Table 7 SCS [1]	BH101	BH103		BH18-01	BH18-05	BH18-07	BH18-17	BH18-18
Sample Date			3-Jul-13	3-Jul-13	29-May-18	28-Aug-18	28-Aug-18	28-Aug-18	15-Feb-19	13-Dec-18
F1-BTEX (C6-C10)	µg/L	420	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	<100	<100	<100	<100	<100	**1000**	<100	140
F3 (C16 to C34)	µg/L	500	<100	<100	<200	<200	<200	**580**	<200	<200
F4 (C34 to C50)	µg/L	500	<100	<100	<200	<200	<200	<200	<200	<200

Cross - Section D-D'



Sample Location	Units	Table 7 SCS [1]	BH111	BH18-11
Sample Date			3-Jul-13	28-Aug-18
F1-BTEX (C6-C10)	µg/L	420	<25	<25
F2 (C10 to C16)	µg/L	150	<100	<100
F3 (C16 to C34)	µg/L	500	<100	<200
F4 (C34 to C50)	µg/L	500	<100	<200

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT MIDLAND BAY LANDING

CORPORATION OF THE TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- Water Level (February 15, 2019)
- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Parameters Tested Meet Table 7 Standard
- Parameters Tested Exceed Table 7 Standard
- Well Screen

Table 7 SCS	
F2	150
F3	500

Table 7 - GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATERBODY IN A NON - POTABLE GROUNDWATER CONDITION (MOE, 2011).

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CROSS - SECTIONS
PHCs IN GROUNDWATER

Project No.: 6820-001	Date: March 2019
	Rev.:
Horizontal Scale: 1:1,500	Vertical Scale: 1:150
Drawn By: TLC	Checked By: NJY
	Figure: 16b

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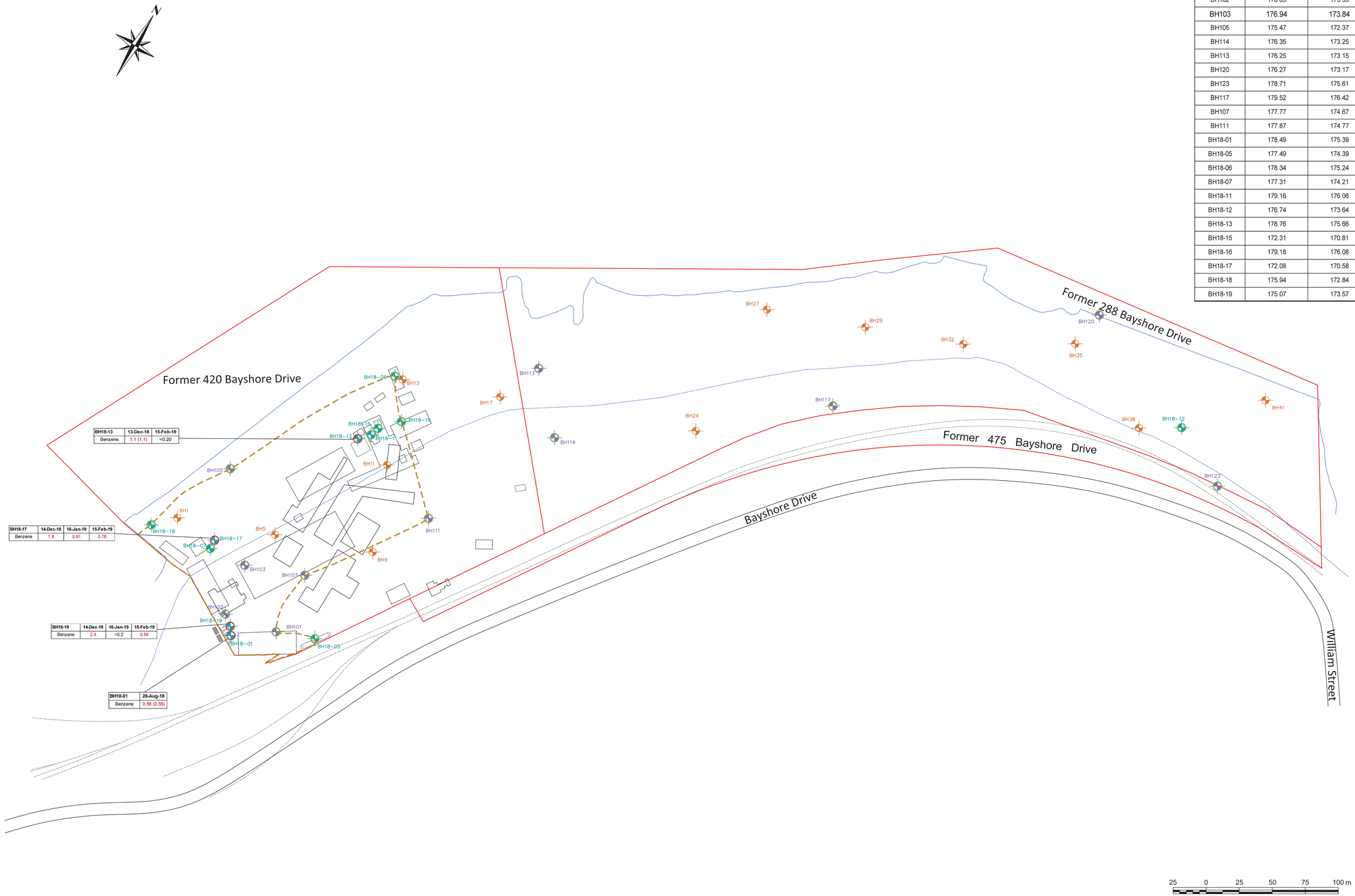
Well ID	Top of Screen (masl)	Bottom of Screen (masl)
BH101	178.96	175.86
BH102	178.63	175.53
BH103	176.94	173.84
BH105	175.47	172.37
BH114	176.35	173.25
BH113	176.25	173.15
BH120	176.27	173.17
BH123	178.71	175.61
BH117	179.52	176.42
BH107	177.77	174.67
BH111	177.87	174.77
BH18-01	178.49	175.39
BH18-05	177.49	174.39
BH18-06	178.34	175.24
BH18-07	177.31	174.21
BH18-11	179.16	176.06
BH18-12	176.74	173.64
BH18-13	178.76	175.66
BH18-15	172.31	170.81
BH18-16	179.18	176.08
BH18-17	172.08	170.58
BH18-18	175.94	172.84
BH18-19	175.07	173.57



PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PETO MacCALLUM LTD.
- MONITORING WELL

PINCHIN LTD.
- MONITORING WELL

CAMBIUM
- MONITORING WELL

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

- PARAMETERS TESTED MEET TABLE 7 SCS
- PARAMETERS TESTED EXCEED TABLE 7 SCS
- EXTENT OF IMPACT

Table 7 SCS	
Benzene	0.5

Table 7 - GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATERBODY IN A NON - POTABLE GROUNDWATER CONDITION (MOE, 2011).

