

**Summary Action Report**  
**Structure B20092243 (MTO Site No. )**  
**Old School Road, 0.45 km West of Torbram Road**

Inspection Date 06/10/2021 mm/dd/yyyy

Condition Index Value (BCI) **56.56**

Next Biennial Inspection 06/10/2023 mm/dd/yyyy

Current Rep. Value **\$749,507**

**Additional Investigations**

Investigation	Priority	Cost	Investigation	Priority	Cost
Detailed Deck Condition Survey	Normal	\$15,000			
Additional investigations required see page 3 for details.					

**Performance Deficiencies**

No Performance Deficiencies

**Maintenance Needs**

No Maintenance Needs

**Repair/Rehabilitation**

Element Group	Element	Repair/Rehabilitation			Priority	Cost
Decks	Soffit - Thick Slab	Interior	Rehab	Patch soffit	1-5 yrs	\$20,000
Decks	Soffit - Thick Slab	Exterior	Rehab	Patch repair soffit	1-5 yrs	\$15,000
Abutments	Abutment Walls		Rehab	Patch repair	1-5 yrs	\$5,000
<b>Total Repair/Rehabilitation Cost</b>						<b>\$40,000</b>

Town of Caledon	100%	\$88,000.00	<b>Total Associated Work Cost</b>	<b>\$48,000</b>
	%		<b>Total Cost</b>	<b>\$88,000</b>

**Overall Comments**


Patch soffit and abutments.

# Municipal Structure Inspection Form

Structure Number:

**B20092243**

## Inventory Data

<b>Structure Name</b>		Old School Road, 0.45 km West of Torbram Road		<b>Hwy No.</b>		<b>Key Photo</b>		
<b>Cross. Type Over</b>		<input checked="" type="checkbox"/> Road <input type="checkbox"/> Rail <input type="checkbox"/> Ped <input type="checkbox"/> Nav. Water <input type="checkbox"/> Non-Nav. Wat. <input type="checkbox"/> Other						
<b>Cross. Type Under</b>		<input type="checkbox"/> Road <input type="checkbox"/> Rail <input type="checkbox"/> Ped <input type="checkbox"/> Nav. Water <input checked="" type="checkbox"/> Non-Nav. Wat. <input type="checkbox"/> Other						
<b>Road Name</b>		Old School Road						
<b>Structure Location</b>		Lot 22/23, Concession 5E, 0.45 km West of Torbram Road						
<b>Latitude</b>	43.79908	<b>Longitude</b>	-79.80227	<b>Cur. Rep. Value</b>	\$749,507			
<b>Owner(s)/ % Share</b>	Town of Caledon	100%						
<b>MTO Region</b>		Central		<b>Road Side Env.</b>	Rural			
<b>MTO District</b>		Central		<b>Road Class</b>	Local			
<b>Old County</b>		Oxford		<b>Lane Type</b>	Regular			
<b>Geographic Twp.</b>		Caledon		<b>Posted Speed</b>	70	<b>No. of Lanes</b>	2	
<b>Structure Type</b>		Solid Slab		<b>AA DT</b>	2045	<b>Pct. Trucks</b>	1	
<b>Structure Material</b>		Reinforced Cast-in-Place Concrete		<b>Inspection Route Sequence</b>				
<b>Articulation</b>		Fixed		<b>Interchange Number</b>				
<b>Total Deck Length</b>		5.8 m	<b>Road Width</b>	7.7 m	<b>Interchange Structure Number</b>			
<b>Surface Width</b>			<b>Overall Width</b>	13.4 m				
<b>Vert. Clear.</b>			<b>Detour Length</b>	7.55 km	<b>Skew Angle</b>	0°		
<b>Total Deck Area</b>		77.72 m <sup>2</sup>	<b>No. of Spans</b>	1	<b>Fill on Structure</b>	0.2 m	<b>Struct. Dir.</b>	East/West
<b>Special Routes</b>		<input type="checkbox"/> Transit <input type="checkbox"/> School <input type="checkbox"/> Truck <input type="checkbox"/> Bicycle		<b>Insp. Duration</b>	1.5 hr			

\*\* Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capital planning should consider site specific cost factors and requirements for widening or lengthening of the structure.

### Spans

Span Name	Span Length	Span Name	Span Length
1	5.0 m		

## Historical Data

<b>Year Built</b>	1955	<b>Year of Last Major Rehab</b>	
<b>Year Superstruct Const.</b>		<b>Contract No. When Built</b>	
<b>Last OSIM Inspection</b>	06/14/2019	<b>Last Evaluation</b>	
<b>Last Enhanced OSIM</b>		<b>Current Load Limit</b>	<input type="checkbox"/> t <input type="checkbox"/> t <input type="checkbox"/> t
<b>Last Enhanced Access</b>		<b>Load Limit By-Law No.</b>	
<b>Last Underwater Insp.</b>		<b>By-Law Expiry Date</b>	
<b>Last Condition Survey</b>			

### Work History

Rehab Date	Rehab Description
1 / 1 / 2018	East approach resurfaced

### Investigation History



**Municipal Structure Inspection Form**

**Structure Number:**

**B20092243**

**Field Inspection Information:**

**Inspection Date**  mm/dd/yyyy  Multi Day Inspection  OSIM  Enhanced OSIM **BCI**

**Inspector**  **Eng. Responsible**

**Others in Party**

**Access Equip.**  Lift  Ladder  Boat  Bridge Master Other

**Other Equip.**

**Weather**  **Temperature**  °C

**Additional Investigations Required:**

Investigation	Priority			Estimated Cost
	None	Normal	Urgent	
Material Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Detailed Deck Condition Survey	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$15,000"/>
Delamination Survey of Asphalt-Covered Deck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Concrete Substructure Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Detailed Coating Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Detailed Timber Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Post-Tensioned Strand Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Underwater Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Fatigue Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Seismic Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Structure Evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Deformations, Settlements, and Movements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Crack Widths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Horizontal Movements of face	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Vertical Movements of overall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Local Movements or deterioration of facing elements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Horizontal Movements within overall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Vertical Movements within overall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Lateral earth pressure at the back of facing elements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
<b>Investigation Notes</b>				<b>Total Cost</b> <input type="text" value="\$0"/>
Detailed deck condition survey recommended due to deterioration of the soffit and to confirm rehabilitation.				

# Municipal Structure Inspection Form

Structure Number:

**B20092243**

## Overall Structure Notes:

**Recommended Work on Structure**     None     Rehab     Replace     Remove

**Timing of Recommended Work**     None     Now     1 to 5 years     6 to 10 years

**Overall Comments**

Patch soffit and abutments.

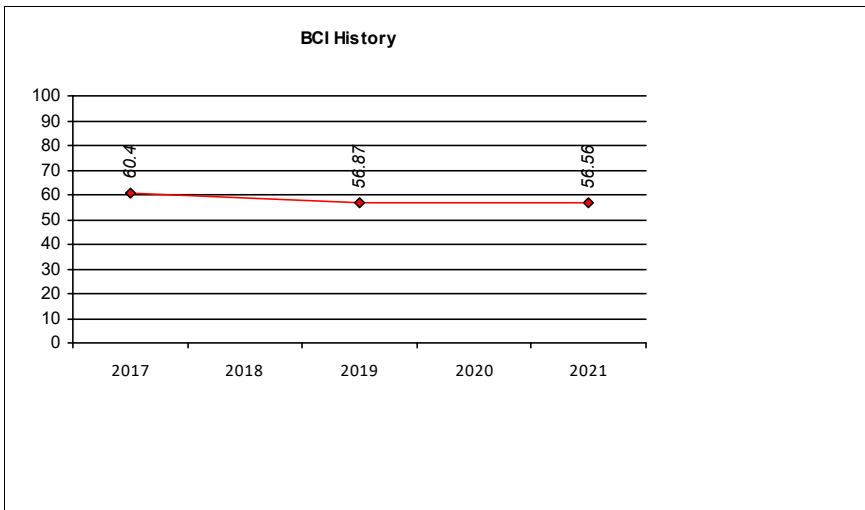
**BCI Change Justification**

**Next Inspection**     mm/dd/yyyy

**Estimated Load Limit**     t     t     t

**BCI History**

Insp. Date	BCI	Inspector
14-Jun-17	60.4	C. Harper, P. Eng.
14-Jun-19	56.87	D. Paul
10-Jun-21	56.56	D. Paul



All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

**Standard Codes**

**Suspected Performance Deficiencies**

- |   |  |                                   |
|---|--|-----------------------------------|
| 01 Load carrying capacity                         | 06 Bearing not uniformly loaded/unstable | 12 Slippery surfaces              |
| 02 Excessive deformations (deflections/rotations) | 07 Jammed expansion joint                | 13 Flooding/channel blockage      |
| 03 Continuing settlement                          | 08 Pedestrian/vehicular hazard           | 14 Undermining of foundation      |
| 04 Continuing movements                           | 09 Rough riding surface                  | 15 Unstable embankments           |
| 05 Seized bearings                                | 10 Surface ponding                       | 16 Other performance deficiencies |
|   | 11 Deck/Wall drainage                    |                                   |

**Maintenance Needs**

- |                             |                              |  |
|-----------------------------|------------------------------|--|
| 01 N/A                      | 07 Structural Steel Repair   | 13 Erosion Control at Bridges            |
| 02 Bridge Cleaning          | 08 Concrete Repair           | 14 Concrete Sealing                      |
| 03 Railing System Repair    | 09 Timber Repair             | 15 N/A                                   |
| 04 N/A                      | 10 Works for Modular bridges | 16 Works for Drainage System             |
| 05 Bridge Deck Joint Repair | 11 Animal/Pest Control       | 17 Scaling (Loose Concrete or ACR Steel) |
| 06 N/A                      | 12 Bridge Surface Repair     | 18 Other Maintenance                     |

**Municipal Structure Inspection Form**

**Structure Number:**

**B20092243**

**Element Data**

**Approaches - Wearing Surface**

<b>Element Group</b>	Approaches				<b>Length</b>	6.00	<b>Width</b>	7.70
<b>Element Name</b>	Wearing Surface				<b>Height</b>	0.00	<b>Count</b>	2.00
<b>Location</b>	East and West				<b>Total Quantity</b>		92.40	
<b>Material</b>	Asphalt				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	sq. m	18.48	73.92	0.00	0.00	<input checked="" type="checkbox"/> Severe		

**Comments**  
 Light cracks, asphalt patches, monitoring wells at West and East approaches, East approach resurfaced in 2018.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Decks - Wearing Surface**

<b>Element Group</b>	Decks				<b>Length</b>	5.80	<b>Width</b>	7.70
<b>Element Name</b>	Wearing Surface				<b>Height</b>	0.08	<b>Count</b>	1.00
<b>Location</b>	Top of Deck				<b>Total Quantity</b>		44.66	
<b>Material</b>	Asphalt				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	sq. m	0.00	44.66	0.00	0.00	<input checked="" type="checkbox"/> Severe		

**Comments**  
 Light cracks.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Municipal Structure Inspection Form**

**Structure Number:**

**B20092243**

**Decks - Deck Top**

<b>Element Group</b>	Decks				<b>Length</b>	5.80	<b>Width</b>	13.40
<b>Element Name</b>	Deck Top				<b>Height</b>	0.00	<b>Count</b>	0.00
<b>Location</b>	Below Asphalt				<b>Total Quantity</b>		77.72	
<b>Material</b>	Cast-in-place Concrete				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Cast-in-Place Conc on Supports				<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input checked="" type="checkbox"/> Moderate		
	sq. m	0.00	63.72	6.00	8.00	<input type="checkbox"/> Severe		

**Comments**  
Based on inspection prior to resurfacing.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Decks - Soffit - Thick Slab**

<b>Element Group</b>	Decks				<b>Length</b>	5.00	<b>Width</b>	11.40
<b>Element Name</b>	Soffit - Thick Slab		Interior		<b>Height</b>	0.00	<b>Count</b>	1.00
<b>Location</b>	Underside of Deck				<b>Total Quantity</b>		57.00	
<b>Material</b>	Cast-in-place Concrete				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input checked="" type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	sq. m	0.00	34.00	12.00	11.00	<input type="checkbox"/> Severe		

**Comments**  
Light to severe spalls and delaminations, light to severe honeycombing, wet areas.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments
Rehab	1-5 yrs	\$20,000	Patch soffit

**Municipal Structure Inspection Form**

**Structure Number:**

**B20092243**

**Decks - Soffit - Thick Slab**

<b>Element Group</b>	Decks				<b>Length</b>	5.00	<b>Width</b>	2.60
<b>Element Name</b>	Soffit - Thick Slab	Exterior		<b>Height</b>	0.00	<b>Count</b>	0.00	
<b>Location</b>	Underside of Deck				<b>Total Quantity</b>		13.00	
<b>Material</b>	Cast-in-place Concrete				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input checked="" type="checkbox"/> Moderate		
	sq. m	0.00	0.00	5.00	8.00	<input type="checkbox"/> Severe		

**Comments**  
 Light to severe scaling, extensive severe spalling and delaminations at both ends, wet areas.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments
Rehab	1-5 yrs	\$15,000	Patch repair soffit

**Abutments - Abutment Walls**

<b>Element Group</b>	Abutments				<b>Length</b>	0.00	<b>Width</b>	13.40
<b>Element Name</b>	Abutment Walls			<b>Height</b>	1.00	<b>Count</b>	2.00	
<b>Location</b>	East and West				<b>Total Quantity</b>		26.80	
<b>Material</b>	Cast-in-place Concrete				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Legs of Rigid Frame				<b>Environment</b>			
<b>Protection System</b>					<input checked="" type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	sq. m	0.00	23.80	2.00	1.00	<input type="checkbox"/> Severe		

**Comments**  
 Wide crack/gap at cold joint at Northeast, Northwest and Southeast, light to severe honeycombing, light scaling, birds nest.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments
Rehab	1-5 yrs	\$5,000	Patch repair

**Municipal Structure Inspection Form**

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**B20092243**

**Embankments & Streams - Embankments**

<b>Element Group</b>	Embankments & Streams				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Embankments				<b>Height</b>	0.00	<b>Count</b>	4.00
<b>Location</b>	All Quadrants						<b>Total Quantity</b>	4.00
<b>Material</b>	Vegetation				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>	Vegetation				<input checked="" type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	Each	0.00	4.00	0.00	0.00	<input type="checkbox"/> Severe		

**Comments**  
 No comments.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Embankments & Streams - Slope Protection**

<b>Element Group</b>	Embankments & Streams				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Slope Protection				<b>Height</b>	0.00	<b>Count</b>	4.00
<b>Location</b>	All Quadrants						<b>Total Quantity</b>	4.00
<b>Material</b>	Vegetation				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Vegetation				<b>Environment</b>			
<b>Protection System</b>					<input checked="" type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	Each	0.00	4.00	0.00	0.00	<input type="checkbox"/> Severe		

**Comments**  
 No comments.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Municipal Structure Inspection Form**

**Structure Number:**

**B20092243**

**Embankments & Streams - Streams & Waterways**

<b>Element Group</b>	Embankments & Streams				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Streams & Waterways				<b>Height</b>	0.00	<b>Count</b>	0.00
<b>Location</b>	Below Structure				<b>Total Quantity</b>		1.00	
<b>Material</b>					<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	All	0.00	0.00	1.00	0.00	<input type="checkbox"/> Severe		

**Comments**  
 Moderate aggradation on South end, light scour at Southeast and Southwest.  
 Flow: North to South.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Foundations - Foundations (below ground level)**

<b>Element Group</b>	Foundations				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Foundations (below ground level)				<b>Height</b>	0.00	<b>Count</b>	0.00
<b>Location</b>	Below Abutments				<b>Total Quantity</b>		0.00	
<b>Material</b>					<input checked="" type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	N/A					<input type="checkbox"/> Severe		

**Comments**  
 Limited inspection.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments



**Municipal Structure Inspection Form**

**Structure Number:**

**B20092243**

<b>Repair/Rehabilitation Required</b>					
<b>Element Group</b>	<b>Element</b>	<b>Repair/Rehabilitation</b>		<b>Priority</b>	<b>Cost</b>
Abutments	Abutment Walls		Rehab	1-5 yrs	\$5,000
Decks	Soffit - Thick Slab	Interior	Rehab	1-5 yrs	\$20,000
Decks	Soffit - Thick Slab	Exterior	Rehab	1-5 yrs	\$15,000
<b>Total Repair/Rehabilitation Cost</b>					<b>\$40,000</b>

**Associated Work**

	<b>Comments</b>		<b>Estimated Cost</b>
<b>Approaches</b>	<input type="text"/>		\$0
<b>Detours</b>	<input type="text"/>		\$0
<b>Traffic Control</b>	<input type="text"/>		\$10,000
<b>Utilities</b>	<input type="text"/>		\$0
<b>Right-of-Way</b>	<input type="text"/>		\$0
<b>Environmental Study</b>	<input type="text"/>		\$0
<b>Other</b>	Mobilization, Bonds, Access		\$15,000
<b>Contingencies</b>	<input type="text"/>	15%	** \$10,000
<b>Engineering</b>	<input type="text"/>	20%	** \$13,000
<b>Total Associated Work Cost</b>			<b>\$48,000</b>
<b>Total Repair/Rehabilitation Cost</b>			<b>\$40,000</b>
<b>Total Cost</b>			<b>\$88,000</b>
Town of Caledon Share @ 100%			\$88,000

\*\* If based on a percentage calculated values rounded-up to the nearest thousand dollars.

**Justification**



**Looking East at Bridge - Photo 1**



**Looking West at Bridge - Photo 2**





**North Elevation - Photo 3**



**South Elevation - Photo 4**





**Approaches - Wearing Surface - Monitoring Well - East Approach - Photo 5**



**Approaches - Wearing Surface - Monitoring Well - West Approach - Photo 6**





**Approaches - Wearing Surface - Light Crack - West Approach - Photo 7**



**Approaches - Wearing Surface - East Approach Recently Resurfaced - Photo 8**





**Decks - Wearing Surface - Light Crack - Photo 9**



**Decks - Soffit - Thick Slab - Exterior - Severe Scaling - South - Photo 10**





**Decks - Soffit - Thick Slab - Exterior - Severe Spalls \_ Delaminations - South - Photo 11**



**Decks - Soffit - Thick Slab - Exterior - Severe Spalls - North - Photo 12**



**Decks - Soffit - Thick Slab - Typical - Photo 13**



**Decks - Soffit - Thick Slab - Interior - Medium Delamination - Photo 14**





**Decks - Soffit - Thick Slab - Interior - Severe Spall - Photo 15**



**Decks - Soffit - Thick Slab - Interior - Severe Delaminations - Photo 16**



**Decks - Soffit - Thick Slab - Interior - Severe Spalls - Photo 17**



**Abutments - Abutment Walls - Typical - East - Photo 18**





**Abutments - Abutment Walls - Typical - West - Photo 19**



**Abutments - Abutment Walls - Light to Severe Honeycombing - Photo 20**





**Abutments - Abutment Walls - Birds Nests - Photo 21**



**Abutments - Abutment Walls - Wide Gap at Cold Joint - Northwest - Photo 22**





**Abutments - Abutment Walls - Wide Gap at Cold Joint - Northeast - Photo 23**



**Looking North Upstream - Photo 24**





**Looking South Downstream - Photo 25**



**Embankments and Streams - Streams\_Waterways - Watercourse Below Bridge - Photo 26**





**Embankments and Streams - Streams\_Waterways - Light Scour - Southeast - Photo 27**



**Embankments and Streams - Streams\_Waterways - Aggradation of Watercourse - South - Photo 28**

**Summary Action Report**  
**Structure C20060216 (MTO Site No. )**  
**Bramalea Road, 1.69 km North of Mayfield Road**

Inspection Date 06/10/2021 mm/dd/yyyy  
 Next Biennial Inspection 06/10/2023 mm/dd/yyyy

Condition Index Value (BCI) **58.89**  
 Current Rep. Value **\$1,215,511**

**Additional Investigations**

Investigation	Priority	Cost	Investigation	Priority	Cost
No additional investigations required.					

**Performance Deficiencies**

No Performance Deficiencies

**Maintenance Needs**

Element Group	Element	Maintenance Required	Priority	Comment
Embankments & Streams	Streams & Waterways	Other	2 yr	Remove debris from watercourse

**Repair/Rehabilitation**

Element Group	Element	Repair/Rehabilitation		Priority	Cost
Culverts	Barrels	Rehab	Patch barrel	1-5 yrs	\$53,000
Embankments & Streams	Embankments	Rehab	Restore embankment	1-5 yrs	\$5,000
<b>Total Repair/Rehabilitation Cost</b>					<b>\$58,000</b>

Town of Caledon	100%	\$126,000.00	<b>Total Associated Work Cost</b>	<b>\$68,000</b>
			<b>Total Cost</b>	<b>\$126,000</b>

**Overall Comments**

Patch barrel soffit and walls. Restore embankment.




# Municipal Structure Inspection Form

Structure Number:

**C20060216**

## Inventory Data

<b>Structure Name</b>		Bramalea Road, 1.69 km North of Mayfield Road		<b>Hwy No.</b>		<b>Key Photo</b>	
<b>Cross. Type Over</b>		<input checked="" type="checkbox"/> Road <input type="checkbox"/> Rail <input type="checkbox"/> Ped <input type="checkbox"/> Nav. Water <input type="checkbox"/> Non-Nav. Wat. <input type="checkbox"/> Other					
<b>Cross. Type Under</b>		<input type="checkbox"/> Road <input type="checkbox"/> Rail <input type="checkbox"/> Ped <input type="checkbox"/> Nav. Water <input checked="" type="checkbox"/> Non-Nav. Wat. <input type="checkbox"/> Other					
<b>Road Name</b>		Bramalea Road					
<b>Structure Location</b>		Lot 20, Concession 4E/5E, 1.69 km North of Mayfield Road					
<b>Latitude</b>	43.78297	<b>Longitude</b>	-79.79648	<b>Cur. Rep. Value</b>	\$1,215,511		
<b>Owner(s)/ % Share</b>	Town of Caledon	100%					
<b>MTO Region</b>	Central	<b>Heritage Status</b>	Not Considered for Designation				
<b>MTO District</b>	Central	<b>Road Side Env.</b>	Rural				
<b>Old County</b>	Oxford	<b>Road Class</b>	Local				
<b>Geographic Twp.</b>	Caledon	<b>Lane Type</b>	Regular				
<b>Structure Type</b>	Rectangular Culvert	<b>Posted Speed</b>	80	<b>No. of Lanes</b>	2		
<b>Structure Material</b>	Reinforced Cast-in-Place Concrete	<b>AADT</b>	2865	<b>Pct. Trucks</b>	1		
<b>Articulation</b>		<b>Inspection Route Sequence</b>					
<b>Total Deck Length</b>	18.2 m	<b>Road Width</b>	7.5 m	<b>Platform Width</b>	10.54 m		
<b>Overall Width</b>	5.7 m	<b>Vert. Clear.</b>		<b>Detour Length</b>	5.82 km	<b>Skew Angle</b>	0°
<b>Total Deck Area</b>	103.74 m <sup>2</sup>	<b>No. of Spans</b>	1	<b>Fill on Structure</b>	2 m	<b>Struct. Dir.</b>	East/West
<b>Special Routes</b>	<input type="checkbox"/> Transit <input checked="" type="checkbox"/> School <input type="checkbox"/> Truck <input type="checkbox"/> Bicycle		<b>Insp. Duration</b>	1 hr			

\*\* Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capital planning should consider site specific cost factors and requirements for widening or lengthening of the structure.

### Spans

Span Name	Span Length	Span Name	Span Length
1	4.9 m		

## Historical Data

<b>Year Built</b>	1950	yyyy	<b>Year of Last Major Rehab</b>		yyyy
<b>Year Superstruct Const.</b>		mm/dd/yyyy	<b>Contract No. When Built</b>		
<b>Last OSIM Inspection</b>	06/14/2021	mm/dd/yyyy	<b>Last Evaluation</b>		mm/dd/yyyy
<b>Last Enhanced OSIM</b>		mm/dd/yyyy	<b>Current Load Limit</b>	<input type="checkbox"/> t	<input type="checkbox"/> t
<b>Last Enhanced Access</b>		mm/dd/yyyy	<b>Load Limit By-Law No.</b>		mm/dd/yyyy
<b>Last Underwater Insp.</b>		mm/dd/yyyy	<b>By-Law Expiry Date</b>		mm/dd/yyyy
<b>Last Condition Survey</b>		mm/dd/yyyy			

### Work History

### Investigation History

**Municipal Structure Inspection Form**

**Structure Number:**

**C20060216**

**Field Inspection Information:**

**Inspection Date**  mm/dd/yyyy  Multi Day Inspection  OSIM  Enhanced OSIM **BCI**

**Inspector**  **Eng. Responsible**

**Others in Party**

**Access Equip.**  Lift  Ladder  Boat  Bridge Master Other

**Other Equip.**

**Weather**  **Temperature**  °C

**Additional Investigations Required:**

Investigation	Priority			Estimated Cost
	None	Normal	Urgent	
Material Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Detailed Deck Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Delamination Survey of Asphalt-Covered Deck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Concrete Substructure Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Detailed Coating Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Detailed Timber Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Post-Tensioned Strand Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Underwater Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Fatigue Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Seismic Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Structure Evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Deformations, Settlements, and Movements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Crack Widths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Horizontal Movements of face	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Vertical Movements of overall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Local Movements or deterioration of facing elements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Horizontal Movements within overall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Vertical Movements within overall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Lateral earth pressure at the back of facing elements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
<b>Investigation Notes</b>				<b>Total Cost</b> <input type="text" value="\$0"/>

**Municipal Structure Inspection Form**

**Structure Number:**

**C20060216**

**Overall Structure Notes:**

**Recommended Work on Structure**     None     Rehab     Replace     Remove

**Timing of Recommended Work**     None     Now     1 to 5 years     6 to 10 years

**Overall Comments**    Patch barrel soffit and walls. Restore embankment.

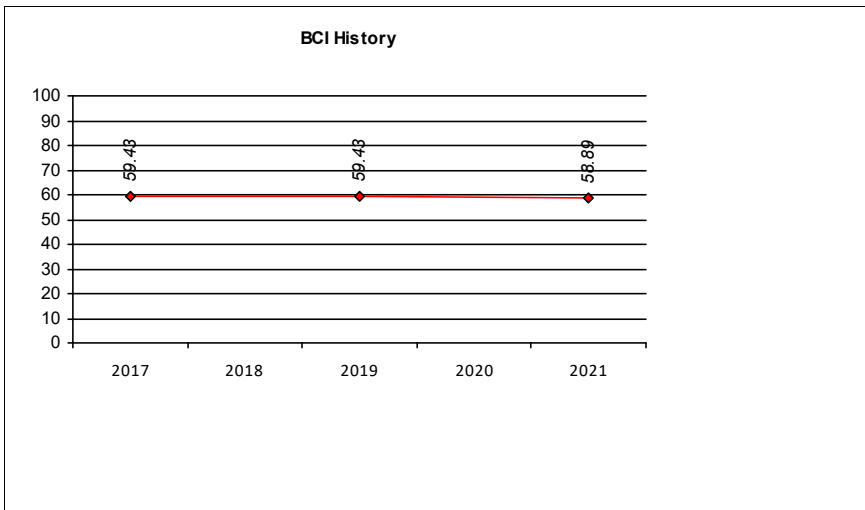
**BCI Change Justification**

**Next Inspection**     mm/dd/yyyy

**Estimated Load Limit**     t     t     t

**BCI History**

Insp. Date	BCI	Inspector
15-Jun-17	59.43	J. Noonan
14-Jun-19	59.43	D. Paul
10-Jun-21	58.89	D. Paul



All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

**Standard Codes**

**Suspected Performance Deficiencies**

- |   |  |                                   |
|---|--|-----------------------------------|
| 01 Load carrying capacity                         | 06 Bearing not uniformly loaded/unstable | 12 Slippery surfaces              |
| 02 Excessive deformations (deflections/rotations) | 07 Jammed expansion joint                | 13 Flooding/channel blockage      |
| 03 Continuing settlement                          | 08 Pedestrian/vehicular hazard           | 14 Undermining of foundation      |
| 04 Continuing movements                           | 09 Rough riding surface                  | 15 Unstable embankments           |
| 05 Seized bearings                                | 10 Surface ponding                       | 16 Other performance deficiencies |
|   | 11 Deck/Wall drainage                    |                                   |

**Maintenance Needs**

- |                             |                              |  |
|-----------------------------|------------------------------|--|
| 01 N/A                      | 07 Structural Steel Repair   | 13 Erosion Control at Bridges            |
| 02 Bridge Cleaning          | 08 Concrete Repair           | 14 Concrete Sealing                      |
| 03 Railing System Repair    | 09 Timber Repair             | 15 N/A                                   |
| 04 N/A                      | 10 Works for Modular bridges | 16 Works for Drainage System             |
| 05 Bridge Deck Joint Repair | 11 Animal/Pest Control       | 17 Scaling (Loose Concrete or ACR Steel) |
| 06 N/A                      | 12 Bridge Surface Repair     | 18 Other Maintenance                     |

**Municipal Structure Inspection Form**

**Structure Number:**

**C20060216**

**Element Data**

**Approaches - Wearing Surface**

<b>Element Group</b>	Approaches				<b>Length</b>	17.70	<b>Width</b>	7.50
<b>Element Name</b>	Wearing Surface				<b>Height</b>	0.08	<b>Count</b>	1.00
<b>Location</b>	Over Culvert & Approaches				<b>Total Quantity</b>		132.75	
<b>Material</b>	Asphalt				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
<b>Comments</b>	sq. m	0.00	132.75	0.00	0.00	<input checked="" type="checkbox"/> Severe		

Light cracks.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Culverts - Barrels**

<b>Element Group</b>	Culverts				<b>Length</b>	18.20	<b>Width</b>	4.90
<b>Element Name</b>	Barrels				<b>Height</b>	1.50	<b>Count</b>	1.00
<b>Location</b>	Below Roadway				<b>Total Quantity</b>		232.96	
<b>Material</b>	Cast-in-place Concrete				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Box				<b>Environment</b>			
<b>Protection System</b>					<input checked="" type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
<b>Comments</b>	sq. m	0.00	158.96	44.00	30.00	<input type="checkbox"/> Severe		

Extensive light to severe delaminations on barrel soffit, debonded concrete patches, concrete patches, narrow stained and unstained cracks on barrel walls, delaminations on barrel walls at ends, wet areas at barrel ends, light to severe erosion at waterline, light to medium scour on invert slab, exposed corroded rebar chairs, surface rust staining, efflorescence, incrustation, tree growing over barrel at West end.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments
Rehab	1-5 yrs	\$53,000	Patch barrel

**Municipal Structure Inspection Form**

**Structure Number:**

**C20060216**

**Embankments & Streams - Embankments**

<b>Element Group</b>	Embankments & Streams				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Embankments				<b>Height</b>	0.00	<b>Count</b>	4.00
<b>Location</b>	All Quadrants				<b>Total Quantity</b>			
<b>Material</b>	Vegetation				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>	Vegetation				<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	Each	0.00	2.00	1.00	1.00	<input type="checkbox"/> Severe		
<b>Comments</b>								

Moderate erosion at Southwest quadrant, severe erosion at Northwest quadrant, light erosion at Southeast quadrant.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments
Rehab	1-5 yrs	\$5,000	Restore embankment

**Embankments & Streams - Slope Protection**

<b>Element Group</b>	Embankments & Streams				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Slope Protection				<b>Height</b>	0.00	<b>Count</b>	4.00
<b>Location</b>	All Quadrants				<b>Total Quantity</b>			
<b>Material</b>	Vegetation				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Vegetation				<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	Each	0.00	2.00	1.00	1.00	<input type="checkbox"/> Severe		
<b>Comments</b>								

Loss of slope protection in the Northwest quadrant.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Municipal Structure Inspection Form**

**Structure Number:**

**C20060216**

**Embankments & Streams - Streams & Waterways**

<b>Element Group</b>	Embankments & Streams				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Streams & Waterways				<b>Height</b>	0.00	<b>Count</b>	1.00
<b>Location</b>	Through Structure						<b>Total Quantity</b>	1.00
<b>Material</b>					<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	All	0.00	1.00	0.00	0.00	<input type="checkbox"/> Severe		

**Comments**  
Build-up of debris at inlet. No flow at the time of inspection.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None	Other	2 yr	Remove debris from watercourse

Rehab/Repair Recommendations	Priority	Cost	Comments

**Foundations - Foundations (below ground level)**

<b>Element Group</b>	Foundations				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Foundations (below ground level)				<b>Height</b>	0.00	<b>Count</b>	0.00
<b>Location</b>	Below Barrel						<b>Total Quantity</b>	0.00
<b>Material</b>					<input checked="" type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	N/A					<input type="checkbox"/> Severe		

**Comments**  
Limited inspection.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Municipal Structure Inspection Form**

**Structure Number:**

**C20060216**

<b>Repair/Rehabilitation Required</b>				
<b>Element Group</b>	<b>Element</b>	<b>Repair/Rehabilitation</b>	<b>Priority</b>	<b>Cost</b>
Culverts	Barrels	Rehab	1-5 yrs	\$53,000
Embankments & Streams	Embankments	Rehab	1-5 yrs	\$5,000
<b>Total Repair/Rehabilitation Cost</b>				<b>\$58,000</b>

**Associated Work**

	<b>Comments</b>	<b>Estimated Cost</b>
<b>Approaches</b>	<input type="text"/>	\$0
<b>Detours</b>	<input type="text"/>	\$0
<b>Traffic Control</b>	<input type="text"/>	\$10,000
<b>Utilities</b>	<input type="text"/>	\$0
<b>Right-of-Way</b>	<input type="text"/>	\$0
<b>Environmental Study</b>	<input type="text"/>	\$0
<b>Other</b>	Mobilization, Bonds, Access, Unwatering	\$25,000
<b>Contingencies</b>	<input type="text"/> 15%	** \$14,000
<b>Engineering</b>	<input type="text"/> 20%	** \$19,000
<b>Total Associated Work Cost</b>		<b>\$68,000</b>
<b>Total Repair/Rehabilitation Cost</b>		<b>\$58,000</b>
<b>Total Cost</b>		<b>\$126,000</b>
Town of Caledon Share @ 100%		\$126,000

\*\* If based on a percentage calculated values rounded-up to the nearest thousand dollars.