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GROUNDWATER RESULTS - BTEX

Project No.: 6820-001		Date: March 2019	
		Rev.:	
Horizontal Scale: 1:1,250		Vertical Scale: N/A	
Drawn By: TLC	Checked By: NJY	Figure: 17a	

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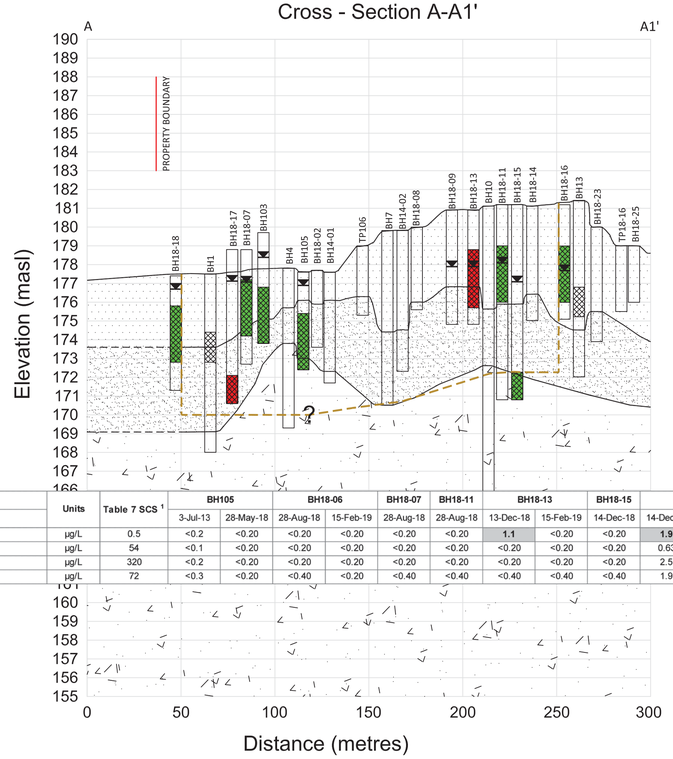
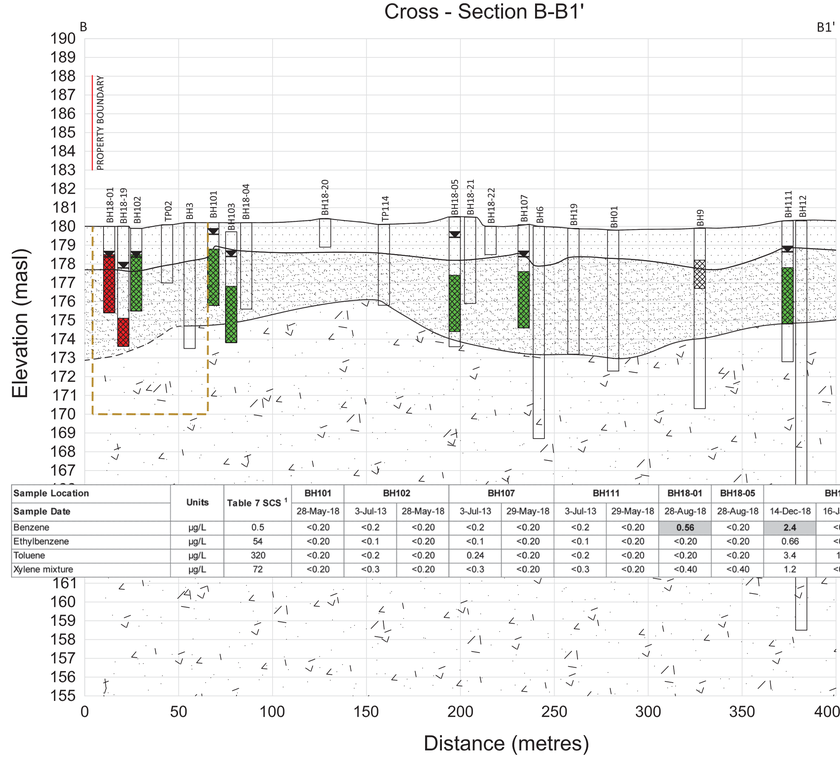
Cross - Section A-A1'



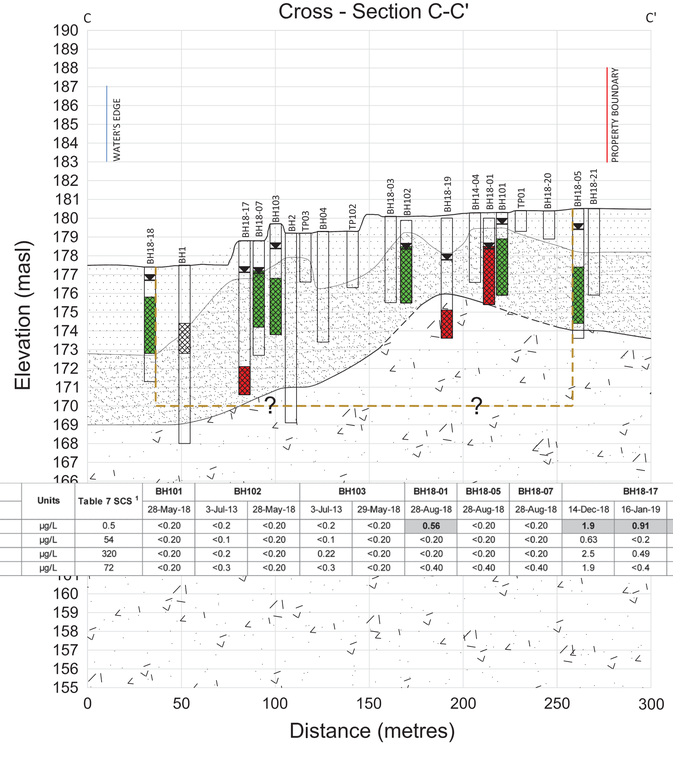
Sample Location	Units	Table 7 SCS [1]	BH105		BH18-06		BH18-07	BH18-11	BH18-13		BH18-15	BH18-17			BH18-18	BH18-19		
Sample Date			3-Jul-13	28-May-18	28-Aug-18	15-Feb-19	28-Aug-18	28-Aug-18	13-Dec-18	15-Feb-19	14-Dec-18	14-Dec-18	16-Jan-19	15-Feb-19	13-Dec-18	14-Dec-18	16-Jan-19	15-Feb-19
Benzene	µg/L	0.5	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	**1.1**	<0.20	<0.20	**1.9**	**0.91**	**0.78**	<0.20	**2.4**	<0.2	**0.54**
Ethylbenzene	µg/L	54	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.63	<0.2	<0.20	12	0.66	<0.2	<0.2
Toluene	µg/L	320	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	2.5	0.49	0.63	<0.20	3.4	1.6	53
Xylene mixture	µg/L	72	<0.3	<0.20	<0.40	<0.20	<0.40	<0.40	<0.40	<0.40	<0.40	1.9	<0.4	<0.40	<0.40	1.2	<0.4	<0.40

Cross - Section B-B1'