**Justification**





**Looking North at Roadway over Culvert - Photo 1**



**Looking South at Roadway over Culvert - Photo 2**





**East Elevation - Photo 3**



**West Elevation - Photo 4**





**Approaches - Wearing Surface - Light Crack - Photo 5**



**Looking East through Barrel from End - Photo 6**



**Looking East through Barrel at Midspan - Photo 7**



**Looking West through Barrel at Midspan - Photo 8**





**Looking West through Barrel from End - Photo 9**



**Culverts - Barrels - Severe Erosion on Wall - North Wall - Photo 10**





**Culverts - Barrels - Debonded Concrete Patch - South Wall - Photo 11**



**Culverts - Barrels - Severe Delamination on Soffit - Photo 12**



**Culverts - Barrels - Debonded Concrete Patch on Soffit - Photo 13**



**Culverts - Barrels - Severe Delaminations on Soffit - Photo 14**





**Culverts - Barrels - Severe Spall on Soffit - Photo 15**



**Looking East Upstream - Photo 16**





**Looking West Downstream - Photo 17**



**Embankments and Streams - Embankments - Medium Erosion - SW - Photo 18**





**Embankments and Streams - Embankments - Tree Growing over Barrel - West - Photo 19**



**Embankments and Streams - Embankments - Severe Erosion - Northwest - Photo 20**





**Embankments and Streams - Streams\_Waterways - Trees in Watercourse - East - Photo 21**



**Embankments and Streams - Streams\_Waterways - Watercourse through Structure - Photo 22**

**Summary Action Report**  
**Structure C20066401 (MTO Site No. )**  
**Torbram Road, 0.46 km North of Mayfield Road**

Inspection Date 06/14/2021 mm/dd/yyyy

Condition Index Value (BCI) 70.76

Next Biennial Inspection 06/14/2023 mm/dd/yyyy

Current Rep. Value \$1,618,916

**Additional Investigations**

Investigation	Priority	Cost	Investigation	Priority	Cost
No additional investigations required.					

**Performance Deficiencies**

No Performance Deficiencies

**Maintenance Needs**

No Maintenance Needs

**Repair/Rehabilitation**

Element Group	Element	Repair/Rehabilitation		Priority	Cost
Culverts	Inlet Components	Rehab	Patch repair and seal crack	6-10 yrs	\$2,500
Culverts	Outlet Components	Rehab	Patch repair and seal crack	6-10 yrs	\$2,500
Embankments & Streams	Streams & Waterways	Rehab	Restore undermining	1-5 yrs	\$15,000
<b>Total Repair/Rehabilitation Cost</b>					<b>\$20,000</b>

Town of Caledon	100%	\$68,000.00		<b>Total Associated Work Cost</b>	<b>\$48,000</b>
	%			<b>Total Cost</b>	<b>\$68,000</b>

**Overall Comments**


Repair undermining, repair inlet and outlet cut-off walls and stiffeners.

# Municipal Structure Inspection Form

Structure Number:

**C20066401**

## Inventory Data

<b>Structure Name</b>		Torbram Road, 0.46 km North of Mayfield Road		<b>Hwy No.</b>		<b>Key Photo</b>			
<b>Cross. Type Over</b>		<input checked="" type="checkbox"/> Road <input type="checkbox"/> Rail <input type="checkbox"/> Ped <input type="checkbox"/> Nav. Water <input type="checkbox"/> Non-Nav. Wat. <input type="checkbox"/> Other							
<b>Cross. Type Under</b>		<input type="checkbox"/> Road <input type="checkbox"/> Rail <input type="checkbox"/> Ped <input type="checkbox"/> Nav. Water <input checked="" type="checkbox"/> Non-Nav. Wat. <input type="checkbox"/> Other							
<b>Road Name</b>		Torbram Road							
<b>Structure Location</b>		Lot 18, Concession 5/6E, 0.46 km North of Mayfield Road							
<b>Latitude</b>	43.78536	<b>Longitude</b>	-79.77592	<b>Cur. Rep. Value</b>	\$1,618,916				
<b>Owner(s)/ % Share</b>	Town of Caledon	100%							
<b>MTO Region</b>	Central	<b>Heritage Status</b>	Not Considered for Designation						
<b>MTO District</b>	Central	<b>Road Side Env.</b>	Rural						
<b>Old County</b>	Oxford	<b>Road Class</b>	Local						
<b>Geographic Twp.</b>	Caledon	<b>Lane Type</b>	Regular						
<b>Structure Type</b>	Ellipse Culvert	<b>Posted Speed</b>	70	<b>No. of Lanes</b>	2				
<b>Structure Material</b>	Corrugated Steel Pipe	<b>AADT</b>	2087	<b>Pct. Trucks</b>	1				
<b>Articulation</b>		<b>Inspection Route Sequence</b>							
<b>Total Deck Length</b>	33.5 m	<b>Road Width</b>	7.3 m	<b>Platform Width</b>	10.1 m				
<b>Overall Width</b>	8.6 m	<b>Vert. Clear.</b>		<b>Detour Length</b>	5.83 km	<b>Skew Angle</b>	0°		
<b>Total Deck Area</b>	288.10 m <sup>2</sup>	<b>No. of Spans</b>	1	<b>Fill on Structure</b>	1.3 m	<b>Struct. Dir.</b>	East/West		
<b>Special Routes</b>	<input type="checkbox"/> Transit <input type="checkbox"/> School <input type="checkbox"/> Truck <input type="checkbox"/> Bicycle		<b>Insp. Duration</b>	1 hr					

\*\* Current Replacement Value is based on in kind replacement of the existing structure and calculated using benchmark costs. Capital planning should consider site specific cost factors and requirements for widening or lengthening of the structure.

### Spans

Span Name	Span Length	Span Name	Span Length
1	8.6 m		

## Historical Data

<b>Year Built</b>	1970	yyyy	<b>Year of Last Major Rehab</b>		yyyy
<b>Year Superstruct Const.</b>		mm/dd/yyyy	<b>Contract No. When Built</b>		
<b>Last OSIM Inspection</b>	06/17/2019	mm/dd/yyyy	<b>Last Evaluation</b>		mm/dd/yyyy
<b>Last Enhanced OSIM</b>		mm/dd/yyyy	<b>Current Load Limit</b>	<input type="checkbox"/> t	<input type="checkbox"/> t
<b>Last Enhanced Access</b>		mm/dd/yyyy	<b>Load Limit By-Law No.</b>		mm/dd/yyyy
<b>Last Underwater Insp.</b>		mm/dd/yyyy	<b>By-Law Expiry Date</b>		mm/dd/yyyy
<b>Last Condition Survey</b>		mm/dd/yyyy			

### Work History

Rehab Date	Rehab Description
1 / 1 / 2020	New wearing surface

### Investigation History

**Municipal Structure Inspection Form**

**Structure Number:**

**C20066401**

**Field Inspection Information:**

**Inspection Date**  mm/dd/yyyy  Multi Day Inspection  OSIM  Enhanced OSIM **BCI**   
**Inspector**  **Eng. Responsible**   
**Others in Party**     
**Access Equip.**  Lift  Ladder  Boat  Bridge Master Other   
**Other Equip.**   
**Weather**  **Temperature**  °C

**Additional Investigations Required:**

Investigation	Priority			Estimated Cost
	None	Normal	Urgent	
Material Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Detailed Deck Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Delamination Survey of Asphalt-Covered Deck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Concrete Substructure Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Detailed Coating Condition Survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Detailed Timber Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Post-Tensioned Strand Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Underwater Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Fatigue Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Seismic Investigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Structure Evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Deformations, Settlements, and Movements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
Crack Widths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Horizontal Movements of face	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Vertical Movements of overall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Local Movements or deterioration of facing elements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Horizontal Movements within overall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Vertical Movements within overall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
RSS Lateral earth pressure at the back of facing elements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text" value="\$0"/>
<b>Investigation Notes</b>				<b>Total Cost</b> <input type="text" value="\$0"/>

# Municipal Structure Inspection Form

Structure Number:

C20066401

## Overall Structure Notes:

Recommended Work on Structure     None     Rehab     Replace     Remove

Timing of Recommended Work     None     Now     1 to 5 years     6 to 10 years

**Overall Comments**  
Repair undermining, repair inlet and outlet cut-off walls and stiffeners.

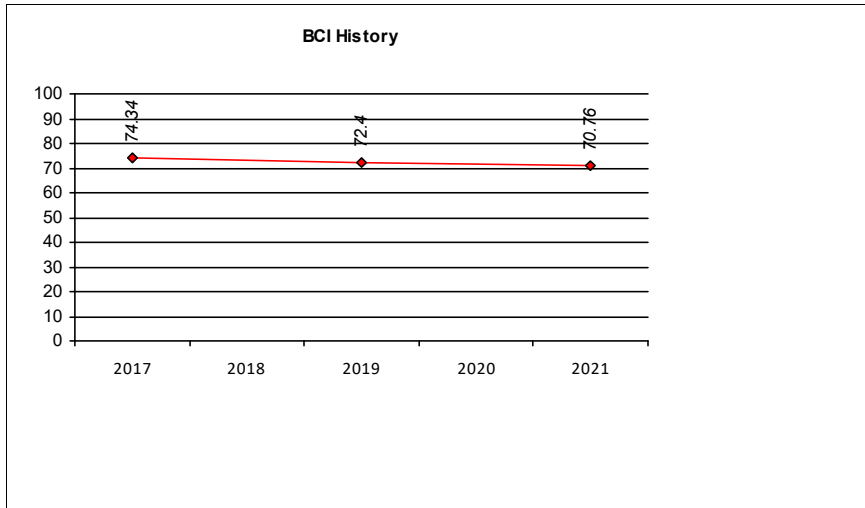
**BCI Change Justification**

Next Inspection     mm/dd/yyyy

Estimated Load Limit     t     t     t

**BCI History**

Insp. Date	BCI	Inspector
15-Jun-17	74.34	C. Harper, P. Eng
17-Jun-19	72.4	C. Sinclair
14-Jun-21	70.76	D. Paul



All BCI values are based on the MTO BCI methodology published in April 2008. As a result, BCI values for 2007 and earlier are approximate only, with potential discrepancies resulting from changes (over time) in the way quantities for certain elements are calculated.

**Standard Codes**

**Suspected Performance Deficiencies**

- |   |  |                                   |
|---|--|-----------------------------------|
| 01 Load carrying capacity                         | 06 Bearing not uniformly loaded/unstable | 12 Slippery surfaces              |
| 02 Excessive deformations (deflections/rotations) | 07 Jammed expansion joint                | 13 Flooding/channel blockage      |
| 03 Continuing settlement                          | 08 Pedestrian/vehicular hazard           | 14 Undermining of foundation      |
| 04 Continuing movements                           | 09 Rough riding surface                  | 15 Unstable embankments           |
| 05 Seized bearings                                | 10 Surface ponding                       | 16 Other performance deficiencies |
|   | 11 Deck/Wall drainage                    |                                   |

**Maintenance Needs**

- |                             |                              |  |
|-----------------------------|------------------------------|--|
| 01 N/A                      | 07 Structural Steel Repair   | 13 Erosion Control at Bridges            |
| 02 Bridge Cleaning          | 08 Concrete Repair           | 14 Concrete Sealing                      |
| 03 Railing System Repair    | 09 Timber Repair             | 15 N/A                                   |
| 04 N/A                      | 10 Works for Modular bridges | 16 Works for Drainage System             |
| 05 Bridge Deck Joint Repair | 11 Animal/Pest Control       | 17 Scaling (Loose Concrete or ACR Steel) |
| 06 N/A                      | 12 Bridge Surface Repair     | 18 Other Maintenance                     |



**Municipal Structure Inspection Form**

**Structure Number:**

**C20066401**

**Element Data**

**Approaches - Wearing Surface**

<b>Element Group</b>	Approaches				<b>Length</b>	20.60	<b>Width</b>	7.30
<b>Element Name</b>	Wearing Surface				<b>Height</b>	0.08	<b>Count</b>	1.00
<b>Location</b>	Approaches and Over Structure				<b>Total Quantity</b>		150.38	
<b>Material</b>	Surface Treatment				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
<b>Comments</b>	sq. m	120.30	30.08	0.00	0.00	<input checked="" type="checkbox"/> Severe		

Surface treatment. New in 2020.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Approaches - Approach Guide Rail**

<b>Element Group</b>	Approaches				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Approach Guide Rail		Extruder		<b>Height</b>	0.00	<b>Count</b>	4.00
<b>Location</b>	All Quadrants				<b>Total Quantity</b>		4.00	
<b>Material</b>	Steel				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
<b>Comments</b>	Each	0.00	4.00	0.00	0.00	<input checked="" type="checkbox"/> Severe		

Extruder end treatments provided in all quadrants.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Municipal Structure Inspection Form**

**Structure Number:**

**C20066401**

**Approaches - Approach Guide Rail**

<b>Element Group</b>	Approaches				<b>Length</b>	0.15	<b>Width</b>	0.15
<b>Element Name</b>	Approach Guide Rail	Posts			<b>Height</b>	0.80	<b>Count</b>	88.00
<b>Location</b>	Over Culvert				<b>Total Quantity</b>			
<b>Material</b>	Steel				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Steel Posts in Steel Flexbeam System				<b>Environment</b>			
<b>Protection System</b>	Hot dip galvanizing				<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	Each	0.00	87.00	1.00	0.00	<input checked="" type="checkbox"/> Severe		

**Comments**  
Crack on post at West over culvert.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Approaches - Approach Guide Rail**

<b>Element Group</b>	Approaches				<b>Length</b>	83.85	<b>Width</b>	0.00
<b>Element Name</b>	Approach Guide Rail				<b>Height</b>	0.35	<b>Count</b>	2.00
<b>Location</b>	East and West Sides				<b>Total Quantity</b>			
<b>Material</b>	Steel				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Steel Flex Beam on steel post				<b>Environment</b>			
<b>Protection System</b>	Hot dip galvanizing				<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	m	0.00	167.70	0.00	0.00	<input checked="" type="checkbox"/> Severe		

**Comments**  
No comments.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Municipal Structure Inspection Form**

**Structure Number:**

**C20066401**

**Accessories - Signs**

<b>Element Group</b>	Accessories				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Signs				<b>Height</b>	0.00	<b>Count</b>	4.00
<b>Location</b>	All Quadrants				<b>Total Quantity</b>			
<b>Material</b>	Aluminum				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	Each	0.00	4.00	0.00	0.00	<input checked="" type="checkbox"/> Severe		

**Comments**  
 Hazard markers provided in all quadrants. Minor damage to hazard marker at Southwest.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Coatings - Railing Systems/Hand Railings**