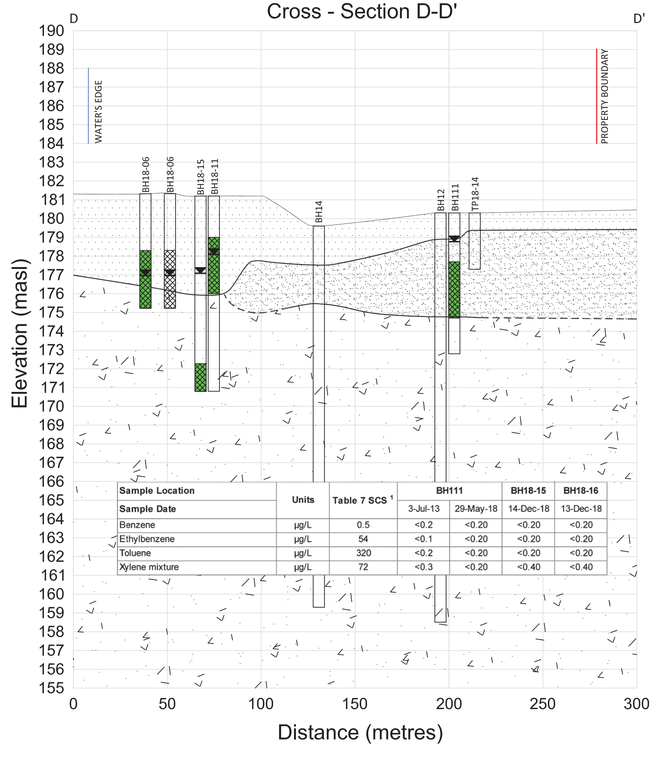
Sample Location	Units	Table 7 SCS [1]	BH101	BH102		BH107		BH111		BH18-01	BH18-05	BH18-19		
Sample Date			28-May-18	3-Jul-13	28-May-18	3-Jul-13	29-May-18	3-Jul-13	29-May-18	28-Aug-18	28-Aug-18	14-Dec-18	16-Jan-19	15-Feb-19
Benzene	µg/L	0.5	<0.20	<0.2	<0.20	<0.2	<0.20	<0.2	<0.20	**0.56**	<0.20	**2.4**	<0.2	**0.54**
Ethylbenzene	µg/L	54	<0.20	<0.1	<0.20	<0.1	<0.20	<0.1	<0.20	<0.20	<0.20	0.66	<0.2	<0.2
Toluene	µg/L	320	<0.20	<0.2	<0.20	0.24	<0.20	<0.2	<0.20	<0.20	<0.20	3.4	1.6	53
Xylene mixture	µg/L	72	<0.20	<0.3	<0.20	<0.3	<0.20	<0.3	<0.20	<0.40	<0.40	1.2	<0.4	<0.40

Cross - Section C-C'



Sample Location	Units	Table 7 SCS [1]	BH101	BH102		BH103		BH18-01	BH18-05	BH18-07	BH18-17			BH18-18	BH18-19		
Sample Date			28-May-18	3-Jul-13	28-May-18	3-Jul-13	29-May-18	28-Aug-18	28-Aug-18	28-Aug-18	14-Dec-18	16-Jan-19	15-Feb-19	13-Dec-18	14-Dec-18	16-Jan-19	15-Feb-19
Benzene	µg/L	0.5	<0.20	<0.2	<0.20	<0.2	<0.20	**0.56**	<0.20	<0.20	**1.9**	**0.91**	**0.78**	<0.20	**2.4**	<0.2	**0.54**
Ethylbenzene	µg/L	54	<0.20	<0.1	<0.20	<0.1	<0.20	<0.20	<0.20	<0.20	0.63	<0.2	<0.20	12	0.66	<0.2	<0.2
Toluene	µg/L	320	<0.20	<0.2	<0.20	0.22	<0.20	<0.20	<0.20	<0.20	2.5	0.49	0.63	<0.20	3.4	1.6	53
Xylene mixture	µg/L	72	<0.20	<0.3	<0.20	<0.3	<0.20	<0.40	<0.40	<0.40	1.9	<0.4	<0.40	<0.40	1.2	<0.4	<0.40

Cross - Section D-D'



Sample Location	Units	Table 7 SCS [1]	BH111		BH18-15	BH18-16
Sample Date			3-Jul-13	29-May-18	14-Dec-18	13-Dec-18
Benzene	µg/L	0.5	<0.2	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	54	<0.1	<0.20	<0.20	<0.20
Toluene	µg/L	320	<0.2	<0.20	<0.20	<0.20
Xylene mixture	µg/L	72	<0.3	<0.20	<0.40	<0.40

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT MIDLAND BAY LANDING

CORPORATION OF THE TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- Water Level (February 15, 2019)
- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Parameters Tested Meet Table 7 Standard
- Parameters Tested Exceed Table 7 Standard
- Well Screen

Table 7 SCS	
Benzene	0.5

Table 7 - GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATERBODY IN A NON - POTABLE GROUNDWATER CONDITION (MOE, 2011).

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Tel: (705) 742.7900 Fax: (705) 742.7907
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CROSS - SECTIONS
BTEX IN GROUNDWATER

Project No.: 6820-001	Date: March 2019
	Rev.:
Horizontal Scale: 1:1,500	Vertical Scale: 1:150
Drawn By: TLC	Checked By: NJY
	Figure: 17b

Well ID	Top of Screen (masl)	Bottom of Screen (masl)
BH101	178.96	175.86
BH102	178.63	175.53
BH103	176.94	173.84
BH105	175.47	172.37
BH114	176.35	173.25
BH113	176.25	173.15
BH120	176.27	173.17
BH123	178.71	175.61
BH117	179.52	176.42
BH107	177.77	174.67
BH111	177.87	174.77
BH18-01	178.49	175.39
BH18-05	177.49	174.39
BH18-06	178.34	175.24
BH18-07	177.31	174.21
BH18-11	179.16	176.06
BH18-12	176.74	173.64
BH18-13	178.76	175.66
BH18-15	172.31	170.81
BH18-16	179.18	176.08
BH18-17	172.08	170.58
BH18-18	175.94	172.84
BH18-19	175.07	173.57

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PETO MacCALLUM LTD.
- MONITORING WELL

PINCHIN LTD.
- MONITORING WELL

CAMBIUM
- MONITORING WELL

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

- PARAMETERS TESTED MEET TABLE 7 SCS
- PARAMETERS TESTED EXCEED TABLE 7 SCS
- EXTENT OF IMPACT

Table 7 SCS	
Trichloroethylene	0.5

Table 7 - GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATERBODY IN A NON - POTABLE GROUNDWATER CONDITION (MOE, 2011).

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GROUNDWATER RESULTS - VOCs

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By:	TLC	Checked By:	NJY
		Figure:	18a

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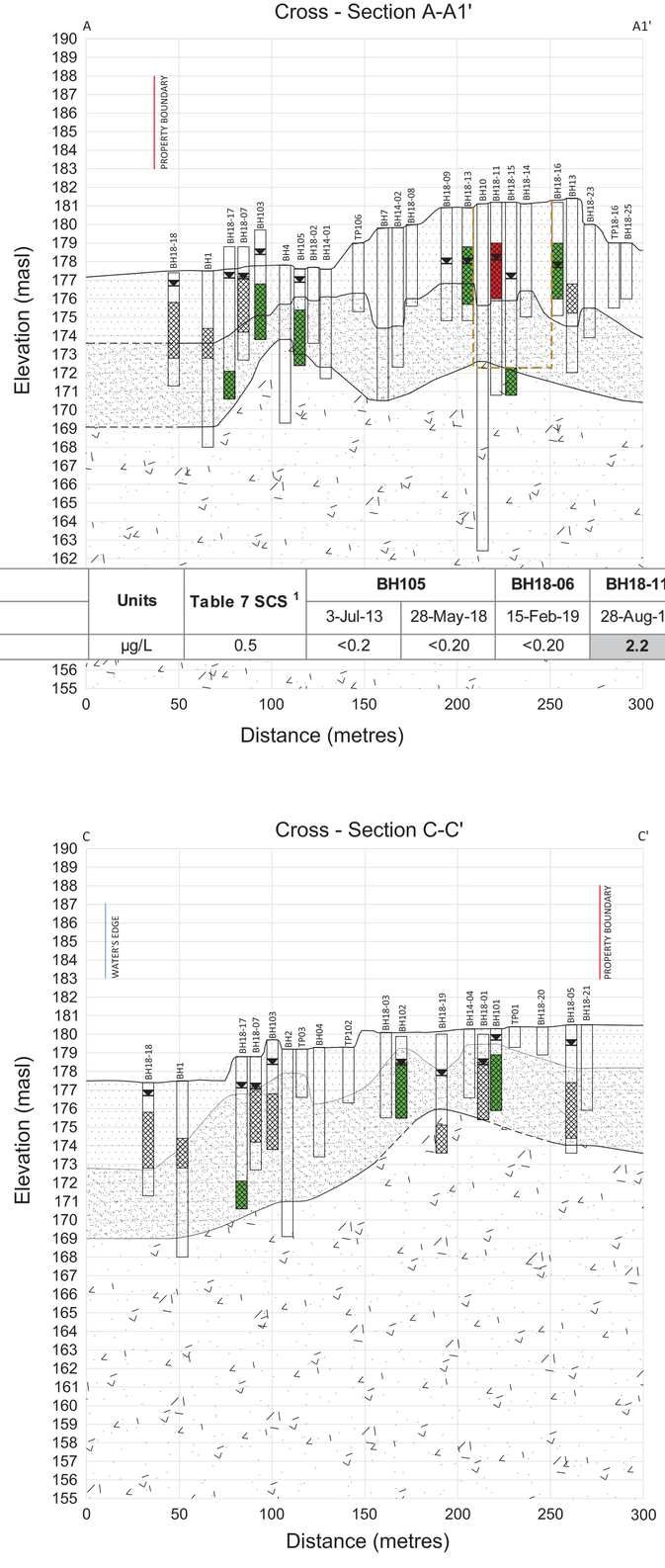
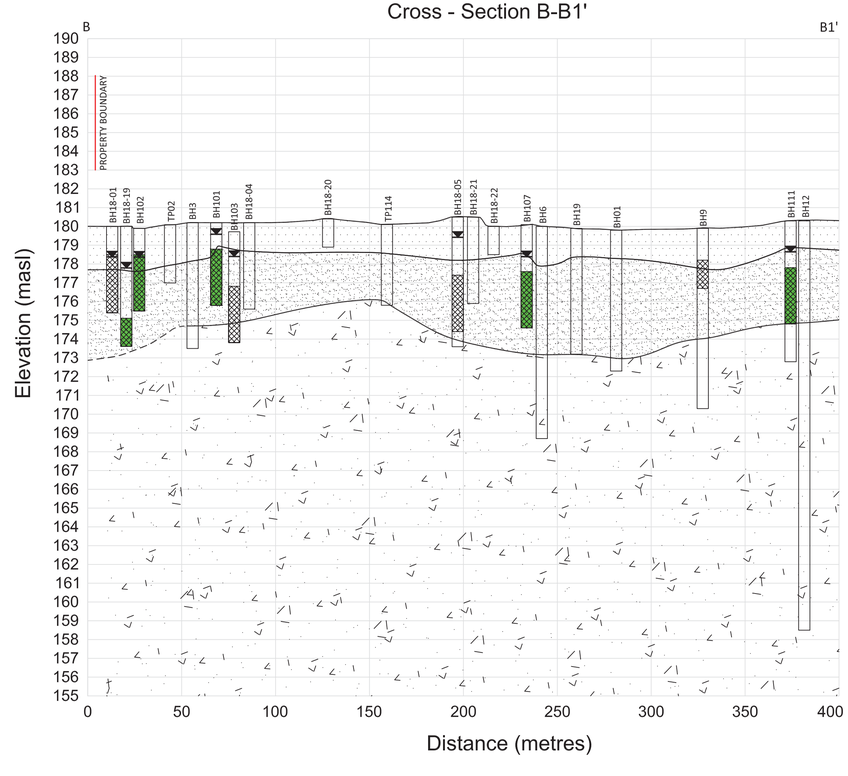
Cross - Section A-A1'



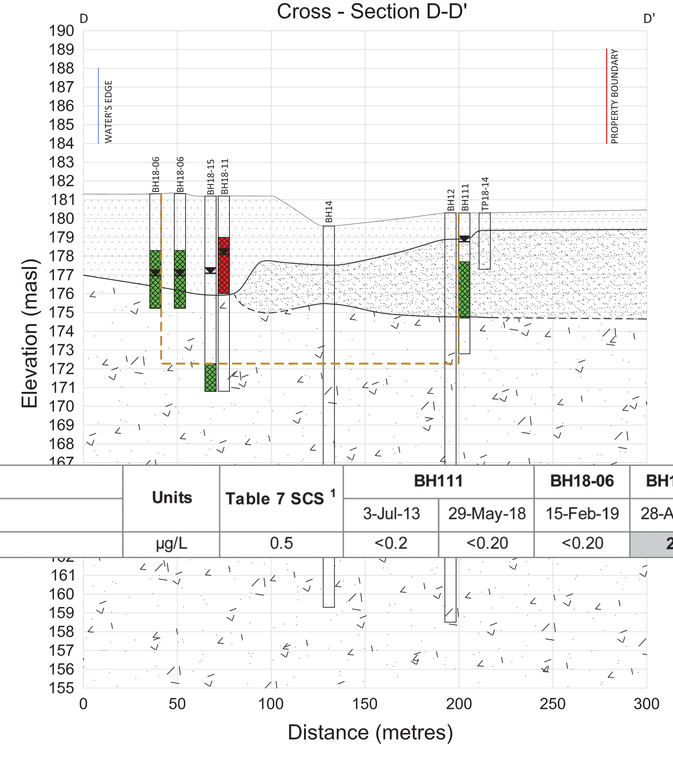
Sample Location	Units	Table 7 SCS [1]	BH105		BH18-06	BH18-11	BH18-13	BH18-15
Sample Date			3-Jul-13	28-May-18	15-Feb-19	28-Aug-18	13-Dec-18	14-Dec-18
Trichloroethylene	µg/L	0.5	<0.2	<0.20	<0.20	**2.2**	<0.20	<0.20

Cross - Section B-B1'



Cross - Section C-C'

Cross - Section D-D'



Sample Location	Units	Table 7 SCS [1]	BH111		BH18-06	BH18-11	BH18-15
Sample Date			3-Jul-13	29-May-18	15-Feb-19	28-Aug-18	14-Dec-18
Trichloroethylene	µg/L	0.5	<0.2	<0.20	<0.20	**2.2**	<0.20

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- Water Level (February 15, 2019)
- Extent of Impact
- Fill - organic topsoil, silty sand, gravel, sand cobbles, boulders, brick, wood/peat
- Till - silty sand, sandy silt, clay, sand
- Sand and Gravel
- Peat
- Sand
- Well Casing
- Parameters Tested Meet Table 7 Standard
- Parameters Tested Exceed Table 7 Standard
- Well Screen

Table 7 SCS	
Trichloroethylene	0.5

Table 7 - GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATERBODY IN A NON - POTABLE GROUNDWATER CONDITION (MOE, 2011).