<b>Element Group</b>	Coatings				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Railing Systems/Hand Railings				<b>Height</b>	0.00	<b>Count</b>	0.00
<b>Location</b>	Guide Rail and Posts				<b>Total Quantity</b>			
<b>Material</b>	Hot Dip Galvanizing				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Hot dip galvanizing				<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	sq. m	0.00	149.90	0.00	0.00	<input checked="" type="checkbox"/> Severe		

**Comments**  
 No comments.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments



**Municipal Structure Inspection Form**

**Structure Number:**

**C20066401**

**Culverts - Barrels**

<b>Element Group</b>	Culverts				<b>Length</b>	33.50	<b>Width</b>	8.60
<b>Element Name</b>	Barrels				<b>Height</b>	4.10	<b>Count</b>	1.00
<b>Location</b>	Below Roadway				<b>Total Quantity</b>		668.30	
<b>Material</b>	Corrugated Steel				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Pipe horizontal ellipse				<b>Environment</b>			
<b>Protection System</b>	Hot dip galvanizing				<input checked="" type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	sq. m	0.00	616.30	52.00	0.00	<input type="checkbox"/> Severe		

Comments  
 Light to medium corrosion, efflorescence, active leakage, improper bolt layout, stalactites, incrustation, 7 missing bolts throughout culvert. Vegetation growing through barrel. Cable hanging into barrel at West end.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Coatings - Structural Steel**

<b>Element Group</b>	Coatings				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Structural Steel				<b>Height</b>	0.00	<b>Count</b>	0.00
<b>Location</b>	Culvert Barrel				<b>Total Quantity</b>		668.30	
<b>Material</b>	Hot Dip Galvanizing				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Hot dip galvanizing				<b>Environment</b>			
<b>Protection System</b>					<input checked="" type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	sq. m	0.00	536.30	33.00	99.00	<input type="checkbox"/> Severe		

Comments  
 Light to severe breakdown of protective coating.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Municipal Structure Inspection Form**

**Structure Number:**

**C20066401**

**Culverts - Inlet Components**

<b>Element Group</b>	Culverts				<b>Length</b>	12.00	<b>Width</b>	1.00
<b>Element Name</b>	Inlet Components				<b>Height</b>	0.00	<b>Count</b>	1.00
<b>Location</b>	West End - Cut-off Wall and Stiffener				<b>Total Quantity</b>		12.00	
<b>Material</b>	Cast-in-place Concrete				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Cut-off Wall				<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input checked="" type="checkbox"/> Moderate		
	sq. m	0.00	9.00	2.00	1.00	<input type="checkbox"/> Severe		

**Comments**  
 Light spalls, wide cracks, severe honeycombing at inlet, inlet is covered with vegetation at Northwest.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments
Rehab	6-10 yrs	\$2,500	Patch repair and seal crack

**Culverts - Outlet Components**

<b>Element Group</b>	Culverts				<b>Length</b>	12.00	<b>Width</b>	1.00
<b>Element Name</b>	Outlet Components				<b>Height</b>	0.00	<b>Count</b>	1.00
<b>Location</b>	East End - Cut-off Wall and Stiffener				<b>Total Quantity</b>		12.00	
<b>Material</b>	Cast-in-place Concrete				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Cut-off Wall				<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input checked="" type="checkbox"/> Moderate		
	sq. m	0.00	9.00	2.00	1.00	<input type="checkbox"/> Severe		

**Comments**  
 Narrow stained cracks, light to severe honeycombing, localized wide crack in Northeast cut-off wall, light delamination on cut-off wall at Southeast, light spalls on stiffener, wide cracks on stiffener.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments
Rehab	6-10 yrs	\$2,500	Patch repair and seal crack

**Municipal Structure Inspection Form**

**Structure Number:**

**C20066401**

**Embankments & Streams - Embankments**

<b>Element Group</b>	Embankments & Streams				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Embankments				<b>Height</b>	0.00	<b>Count</b>	4.00
<b>Location</b>	All Quadrants						<b>Total Quantity</b>	4.00
<b>Material</b>	Vegetation				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>	Vegetation				<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	Each	0.00	4.00	0.00	0.00	<input type="checkbox"/> Severe		

**Comments**  
 No comments.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Embankments & Streams - Slope Protection**

<b>Element Group</b>	Embankments & Streams				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Slope Protection				<b>Height</b>	0.00	<b>Count</b>	4.00
<b>Location</b>	All Quadrants						<b>Total Quantity</b>	4.00
<b>Material</b>	Vegetation				<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>	Vegetation				<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<i>Units</i>	<i>Excell.</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<input type="checkbox"/> Moderate		
	Each	0.00	4.00	0.00	0.00	<input type="checkbox"/> Severe		

**Comments**  
 No comments.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments



**Municipal Structure Inspection Form**

**Structure Number:**

**C20066401**

**Embankments & Streams - Streams & Waterways**

<b>Element Group</b>	Embankments & Streams				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Streams & Waterways				<b>Height</b>	0.00	<b>Count</b>	1.00
<b>Location</b>	Through Structure				<b>Total Quantity</b>		1.00	
<b>Material</b>					<input type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<b>Units</b>	<b>Excell.</b>	<b>Good</b>	<b>Fair</b>	<b>Poor</b>	<input type="checkbox"/> Moderate		
	All	0.00	0.00	0.00	1.00	<input type="checkbox"/> Severe		

**Comments**  
 Debris in watercourse, the West end of the barrel is severely undermined 3m into the length of the barrel. Flow: West to East. Medium scour in Southwest.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments
Rehab	1-5 yrs	\$15,000	Restore undermining

**Foundations - Foundations (below ground level)**

<b>Element Group</b>	Foundations				<b>Length</b>	0.00	<b>Width</b>	0.00
<b>Element Name</b>	Foundations (below ground level)				<b>Height</b>	0.00	<b>Count</b>	0.00
<b>Location</b>	Below Barrel				<b>Total Quantity</b>		0.00	
<b>Material</b>					<input checked="" type="checkbox"/> Limited Inspection			
<b>Element Type</b>					<b>Environment</b>			
<b>Protection System</b>					<input type="checkbox"/> Benign			
<b>Condition Data</b>	<b>Units</b>	<b>Excell.</b>	<b>Good</b>	<b>Fair</b>	<b>Poor</b>	<input type="checkbox"/> Moderate		
	N/A					<input type="checkbox"/> Severe		

**Comments**  
 Limited inspection.

Performance Deficiencies	Maintenance Needs	Priority	Comments
None			

Rehab/Repair Recommendations	Priority	Cost	Comments

**Municipal Structure Inspection Form**

**Structure Number:**

**C20066401**

<b>Repair/Rehabilitation Required</b>				
<b>Element Group</b>	<b>Element</b>	<b>Repair/Rehabilitation</b>	<b>Priority</b>	<b>Cost</b>
Culverts	Inlet Components	Rehab	6-10 yrs	\$2,500
Culverts	Outlet Components	Rehab	6-10 yrs	\$2,500
Embankments & Streams	Streams & Waterways	Rehab	1-5 yrs	\$15,000
<b>Total Repair/Rehabilitation Cost</b>				<b>\$20,000</b>

<b>Associated Work</b>				
	<b>Comments</b>			<b>Estimated Cost</b>
<b>Approaches</b>	<input type="text"/>			\$0
<b>Detours</b>	<input type="text"/>			\$0
<b>Traffic Control</b>	<input type="text"/>			\$10,000
<b>Utilities</b>	<input type="text"/>			\$0
<b>Right-of-Way</b>	<input type="text"/>			\$0
<b>Environmental Study</b>	<input type="text"/>			\$0
<b>Other</b>	Bonds, Mobilization, Unwatering			\$20,000
<b>Contingencies</b>	<input type="text"/>	15%	**	\$8,000
<b>Engineering</b>	<input type="text"/>	20%	**	\$10,000
<b>Total Associated Work Cost</b>				<b>\$48,000</b>
<b>Total Repair/Rehabilitation Cost</b>				<b>\$20,000</b>
<b>Total Cost</b>				<b>\$68,000</b>
Town of Caledon Share @ 100%				\$68,000

\*\* If based on a percentage calculated values rounded-up to the nearest thousand dollars.

**Justification**



**Looking North at Roadway over Culvert - Photo 1**



**Looking South at Roadway over Culvert - Photo 2**





**East Elevation - Photo 3**



**West Elevation - Photo 4**





**Approaches - Wearing Surface - New Surface Treatment over Structure - Photo 5**



**Approaches - Guide Rail - Crack in Post over Culvert at West - Photo 6**





**Accessories - Signs - Minor Damage to Southwest Hazard Marker - Photo 7**



**Looking East through Barrel from End - Photo 8**





**Looking East through Barrel at Midspan - Photo 9**



**Looking West through Barrel at Midspan - Photo 10**





**Looking West through Barrel from End - Photo 11**



**Culverts - Barrels - Efflorescence on Wall - Photo 12**





**Culverts - Barrels - Medium Corrosion on Invert - Photo 13**



**Culverts - Barrels - Overall Light Corrosion - Photo 14**





**Culverts - Barrels - Missing Bolts - South Wall - Midspan - Photo 15**



**Culverts - Barrels - Medium Corrosion on Invert - Photo 16**





**Culverts - Barrels - Stalactites on Wall - Photo 17**



**Culverts - Barrels - Vegetation Growing in Barrel - Photo 18**





**Culverts - Barrels - Cable Hanging into Barrel at West - Photo 19**



**Culverts - Barrels - Improper Bolt Layout - Photo 20**





**Coatings - Structural Steel - Light to Severe Breakdown of Coating - Photo 21**



**Culverts - Inlet Components - Typical Cut-off Wall - Photo 22**





**Culverts - Inlet Components - Severe Honeycombing on Cut-off Wall - SW - Photo 23**



**Culverts - Inlet Components - Typical Stiffener - Photo 24**





**Culverts - Inlet Components - Light Spall on Stiffener - West - Photo 25**



**Culverts - Inlet Components - Wide Crack on Stiffener - SW - Photo 26**





**Culverts - Inlet Components - Wide Cracks on Stiffener - SW - Photo 27**



**Culverts - Outlet Components - Light Delamination - SE Cut-off Wall - Photo 28**





**Culverts - Outlet Components - Severe Honeycombing - SE Cut-off Wall - Photo 29**



**Culverts - Outlet Components - Wide Crack - NE Cut-off Wall - Photo 30**





**Culverts - Outlet Components - Typical Cut-off Wall - Photo 31**



**Culverts - Outlet Components - Typical Stiffener - Photo 32**





**Culverts - Outlet Components - Wide Crack in Stiffener - SE - Photo 33**



**Culverts - Outlet Components - Light Spalls on Stiffener - Photo 34**





**Looking West Upstream - Photo 35**



**Looking East Downstream - Photo 36**





AM 9:31 JUN/14/2021

**Embankments and Streams - Embankments - Vegetation Overgrowing Culvert at West - Photo 37**



AM 9:26 JUN/14/2021

**Embankments and Streams - Streams\_Waterways - Severe Undermining of Barrel at West - Photo 38**





**Embankments and Streams - Streams\_Waterways - Medium Scour at SW - Photo 39**

and it was found that the hydrological responses of each sub-watersheds can be broadly categorized into two groups. The first group contains minor storm events that have rainfall amounts less than 53 mm. The second group includes major storm events that have rainfall amounts of greater than 53 mm. Once the model was calibrated for the major storm events, the calibrated model parameters shown in **Table 2.12** were adjusted for minor storm events. The readjusted parameters shown in **Table 2.13** resulted in an excellent match for the minor events. The readjusted calibration parameters for minor events resulted in a very good match of modeled and observed flows for minor events.

**Table 2.12 – Calibration Parameters**

Calibration Locations (8)	Calibration Type	NHYD ID	Nash CN Changed Factor	Nash Tp Changed Factor	Nash N Value (Default 3)	Stand TIMP/XIMP Factor	Stand SLPP/SLPI Factor	Stand Pervious CN Changed Factor	Channel Roughness	Channel Length Changed Factor	Hummocky Factor
Humber River at Palgrave (02HC047)	Simple	3698	1.1	1.25	1.5	0.9	0.75	1.1	0.08		1.5
Cold Creek near Bolton (02HC023)	Simple	1850	1.1	1	1.75	1	1	1.1	0.08	1.2	1.5
Elder Mills (02HC025)	Compound	2396	1.15	1	3	1	1	1.15	0.04		1.5
East Humber River at Pine Grove (02HC009)	Simple	2517	0.8	1	1.5	0.8	0.75	0.8	0.045		1.8
Plunkett Creek (HY053)	Simple	7256	1	1	1.5	1	1	1	0.06		
West Humber at Highway 7 (02HC031)	Simple	720	1.1	0.9	2.5	1.1	1	1.1	0.045		
Humber River at Weston Rd. (02HC003)	Compound	1631	1.15	1	3	1	1.5	1.15	0.05		
Black Creek at Scarlett Rd. (02HC027)	Simple	719	1	1	3	0.9	1	1	0.045		

**Table 2.13 – Readjusted Calibration Parameters for Minor Storms.**

Calibration Locations (8)	NHYD ID	Nash CN Changed Factor	Nash TP Changed Factor	Nash N (Default 3)	Stand TIMP/XIMP Factor	Stand SLPP/SLPI Factor	Stand Pervious CN Changed Factor	Channel Roughness	Channel Length Changed Factor	Hummocky Factor
Humber River at Palgrave (02HC047)	3698	1.1	1.25	1.5	0.9	0.75	1.1	0.08		1.5
Cold Creek near Bolton (02HC023)	1850	0.88 *	2 *	1.5 *	1	1	0.88 *	0.096 *	1.2	1.8 *
Elder Mills (02HC025)	2396	0.88 *	1.5 *	1.5 *	1	1	0.88 *	0.04		1.5
East Humber River at Pine Grove (02HC009)	2517	0.80	1	1.5	0.80	0.75	0.80	0.045		1.8
Plunkett Creek (HY053)	7256	1	1	1.5	1	1	1	0.06		
West Humber River at Highway 7 (02HC031)	720	0.88 *	2 *	1.5 *	0.9 *	1	0.88 *	0.08 *	1.2 *	
Humber River at Weston Rd. (02HC003)	1631	1 *	1	3	0.8 *	1.5	1 *	0.05		
Black Creek at Scarlett Rd. (02HC027)	719	0.8 *	1	3	0.8 *	1	0.8 *	0.06 *		

\* These parameters differ from the major event calibration parameters shown in the preceding table



## **APPENDIX E – Geotechnical and Hydrogeology**

---

**Appendix E1 – Hydrogeological Figures**

**Appendix E2 – GEI Borehole & Monitoring Well Location Figures**

**Appendix E3 – Borehole Logs (GEI 2024)**

**Appendix E4 – Borehole Logs (EXP 2021 & 2023, GEMTEC 2023)**

**Appendix E5 – Soil Index Laboratory Results**

**Appendix E6 – Hydraulic Conductivity Testing**

**Appendix E7 – Groundwater Chemical Certificate of Analyses**

**Appendix E8 – MECP Well Records Summary**

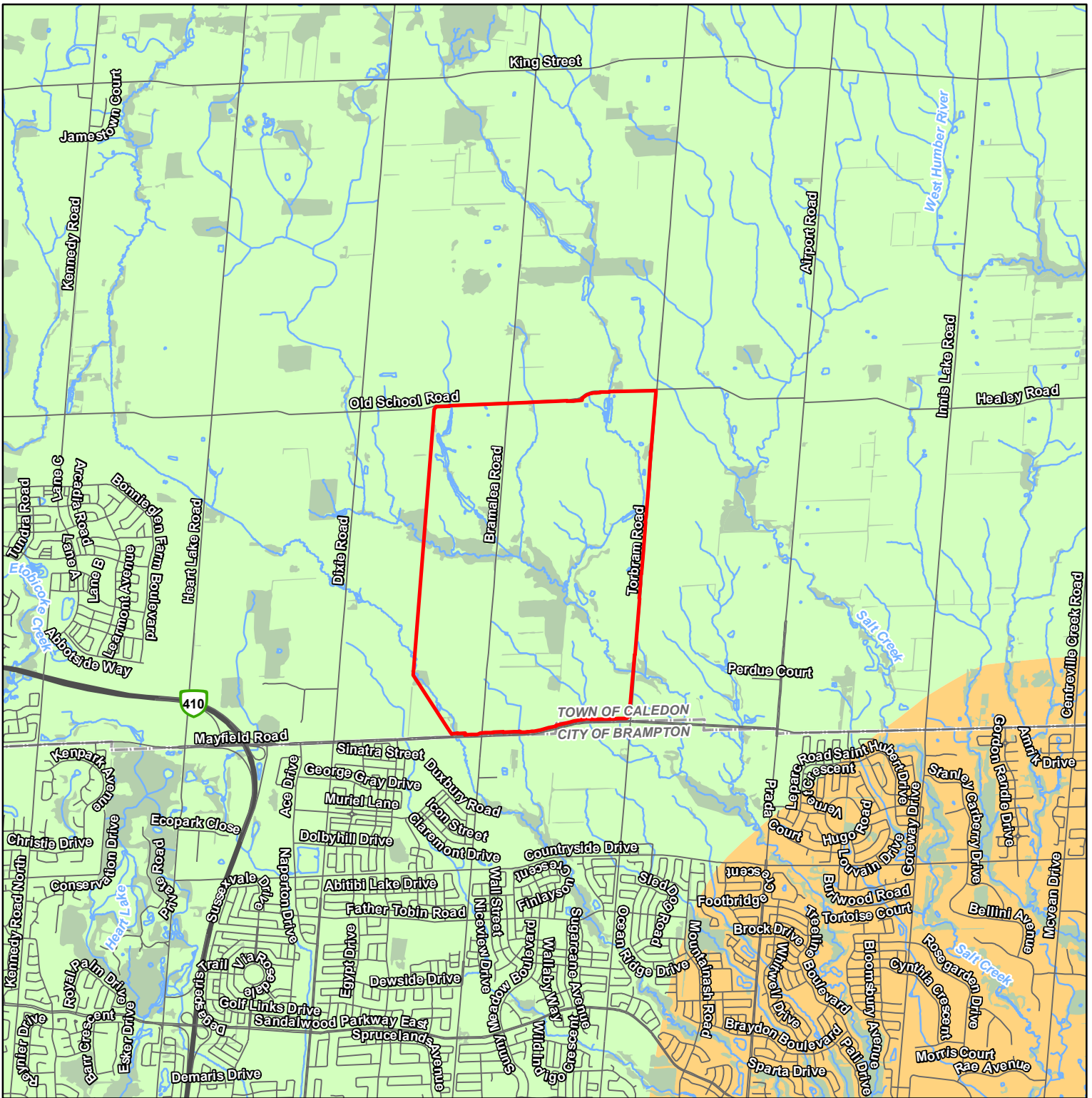
**Appendix E9 – Pre-Dev Water Balance**

**Appendix E10 – Preliminary Slope Stability Study – Entire Local SWS  
Area (GEI 2024)**

**Appendix E11 – Slope Stability Setback Plan Drawings – Properties 9  
& 10 (GEMTEC)**

## **Appendix E1 – Hydrogeological Figures**





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**NOTES:**  
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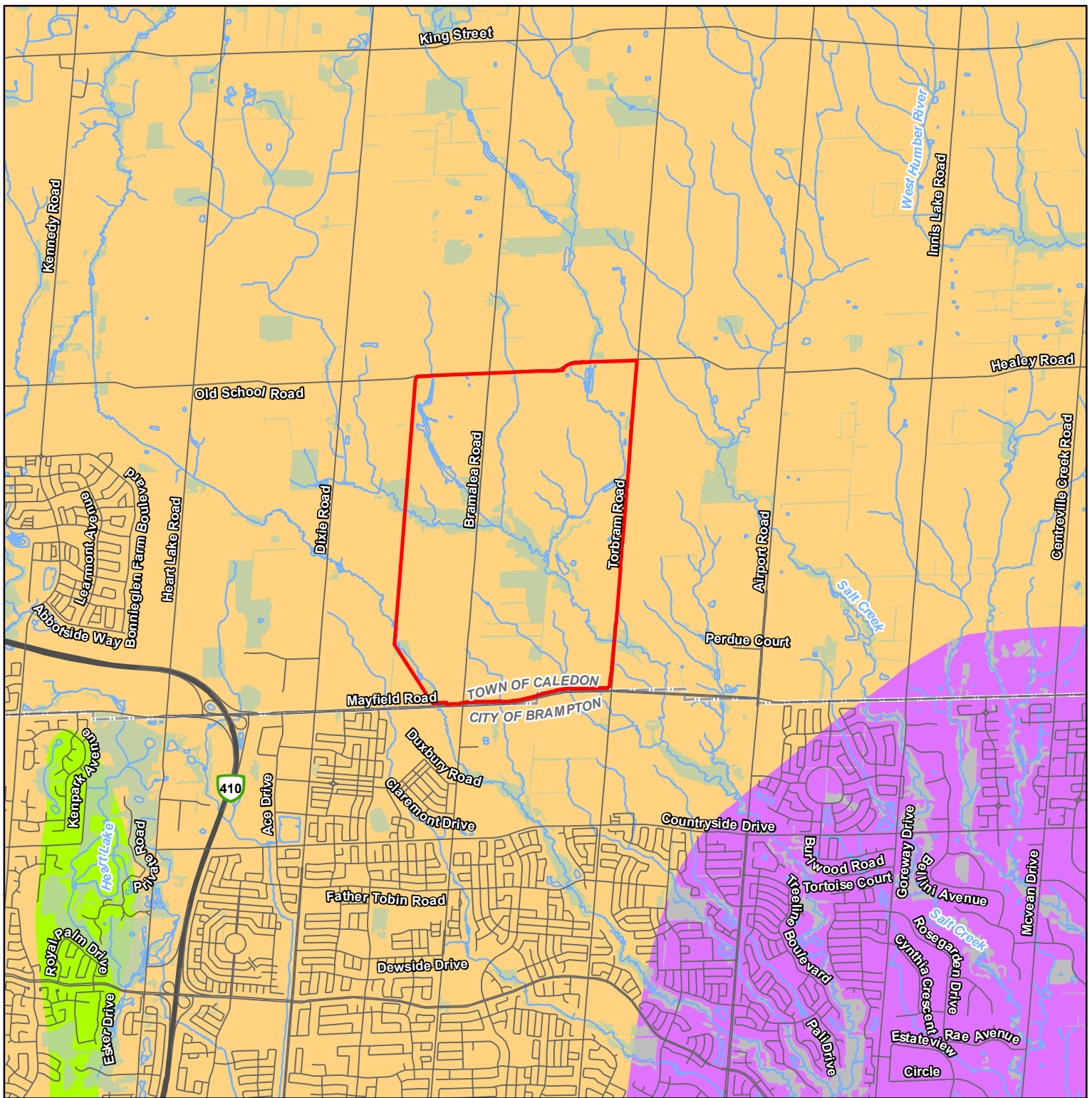
- Legend**
- Study Area
  - Watercourse
  - Waterbody
  - Wooded Area
  - Peel Plain
  - South Slope

Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Geotechnical Desktop Study

Figure 1  
 Physiographic Region

0 400 m  
 1:50,000





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**Legend**

- Study Area
- Watercourse
- Waterbody
- Wooded Area
- Bevelled Till Plains
- Eskers
- Till Plains (Drumlinized)

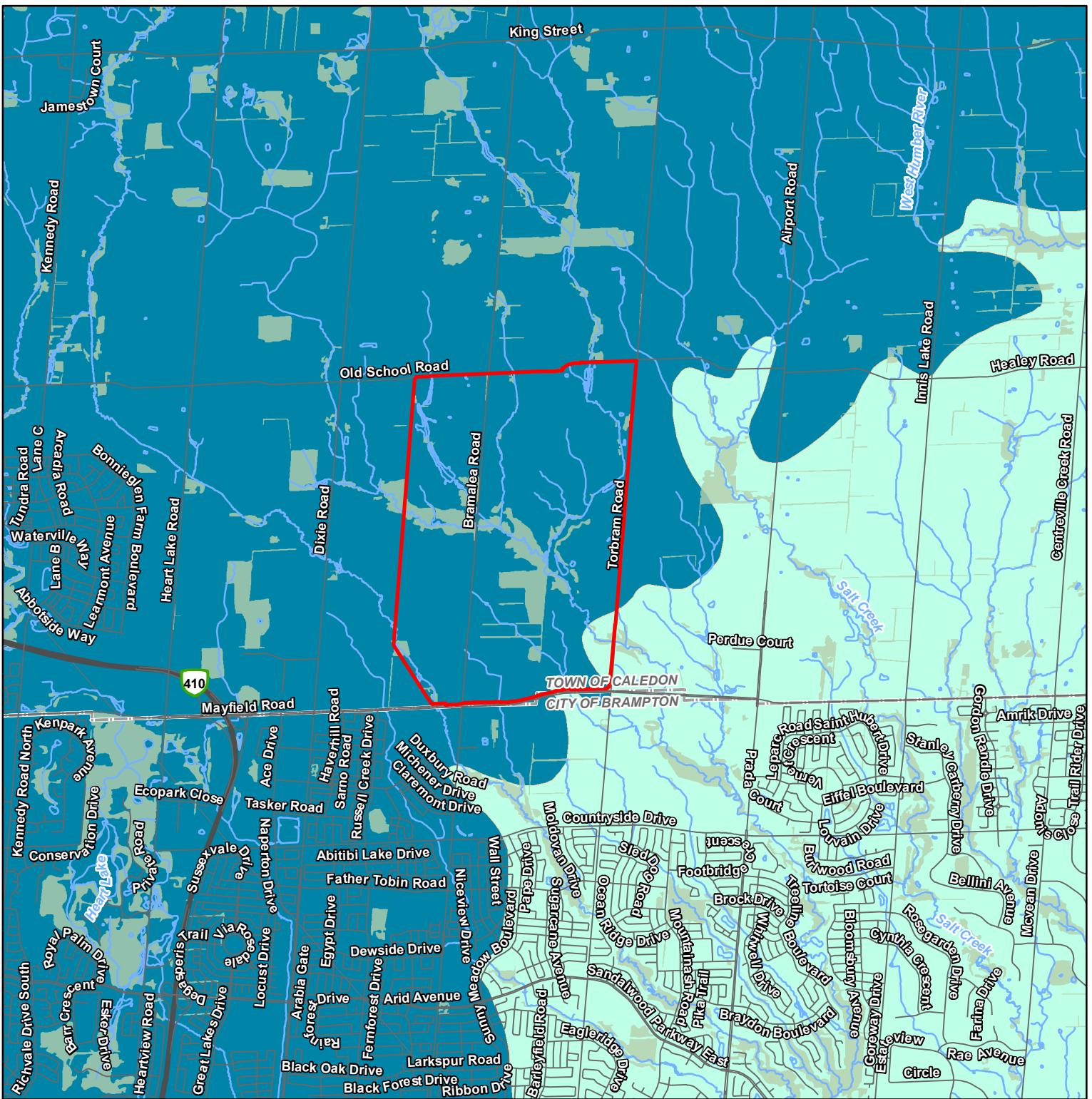
Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Geotechnical Desktop Study

Figure 2  
 Physiographic Landform

0 400 m  
 1:50,000







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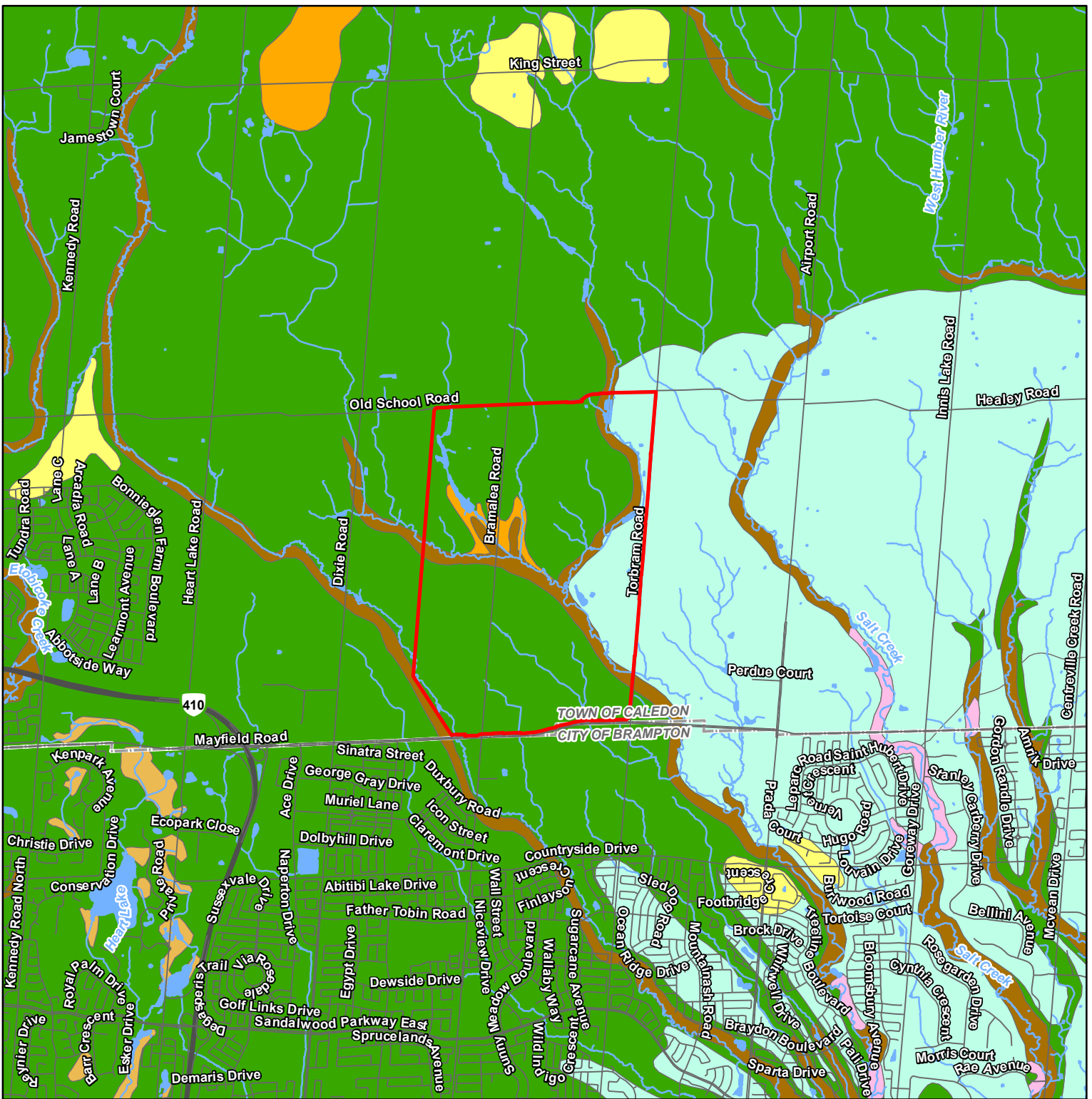
- Legend**
- Study Area
  - Watercourse
  - Waterbody
  - Wooded Area
  - Georgian Bay Formation
  - Queenston Formation

Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Geotechnical Desktop Study

Figure 3  
 Bedrock Geology

0 400 m  
 1:50,000





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**Legend**

- Study Area
- Watercourse
- Waterbody
- Wooded Area
- Till
- Fine-Textured Glaciolacustrine Deposits
- Paleozoic Bedrock
- Organic Deposits
- Ice-Contact Stratified Deposits
- Coarse-Textured Glaciolacustrine Deposits
- Modern Alluvial Deposits