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CROSS - SECTIONS
VOCs IN GROUNDWATER

Project No.: 6820-001	Date: March 2019
	Rev.:
Horizontal Scale: 1:1,500	Vertical Scale: 1:150
Drawn By: TLC	Checked By: NJY
	Figure: 18b

Well ID	Top of Screen (masl)	Bottom of Screen (masl)
BH101	178.96	175.86
BH102	178.63	175.53
BH103	176.94	173.84
BH105	175.47	172.37
BH114	176.35	173.25
BH113	176.25	173.15
BH120	176.27	173.17
BH123	178.71	175.61
BH117	179.52	176.42
BH107	177.77	174.67
BH111	177.87	174.77
BH18-01	178.49	175.39
BH18-05	177.49	174.39
BH18-06	178.34	175.24
BH18-07	177.31	174.21
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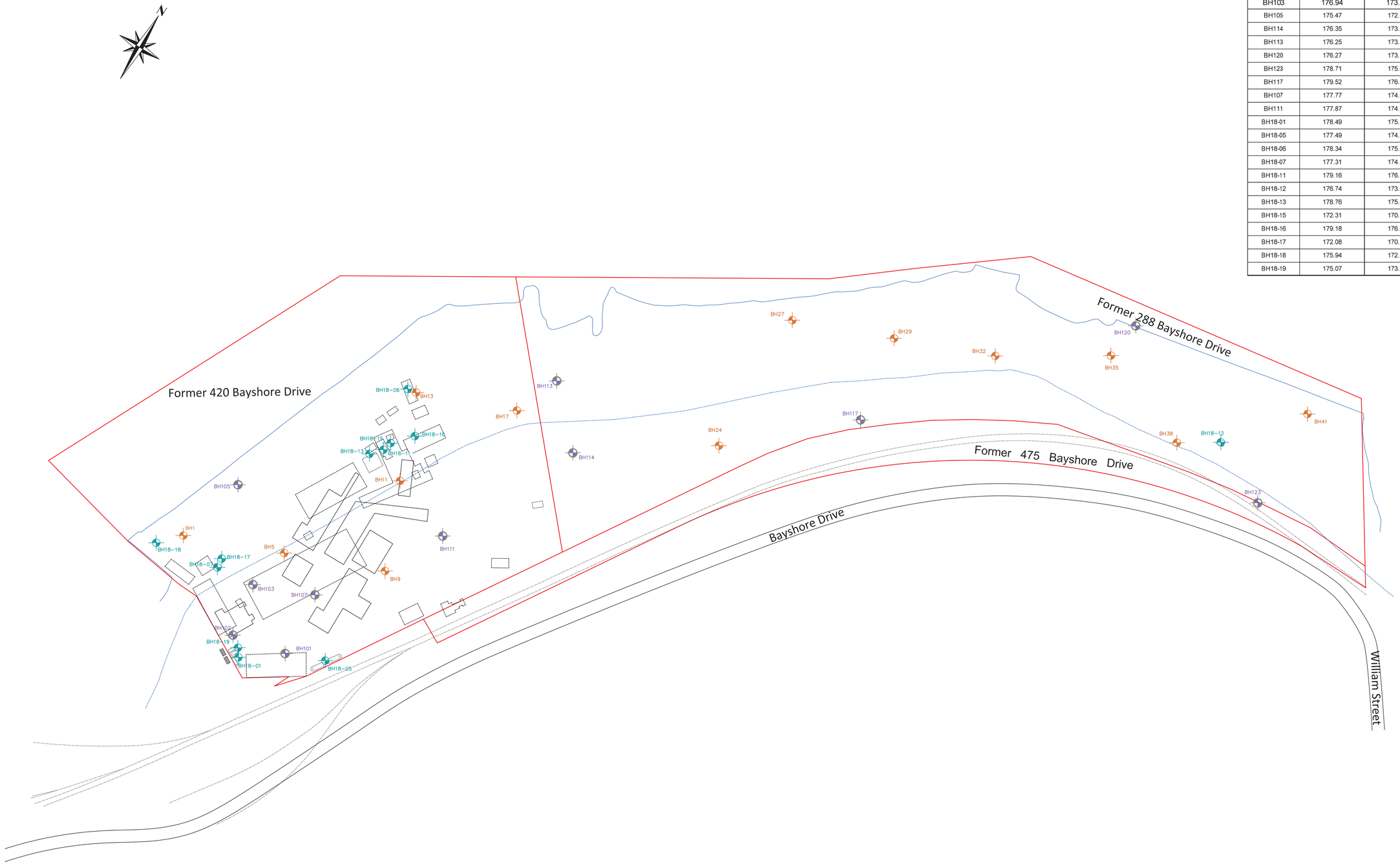
BH18-12	176.74	173.64
BH18-13	178.76	175.66
BH18-15	172.31	170.81
BH18-16	179.18	176.08
BH18-17	172.08	170.58
BH18-18	175.94	172.84
BH18-19	175.07	173.57



PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING

CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

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BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

- PARAMETERS TESTED MEET TABLE 7 SCS
- PARAMETERS TESTED EXCEED TABLE 7 SCS
- EXTENT OF IMPACT

Table 7 - GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATERBODY IN A NON - POTABLE GROUNDWATER CONDITION (MOE, 2011).

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GROUNDWATER RESULTS - PAHs

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By:	TLC	Checked By:	NJY
Figure:	19		