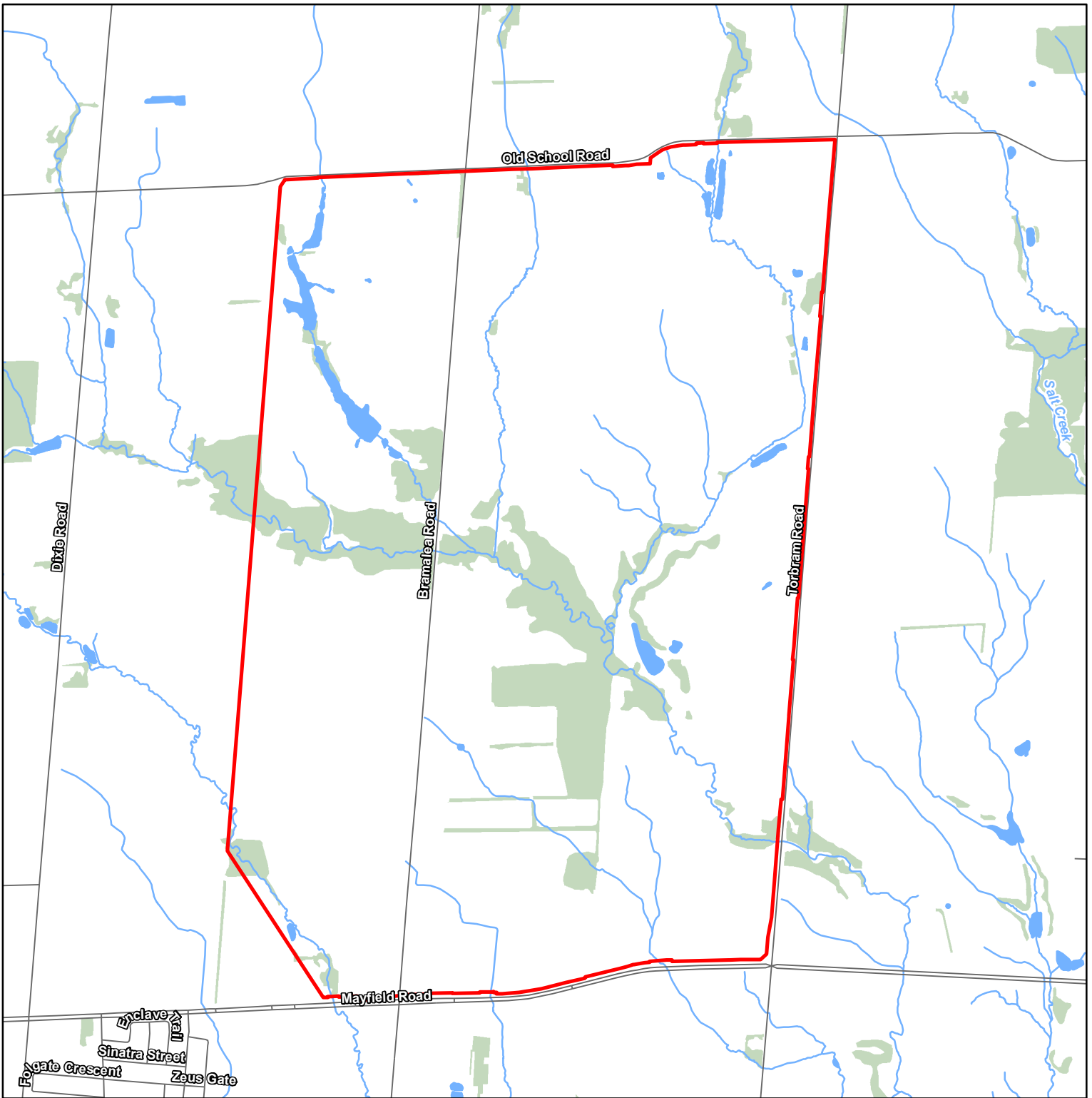
Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Geotechnical Desktop Study

Figure 4  
 Surficial Geology

0 400 m  
 1:50,000







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**Legend**

- Study Area
- Watercourse
- Waterbody
- Wooded Area

**Wellhead Protection Areas**

- Zone A
- Zone B
- Zone C
- Zone D
- WHPA Q1
- WHPA Q2

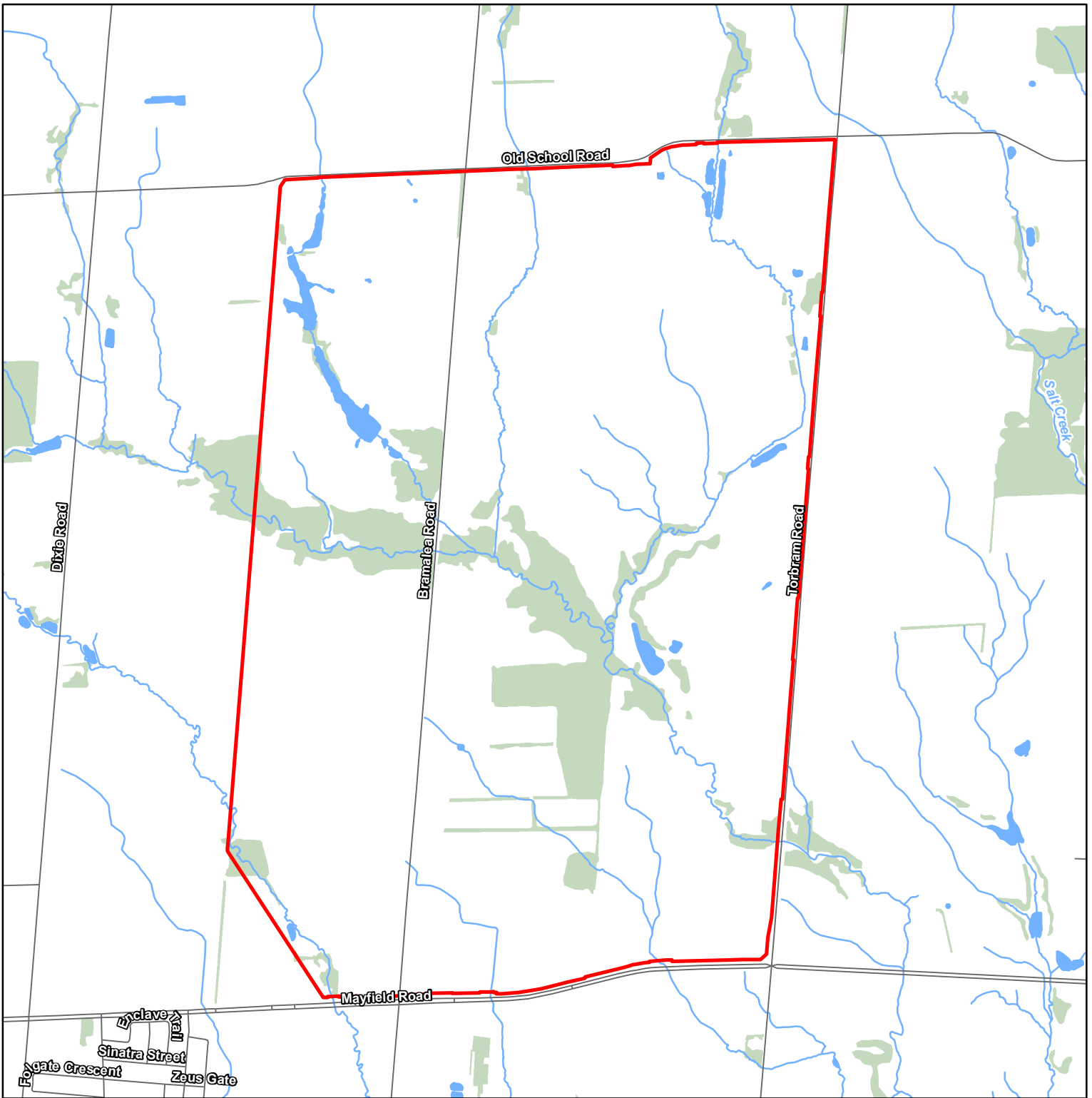
*\*The Site is not within a Wellhead Protection Area*

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 Geotechnical Desktop Study

Figure 5  
 Well Head  
 Protection Area

0 400 m  
 1:20,000





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- Legend**
- Study Area
  - Watercourse
  - Waterbody
  - Wooded Area
- Intake Protection Zones**
- Zone 1
  - Zone 2
  - Zone 3

*\*The Site is not within a Intake Protection Zone*

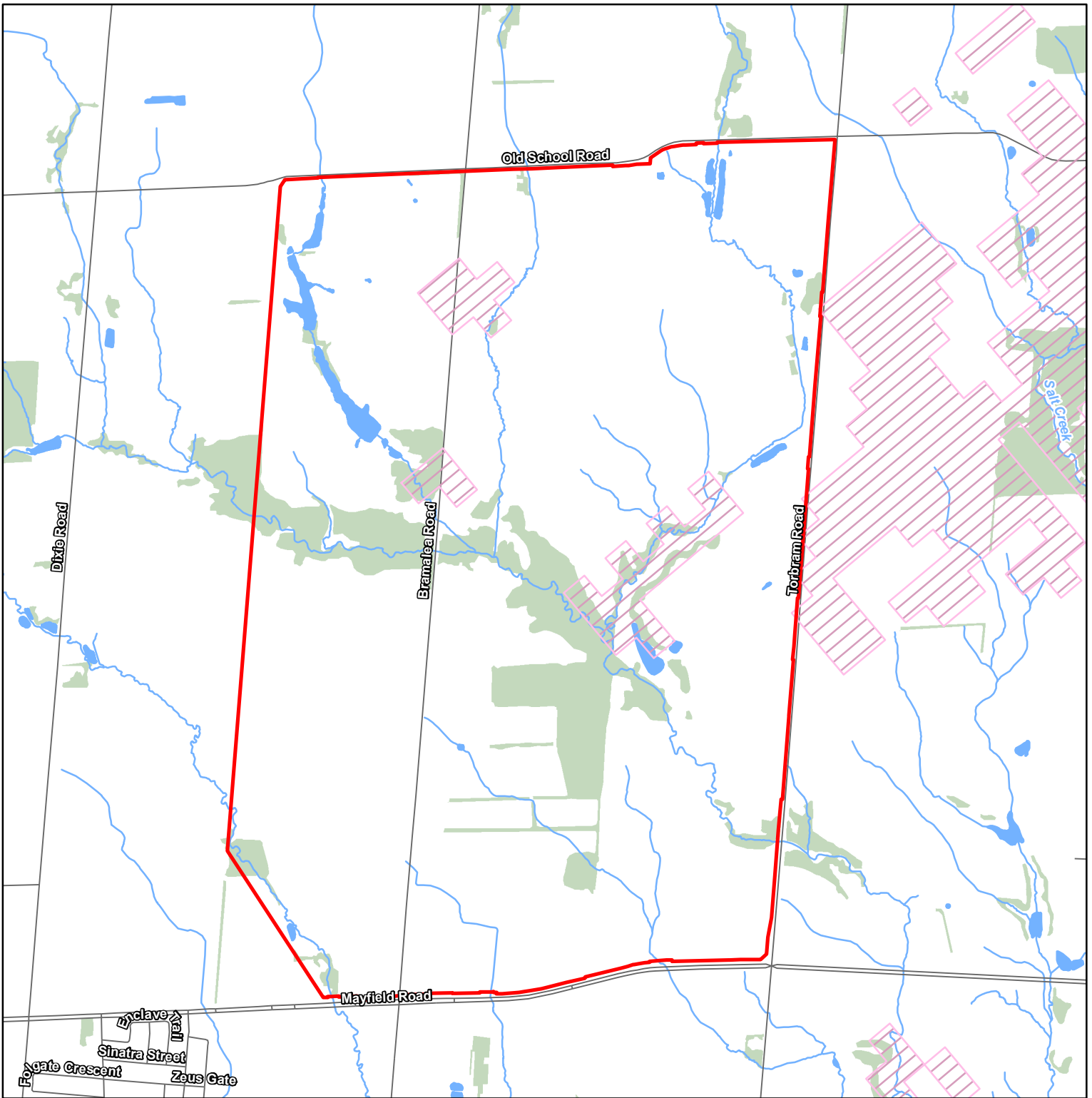
Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Geotechnical Desktop Study

Figure 6  
 Intake Protection Zones

0 400 m  
 1:20,000







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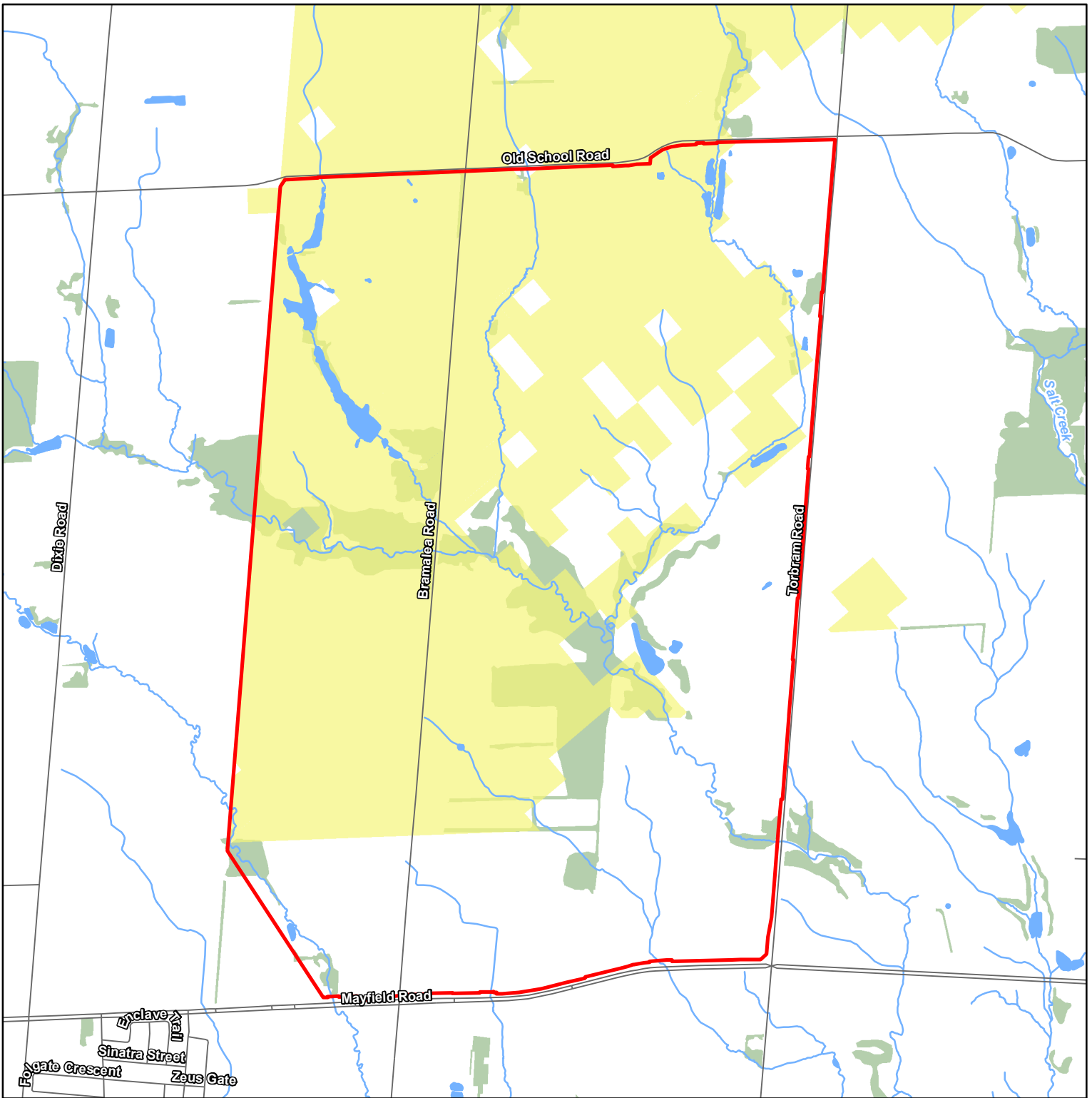
**NOTES:**  
 1. Coordinate System: NAD 1983 UTM Zone 17N.  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2024, © Town of Caledon, 2024.

- Legend**
- Study Area
  - Watercourse
  - Waterbody
  - Wooded Area
  - Highly Vulnerable Aquifer

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Figure 7  
 Highly Vulnerable Aquifer





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**Legend**

- Study Area
- Watercourse
- Waterbody
- Wooded Area
- Significant Groundwater Recharge Area

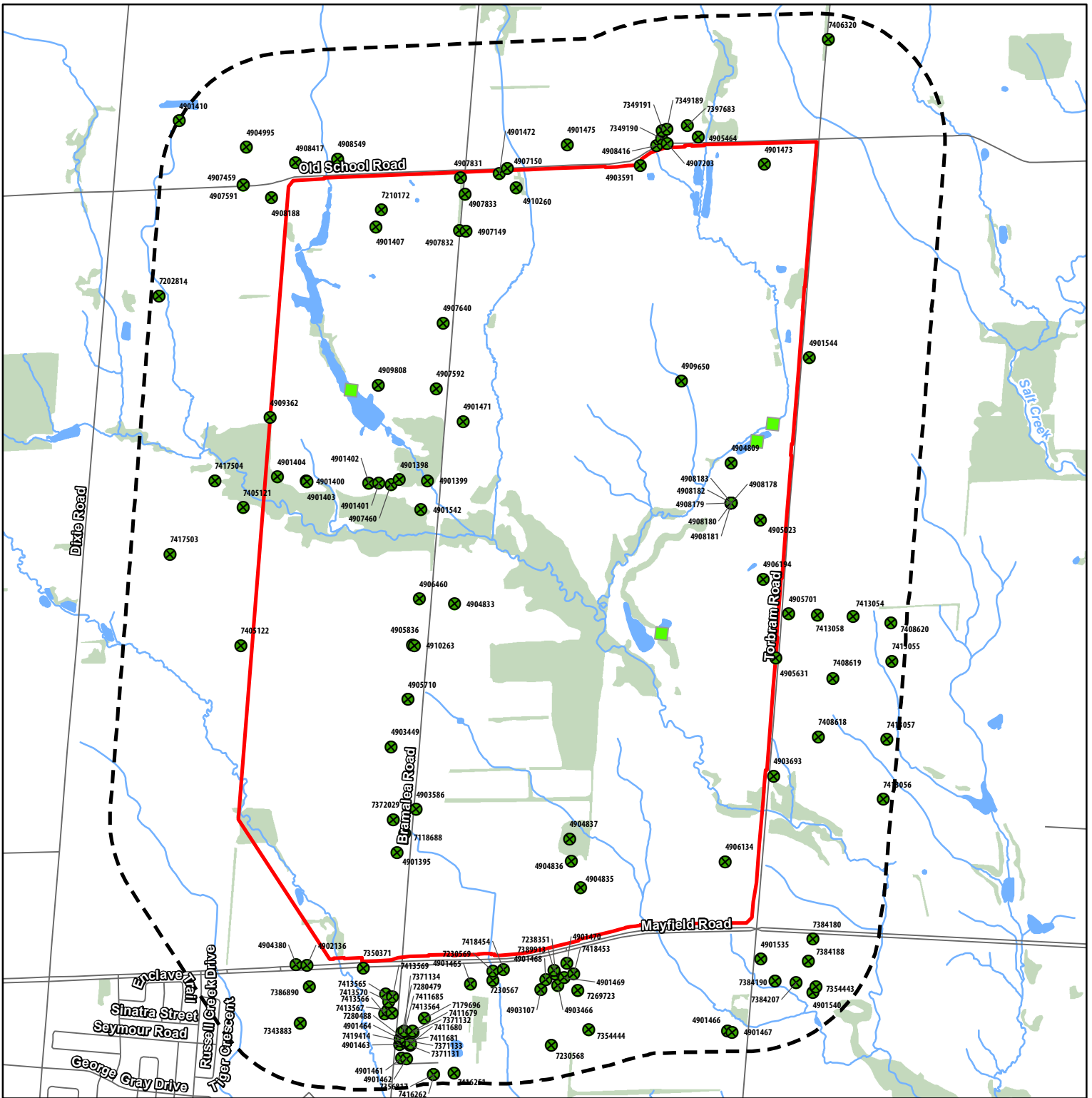
Mayfield Tullamore Landowner Group  
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 Geotechnical Desktop Study

Figure 8  
 Significant Groundwater  
 Recharge Area

0 400 m  
 1:20,000







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**Legend**

- Study Area
- Study Area + 500m
- Watercourse
- Waterbody
- Wooded Area
- + MECP Well Records
- ◆ Surface Water PTTW

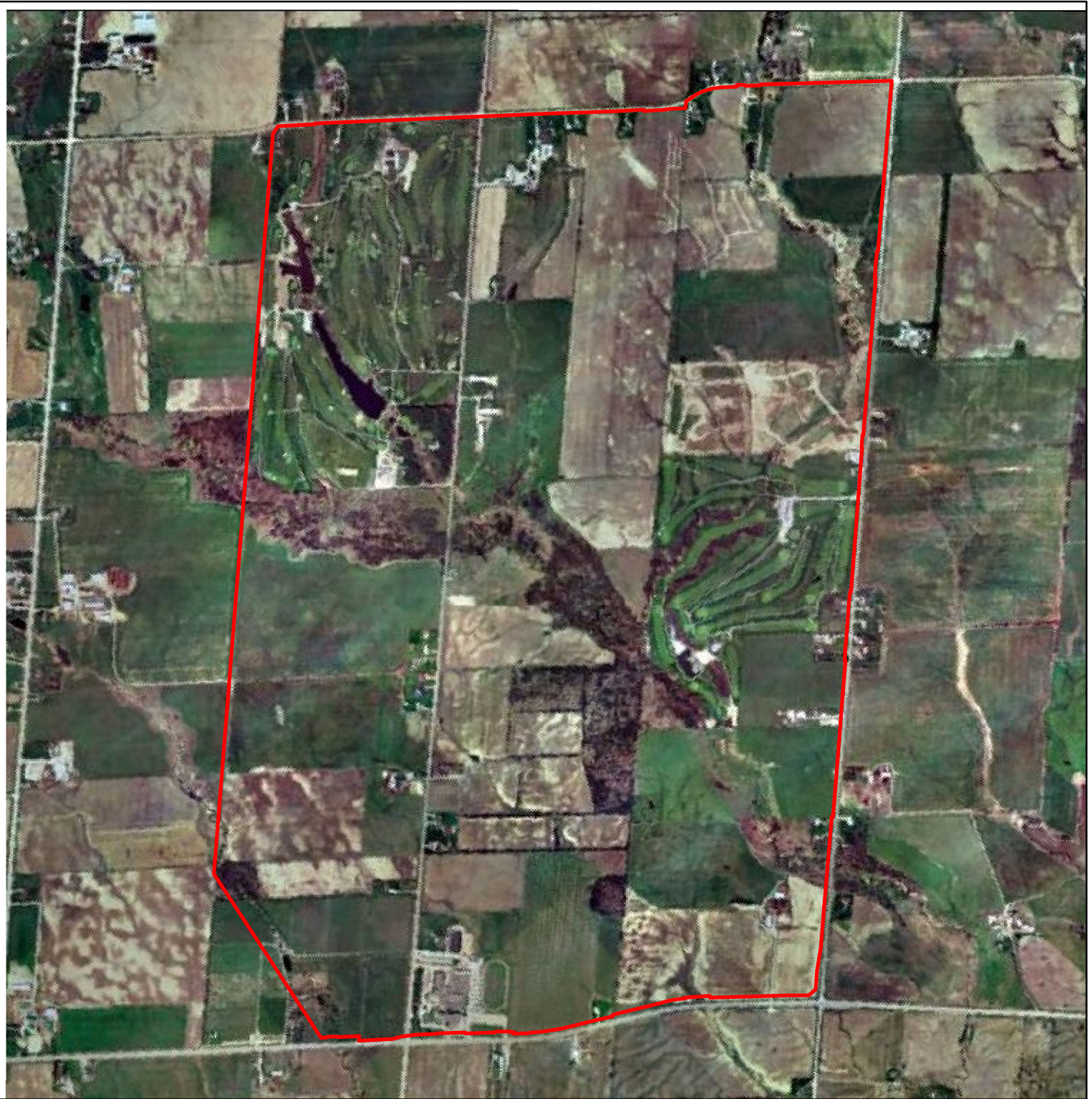
Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Geotechnical Desktop Study

Figure 9  
 MECP Well Record  
 Locations and  
 PTTW Locations

0 400 m  
 1:21,000








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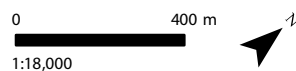
**NOTES:**  
1. Coordinate System: NAD 1983 UTM Zone 17N.  
2. Airphoto Source: © First Base Solutions.

**Legend**

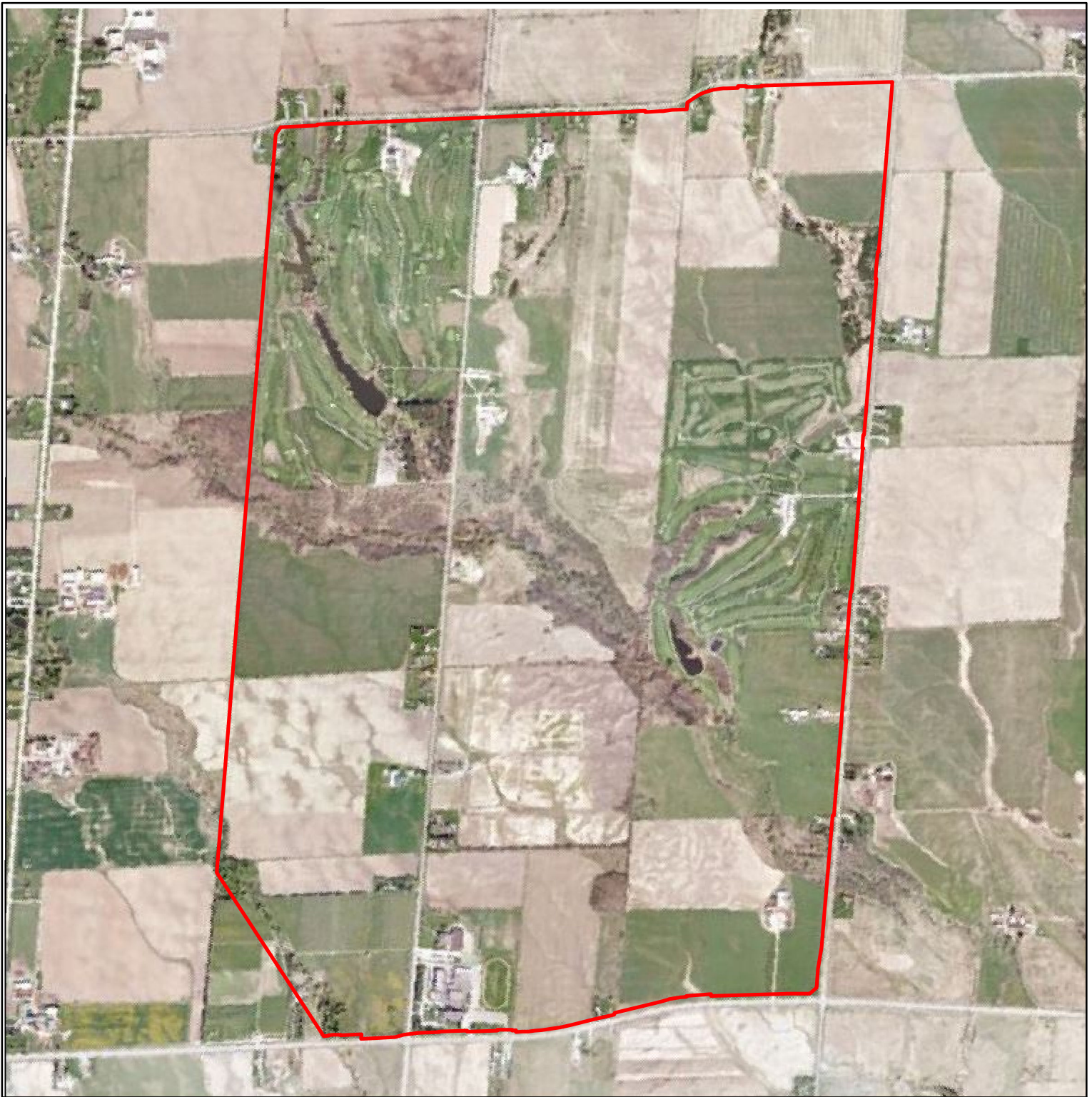
 Study Area

Mayfield Tullamore Landowner Group  
Phase 1 - Subwatershed Characterization and Integration Report  
Geotechnical Desktop Study

Figure 10A  
2002 AERIAL PHOTOGRAPH








Project 2400278

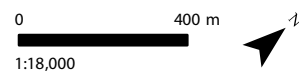
**NOTES:**  
1. Coordinate System: NAD 1983 UTM Zone 17N.  
2. Airphoto Source: © First Base Solutions.

**Legend**

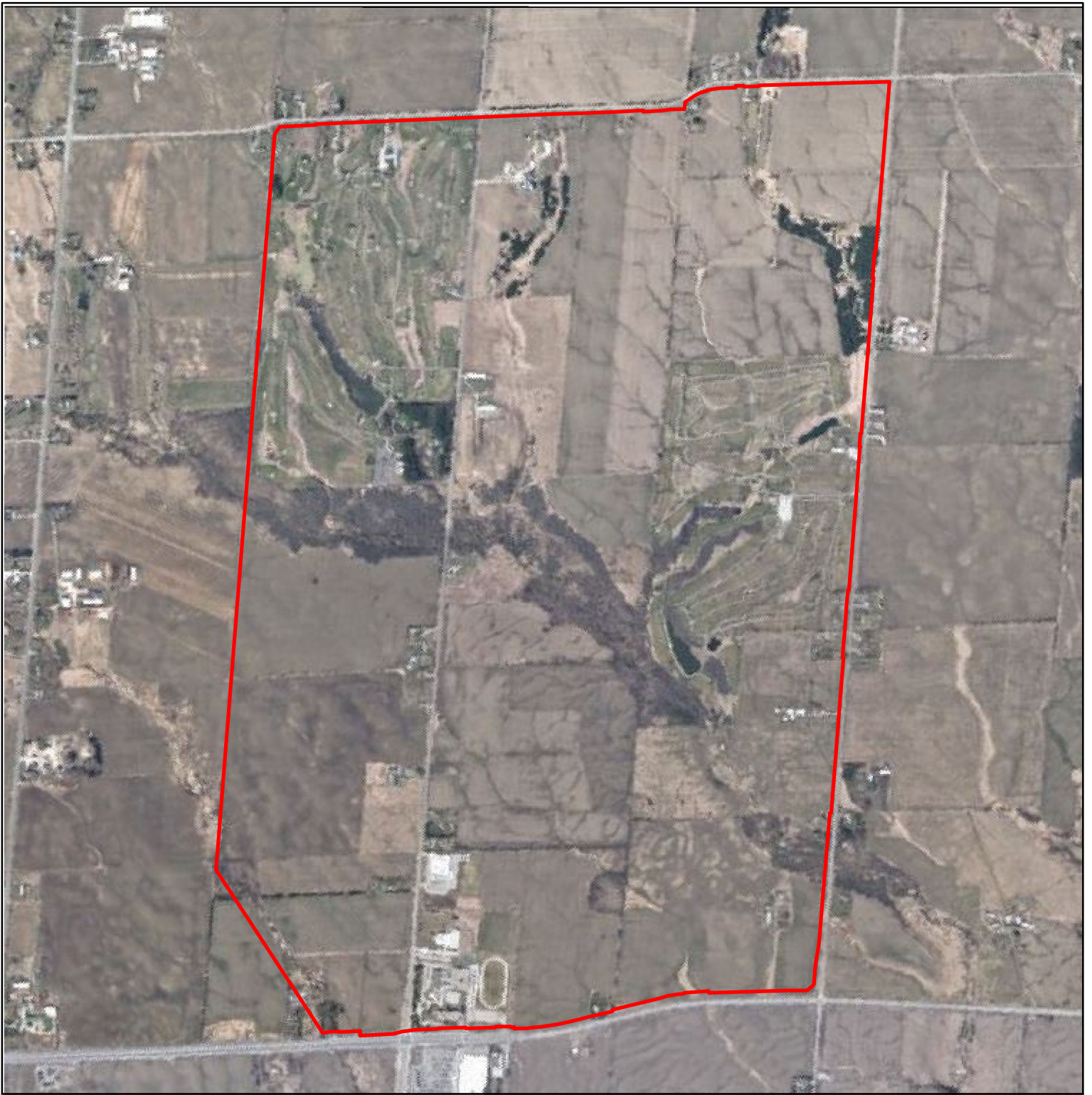
 Study Area

Mayfield Tullamore Landowner Group  
Phase 1 - Subwatershed Characterization and Integration Report  
Geotechnical Desktop Study

Figure 10B  
2007 AERIAL PHOTOGRAPH








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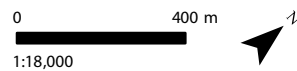
**NOTES:**  
1. Coordinate System: NAD 1983 UTM Zone 17N.  
2. Airphoto Source: © First Base Solutions.