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Well ID	Top of Screen (masl)	Bottom of Screen (masl)
BH101	178.96	175.86
BH102	178.63	175.53
BH103	176.94	173.84
BH105	175.47	172.37
BH114	176.35	173.25
BH113	176.25	173.15
BH120	176.27	173.17
BH123	178.71	175.61
BH117	179.52	176.42
BH107	177.77	174.67
BH111	177.87	174.77
BH18-01	178.49	175.39
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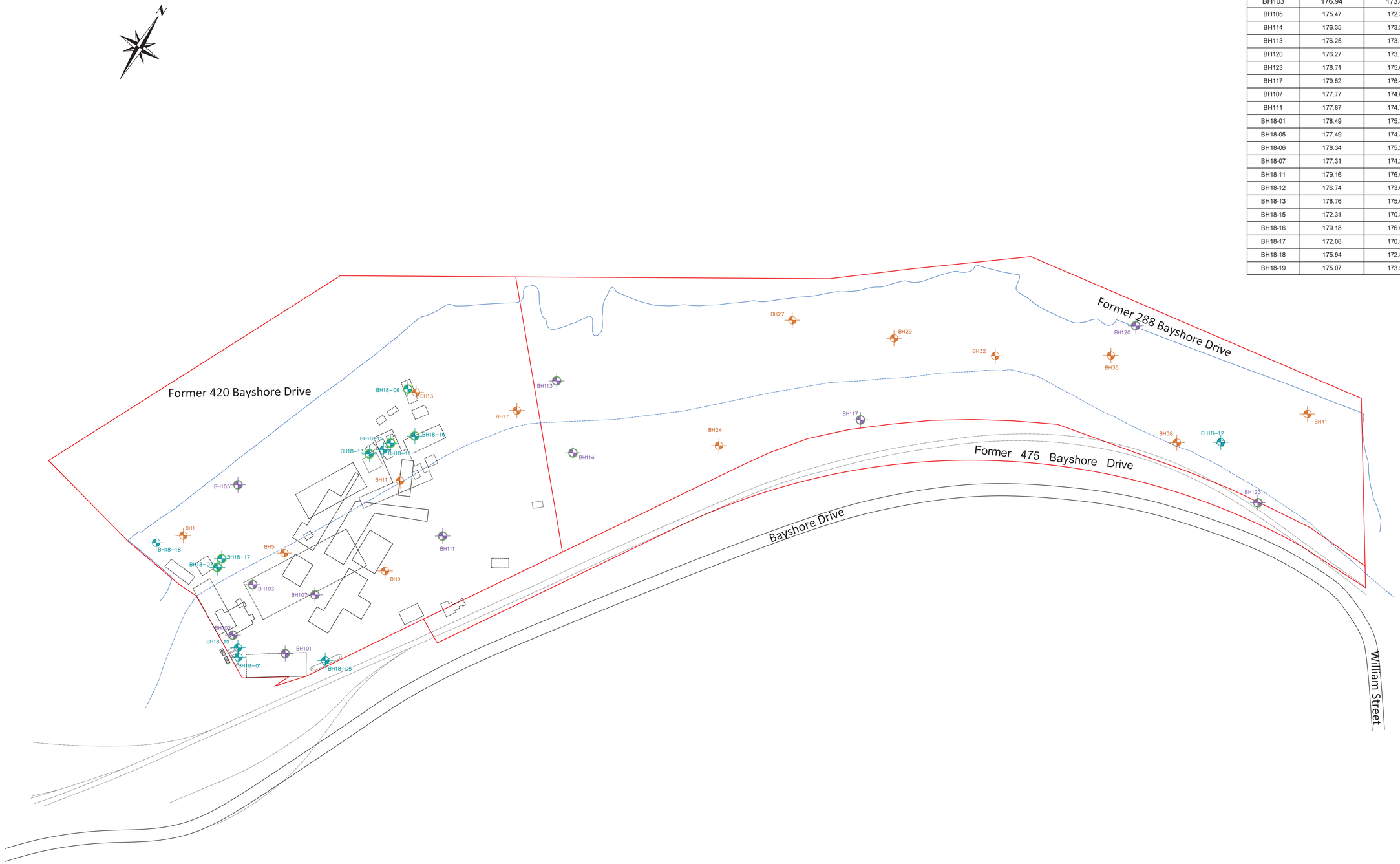
BH18-06	178.34	175.24
BH18-07	177.31	174.21
BH18-11	179.16	176.06
BH18-12	176.74	173.64
BH18-13	178.76	175.66
BH18-15	172.31	170.81
BH18-16	179.18	176.08
BH18-17	172.08	170.58
BH18-18	175.94	172.84
BH18-19	175.07	173.57



PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING

CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

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- MONITORING WELL

CAMBIUM
- MONITORING WELL

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

- PARAMETERS TESTED MEET TABLE 7 SCS
- PARAMETERS TESTED EXCEED TABLE 7 SCS
- EXTENT OF IMPACT

Table 7 - GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATERBODY IN A NON - POTABLE GROUNDWATER CONDITION (MOE, 2011).

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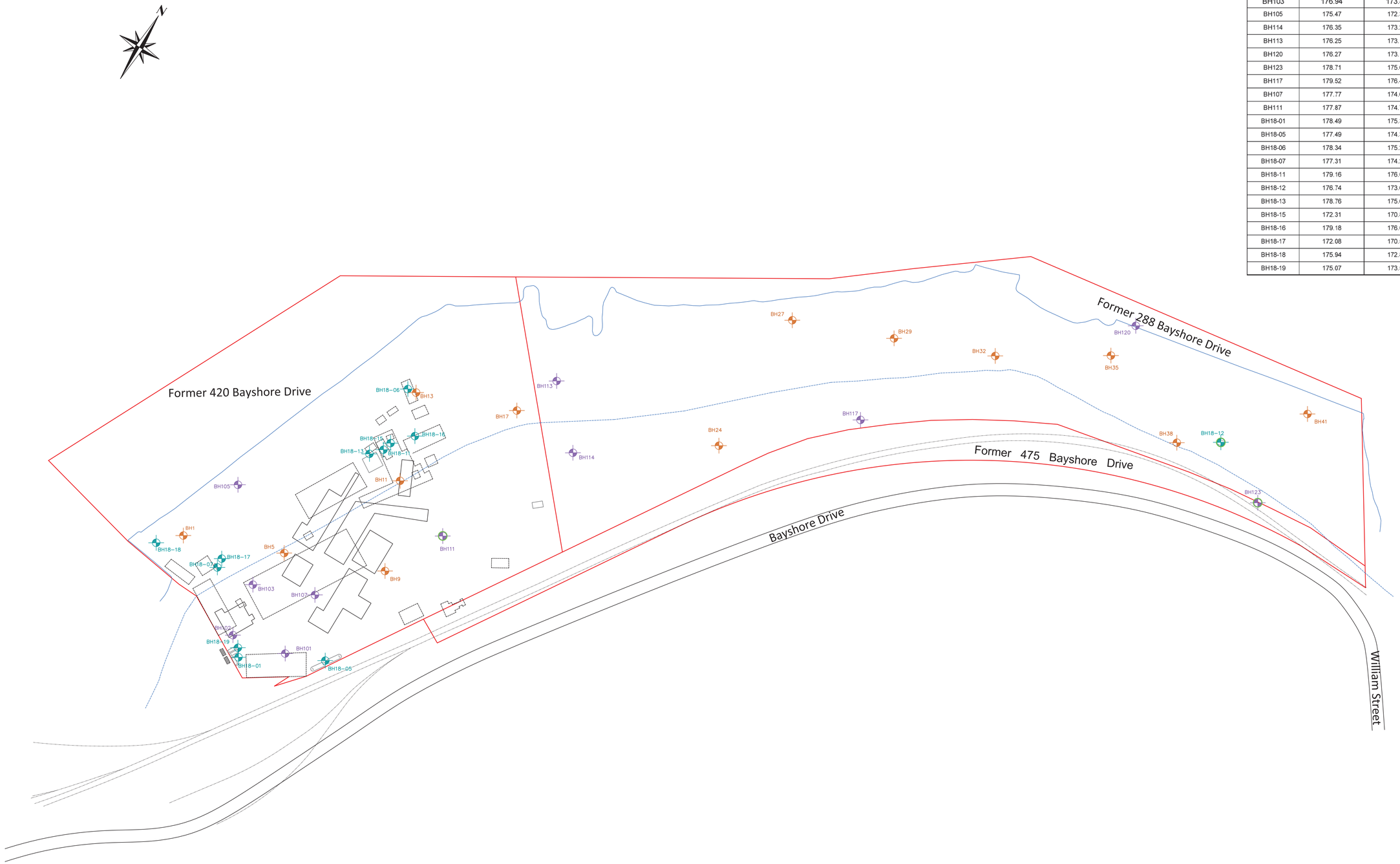
GROUNDWATER RESULTS - METALS

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By:	TLC	Checked By:	NJY
Figure:	20		

Well ID	Top of Screen (masl)	Bottom of Screen (masl)
BH101	178.96	175.86
BH102	178.63	175.53
BH103	176.94	173.84
BH105	175.47	172.37
BH114	176.35	173.25
BH113	176.25	173.15
BH120	176.27	173.17
BH123	178.71	175.61
BH117	179.52	176.42
BH107	177.77	174.67
BH111	177.87	174.77
BH18-01	178.49	175.39
BH18-05	177.49	174.39
BH18-06	178.34	175.24
BH18-07	177.31	174.21
BH18-11	179.16	176.06
BH18-12	176.74	173.64
BH18-13	178.76	175.66
BH18-15	172.31	170.81
BH18-16	179.18	176.08
BH18-17	172.08	170.58
BH18-18	175.94	172.84
BH18-19	175.07	173.57



PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
MIDLAND BAY LANDING
CORPORATION OF THE
TOWN OF MIDLAND
420 Bayshore Drive, Midland, Ontario

LEGEND

- WATER'S EDGE (Feb, 17, 2015)
- ORIGINAL WATER'S EDGE (APPROXIMATE)
- PROPERTY LINE
- FORMER RAIL LINE
- UNDERGROUND STORAGE TANK
- AST

PETO MacCALLUM LTD.
- MONITORING WELL

PINCHIN LTD.
- MONITORING WELL

CAMBIUM
- MONITORING WELL

BUILDING FOOTPRINTS
- RECENT
- FROM 1917 AND 1946 FIRE INSURANCE PLANS

- PARAMETERS TESTED MEET TABLE 7 SCS
- PARAMETERS TESTED EXCEED TABLE 7 SCS
- EXTENT OF IMPACT

Table 7 - GENERIC SITE CONDITION STANDARDS FOR USE WITHIN 30 m OF A WATERBODY IN A NON - POTABLE GROUNDWATER CONDITION (MOE, 2011).

CAMBIUM
P.O. Box 325, 52 Hunter Street East
Peterborough, Ontario, K9H 1G5
Tel: (705) 742.7900 Fax: (705) 742.7907
www.cambium-inc.com

GROUNDWATER RESULTS - PCBs

Project No.:	6820-001	Date:	March 2019
		Rev.:	
Horizontal Scale:	1:1,250	Vertical Scale:	N/A
Drawn By:	TLC	Checked By:	NJY
Figure:	21		

FIGURE 22a
HUMAN HEALTH CONCEPTUAL SITE MODEL - WITHOUT RISK MANAGEMENT

MEDIUM	EXPOSURE MEDIUM	POTENTIAL EXPOSURE ROUTES	POTENTIAL HUMAN RECEPTORS		
			Site Visitors/ Trespassers (all ages)	Worker-Short Term (maintenance worker)	Construction Worker (sub-surface worker)
SOIL	FULL DEPTH SOIL	INCIDENTAL INGESTION	✓	✓	✓
		DERMAL CONTACT	✓	✓	✓
		PARTICULATE INHALATION	✓	✓	✓
		INHALATION OF INDOOR AIR	✓	✓	✓
		INHALATION OF OUTDOOR AIR	✓	✓	✓
GROUNDWATER	SOIL VAPOUR	INHALATION OF INDOOR AIR	✓	✓	✓
		INHALATION OF OUTDOOR AIR	✓	✓	✓
GROUNDWATER	GROUNDWATER	INCIDENTAL INGESTION	**x**	**x**	✓
		DERMAL CONTACT	**x**	**x**	✓
		INHALATION OF INDOOR AIR	✓	✓	✓
		INHALATION OF OUTDOOR AIR	✓	✓	✓
		INHALATION OF TRENCH AIR	**x**	**x**	✓

Notes:

✓ - Indicates a potential exposure of contaminant of concern to receptor.

x - Indicates no exposure of contaminant of concern to receptor.

——→ Indicates pathway potentially complete

- - - - - - - - → Indicates pathway incomplete

FIGURE 22b
HUMAN HEALTH CONCEPTUAL SITE MODEL - WITH RISK MANAGEMENT

MEDIUM	EXPOSURE MEDIUM	POTENTIAL EXPOSURE ROUTES	POTENTIAL HUMAN RECEPTORS		
			Site Visitors/ Trespassers (all ages)	Worker-Short Term (maintenance worker)	Construction Worker (sub-surface worker)
SOIL	FULL DEPTH SOIL	INCIDENTAL INGESTION	x	x	x
		DERMAL CONTACT	x	x	x
		PARTICULATE INHALATION	x	x	x
		INHALATION OF INDOOR AIR	x	x	x
		INHALATION OF OUTDOOR AIR	✓	✓	✓
GROUNDWATER	SOIL VAPOUR	INHALATION OF INDOOR AIR	x	x	x
		INHALATION OF OUTDOOR AIR	✓	✓	✓
GROUNDWATER	GROUNDWATER	INCIDENTAL INGESTION	x	x	x
		DERMAL CONTACT	x	x	x
		INHALATION OF INDOOR AIR	x	x	x
		INHALATION OF OUTDOOR AIR	✓	✓	✓
		INHALATION OF TRENCH AIR	x	x	x

Notes:

✓ - Indicates a potential exposure of contaminant of concern to receptor.

x - Indicates no exposure of contaminant of concern to receptor.

——→ Indicates pathway potentially complete

- - - - - - - - → Indicates pathway incomplete

FIGURE 23a
ECOLOGICAL CONCEPTUAL SITE MODEL - WITHOUT RISK MANAGEMENT

MEDIUM	EXPOSURE MEDIUM	POTENTIAL EXPOSURE ROUTES	POTENTIAL ECOLOGICAL RECEPTORS		
			Terrestrial Soil Invertebrates and Plants	Birds, Mammals, and Reptiles	Aquatic Receptors
SOIL	FULL DEPTH SOIL	SOIL CONTACT	✓	✓	x
		SOIL INGESTION	✓	✓	x
		INGESTION OF IMPACTED FOOD	✓	✓	x
GROUNDWATER	GROUNDWATER	GROUNDWATER CONTACT	x	x	x
	SURFACE WATER	INGESTION OF SURFACE WATER	✓	✓	✓
		INGESTION OF INPACTED FOOD	✓	✓	✓
SEDIMENT	SEDIMENT	SEDIMENT CONTACT	x	✓	✓
		SEDIMENT INGESTION	x	✓	✓
		INGESTION OF IMPACTED FOOD	x	✓	✓

Notes:

✓ - Indicates a potential exposure of contaminant of concern to receptor.

x - Indicates no exposure of contaminant of concern to receptor.

——→ Indicates pathway potentially complete

- - - - - - - - → Indicates pathway incomplete

FIGURE 23b
ECOLOGICAL CONCEPTUAL SITE MODEL - WITH RISK MANAGEMENT

MEDIUM	EXPOSURE MEDIUM	POTENTIAL EXPOSURE ROUTES	POTENTIAL ECOLOGICAL RECEPTORS		
			Terrestrial Soil Invertebrates and Plants	Birds, Mammals, and Reptiles	Aquatic Receptors
SOIL	FULL DEPTH SOIL	SOIL CONTACT	x	x	x
		SOIL INGESTION	x	x	x
		INGESTION OF IMPACTED FOOD	x	x	x
GROUNDWATER	GROUNDWATER	GROUNDWATER CONTACT	x	x	x
	SURFACE WATER	INGESTION OF SURFACE WATER	x	x	x
		INGESTION OF INPACTED FOOD	x	x	x
SEDIMENT	SEDIMENT	SEDIMENT CONTACT	x	✓	✓
		SEDIMENT INGESTION	x	✓	✓
		INGESTION OF IMPACTED FOOD	x	✓	✓

Notes:

✓ - Indicates a potential exposure of contaminant of concern to receptor.

x - Indicates no exposure of contaminant of concern to receptor.

——→ Indicates pathway potentially complete

- - - - - - - - → Indicates pathway incomplete

Appendix A
Surface Water and Sediment Results

TS2-3 : 10 m	
	04/10/2014
Chromium (Total)	30
Copper	23
Lead	46
Nickel	24

TS2-2 : 8.4 m	
	04/10/2014
Copper	18
Lead	89/60
Nickel	17
Phenanthrene	0.65

TS2-1 : 9.1 m	
	04/10/2014
Benzo(g,h,i)perylene	0.20
Cadmium	0.64
Chromium (Total)	36
Copper	29
Lead	50
Nickel	26
Zinc	140

TS1-1 : 1 m	
	04/10/2014
Anthracene	1.4
Benzo(a)anthracene	0.85
Benzo(a)pyrene	0.61
Benzo(g,h,i)perylene	0.36
Benzo(k)fluoranthene	0.32
Chrysene	0.50
Dibenzo(a,h)anthracene	0.081
Fluoranthene	2.7
Fluorene	0.57
Indeno(1,2,3-cd)pyrene	0.37
Lead	130
Phenanthrene	3.3
Pyrene	2.1

TR-3 : 9.1 m	
	04/11/2014
Benzo(a)anthracene	0.34
Benzo(g,h,i)perylene	0.24
Chromium (Total)	36
Copper	22
Fluoranthene	0.82
Indeno(1,2,3-cd)pyrene	0.25
Lead	32
Nickel	27
Pyrene	0.66

TR-2 : 7.9 m	
	04/11/2014
Benzo(a)anthracene	0.36
Benzo(g,h,i)perylene	0.26
Chromium (Total)	36
Fluoranthene	0.82
Indeno(1,2,3-cd)pyrene	0.27
Nickel	23
Pyrene	0.66

TR-1 : 6.1 m	
	04/11/2014
Benzo(g,h,i)perylene	0.18
Nickel	17

TS3-3 : 10.9 m	
	04/11/2014
Anthracene	0.39
Benzo(a)anthracene	1.8
Benzo(a)pyrene	1.7
Benzo(g,h,i)perylene	1.1
Benzo(k)fluoranthene	0.89
Chromium (Total)	83
Chrysene	1.6
Copper	58
Dibenzo(a,h)anthracene	0.26
Fluoranthene	4.7
Indeno(1,2,3-cd)pyrene	1.1
Lead	94
Nickel	54
Phenanthrene	1.8
Pyrene	3.6
Silver	0.58
Zinc	160

TS1-4
TS1-3
TS1-2
TS1-1
TS2-3
TS2-2
TS2-1
TS3-3
TS3-2
TS3-1
TR-3
TR-2
TR-1
Shed
Bayshore Drive
Frank Street
William Street
Lindsay Street
Gloucester Street
George Street
Bay Street
Barnett Avenue
Edgehill Drive
Charles Street

588250 588500 588750 589000
4957000
4956750
4956500

0 100 200 m
1:3,000

N

Stantec

Legend
- Approximate Site Boundary
- Sediment Sample Location (Stantec)
- Parameters Tested Do Not Exceed Regulatory Standards (Table 9)
- Parameters Tested Exceed Regulatory Standards (Table 9)

Sample ID — TR-1 : 6.1 m — Sample Depth
Parameter — Nickel | 04/11/2014 — Sample Date
Value (µg/g) — 17

MOE Table 9 SCS	
Constituent	**Standard (µg/g)**
Anthracene	0.22
Benzo(a)anthracene	0.32
Benzo(a)pyrene	0.37
Benzo(g,h,i)perylene	0.17
Benzo(k)fluoranthene	0.24
Cadmium	0.6
Chromium (Total)	26
Chrysene	0.34
Copper	16
Dibenzo(a,h)anthracene	0.06
Fluoranthene	0.75
Fluorene	0.19
Indeno(1,2,3-cd)pyrene	0.2
Lead	31
Nickel	16
Phenanthrene	0.56
Pyrene	0.49
Silver	0.5
Zinc	120

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
3. Orthoimagery © First Base Solutions, 2013.

May 2014
122120153

Client/Project
Town of Midland
Supplemental Phase II ESA
288 and 420 Bayshore Drive

Figure No.
6

Title
Sediment Analytical Results, Table 9 SCS

\\cd1004-f011\WorK_group\01221\active\122140012_data_base_mgmt\Databases\122120153 - Bayshore Dr. Midland\Drawing\MXD\Phase II ESA Supplemental\122120153_PhIIESAsupp_Fig06_ExcdSediment.mxd
Revised: 2014-05-28 By: mkirkpatrick

588250 588500 588750 589000

4957000 4956750 4956500

N

TS3-1	
	04/11/2014
Copper	< 1.0 / **1.3**

TS1-1		
	04/10/2014	04/28/2014
Zinc	**22**	< 5.0

TS1-1
TS2-3
TS3-1
TR-3
Shed

Bayshore Drive
Frank Street
William Street
Lindsay Street
Gloucester Street
George Street
Bay Street
Barnett Avenue
Charles Street
Edgehill Drive

0 100 200 m
1:3,000

Legend

- Approximate Site Boundary
- Approximate Surface Water Sample Location (Stantec)
- Parameters Tested Do Not Exceed Regulatory Standards (Table 2)
- Parameters Tested Exceed Regulatory Standards (Table 2)

Sample ID — TS1-1
Parameter — Zinc
04/10/2014 — Sample Date
22 / 21 — Duplicate Value (µg/L)
Value (µg/L)

PWQO Table 2 SCS	
Constituent	**Standard (µg/L)**
Copper	1
Zinc	20

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
3. Orthoimagery © First Base Solutions, 2013.

May 2014
122120153

Client/Project
Town of Midland
Supplemental Phase II ESA
288 and 420 Bayshore Drive

Figure No.
7

Title
Surface Water Analytical Results, PWQO

\\cd1004-f01\Work_group\01221\active\122140012_data_base_mgmt\Databases\122120153 - Bayshore Dr. Midland\Drawing\MXD\PhaseIIESASupp_Fig07_ExcdSurfWater.mxd
Revised: 2014-05-28 By: mkirkpatrick