**Legend**

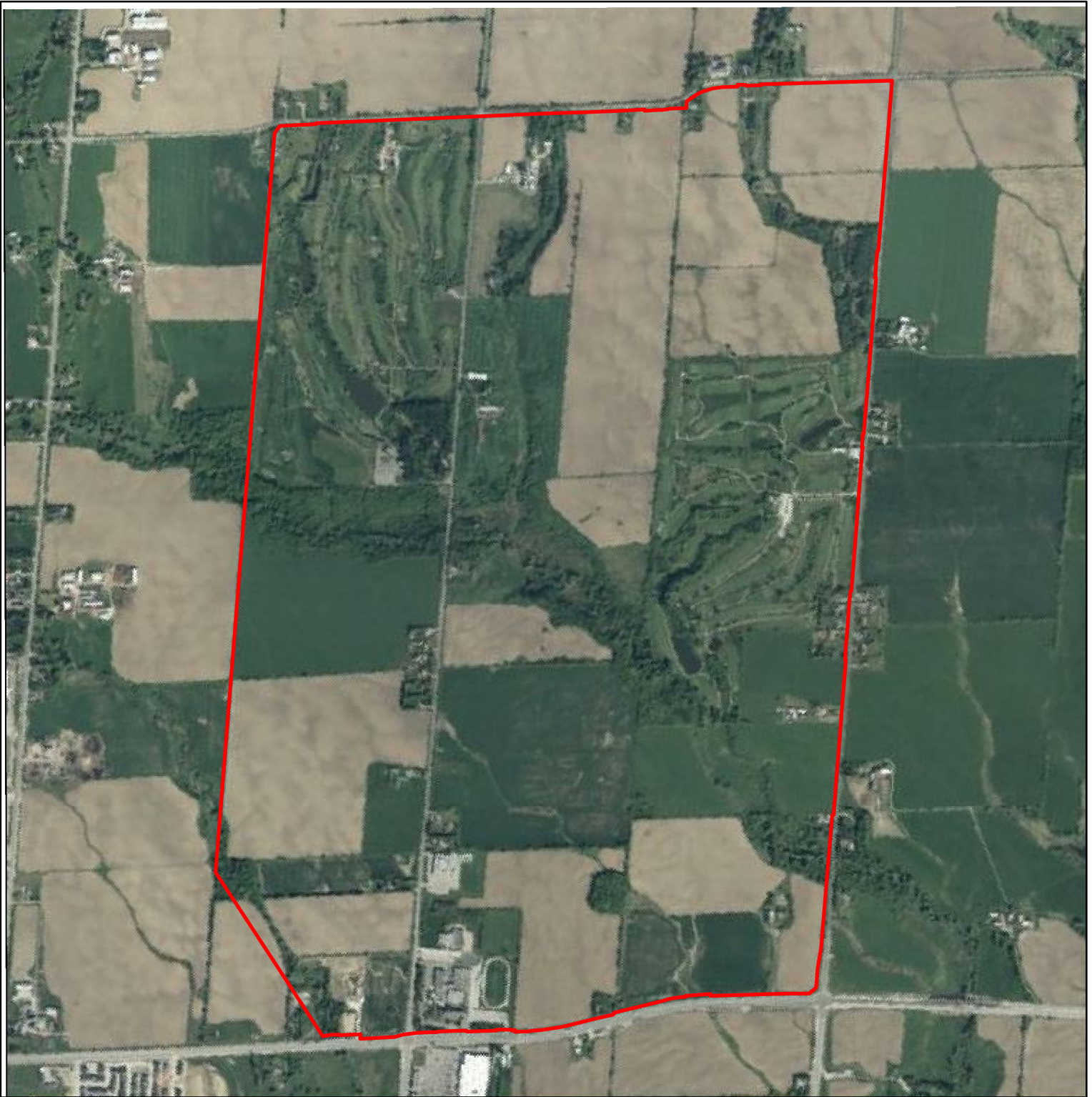
 Study Area

Mayfield Tullamore Landowner Group  
Phase 1 - Subwatershed Characterization and Integration Report  
Geotechnical Desktop Study

Figure 10C  
2016 AERIAL PHOTOGRAPH








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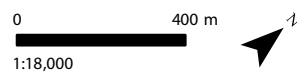
**NOTES:**  
1. Coordinate System: NAD 1983 UTM Zone 17N.  
2. Airphoto Source: © First Base Solutions.

**Legend**

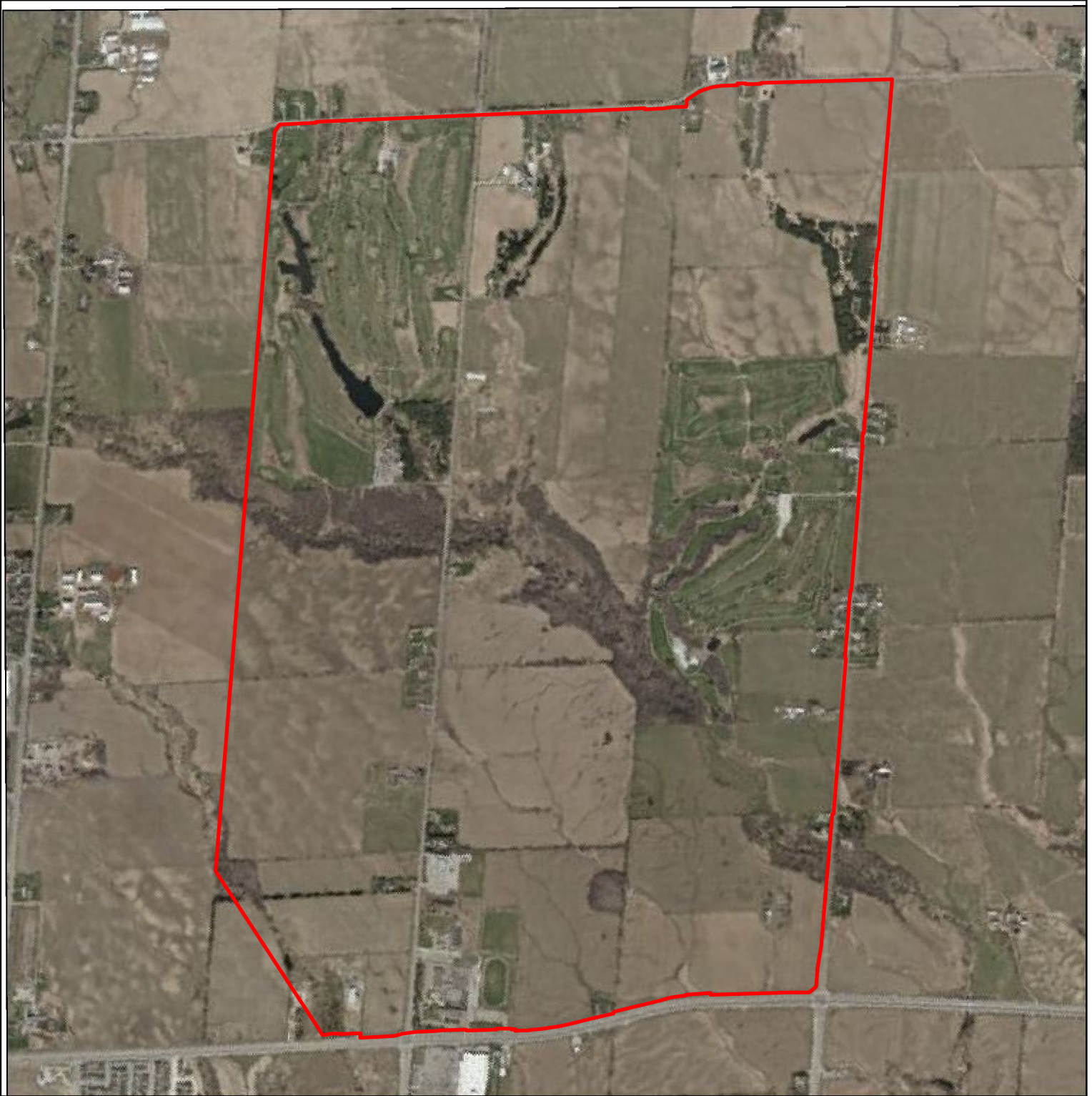
 Study Area

Mayfield Tullamore Landowner Group  
Phase 1 - Subwatershed Characterization and Integration Report  
Geotechnical Desktop Study

Figure 10D  
2020 AERIAL PHOTOGRAPH








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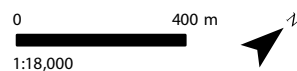
**NOTES:**  
1. Coordinate System: NAD 1983 UTM Zone 17N.  
2. Airphoto Source: © First Base Solutions.

**Legend**

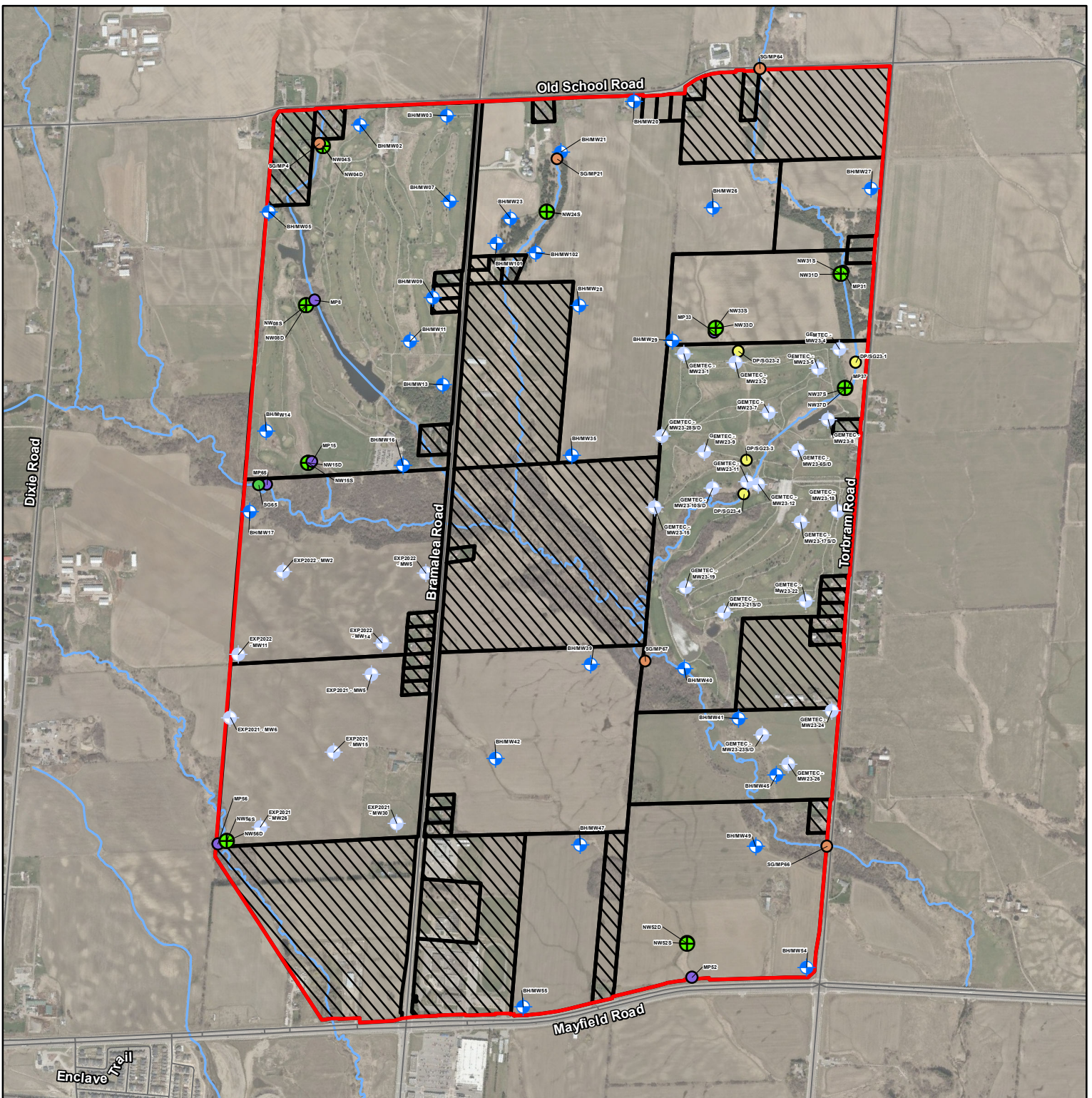
 Study Area

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Figure 10E  
2022 AERIAL PHOTOGRAPH







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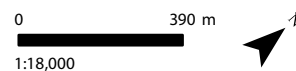
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**Legend**

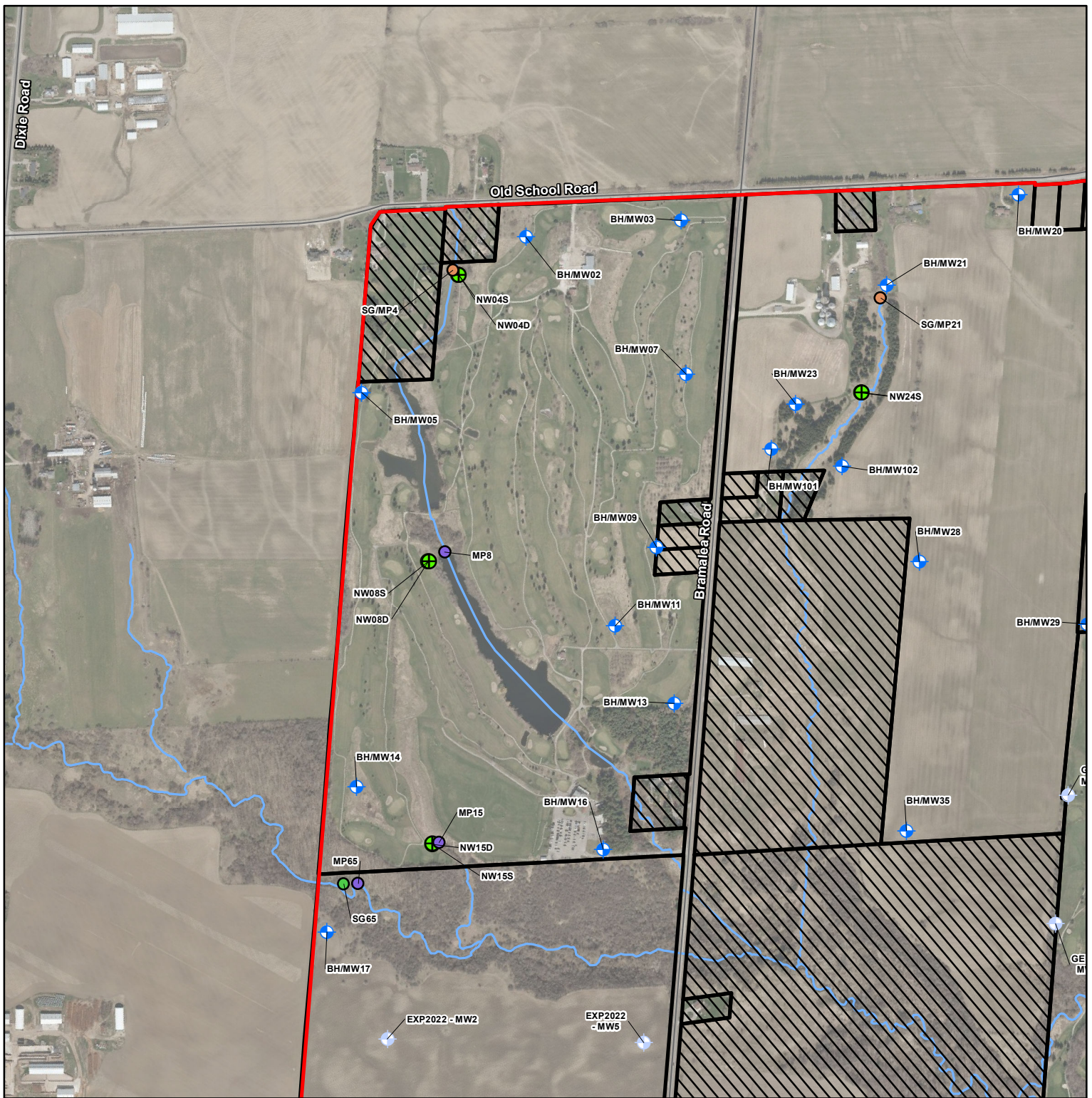
- Study Area
- Non-Participating Property
- Participating Property
- ◆ Borehole/Monitoring Well (GEI 2024)
- ⊕ Nested Well (GEI 2024)
- ◆ Monitoring Well (EXP 2021, 2022 & GEMTEC 2023)
- Mini Piezometer (GEI 2024)
- Staff Gauge (GEI 2024)
- Staff Gauge/Mini Piezometer (GEI 2024)
- Drive Point/Staff Gauge (GEMTEC 2023)

Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Hydrogeological Investigation

## Figure 11A Hydrogeological Monitoring Locations







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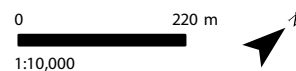
**NOTES:**  
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**Legend**

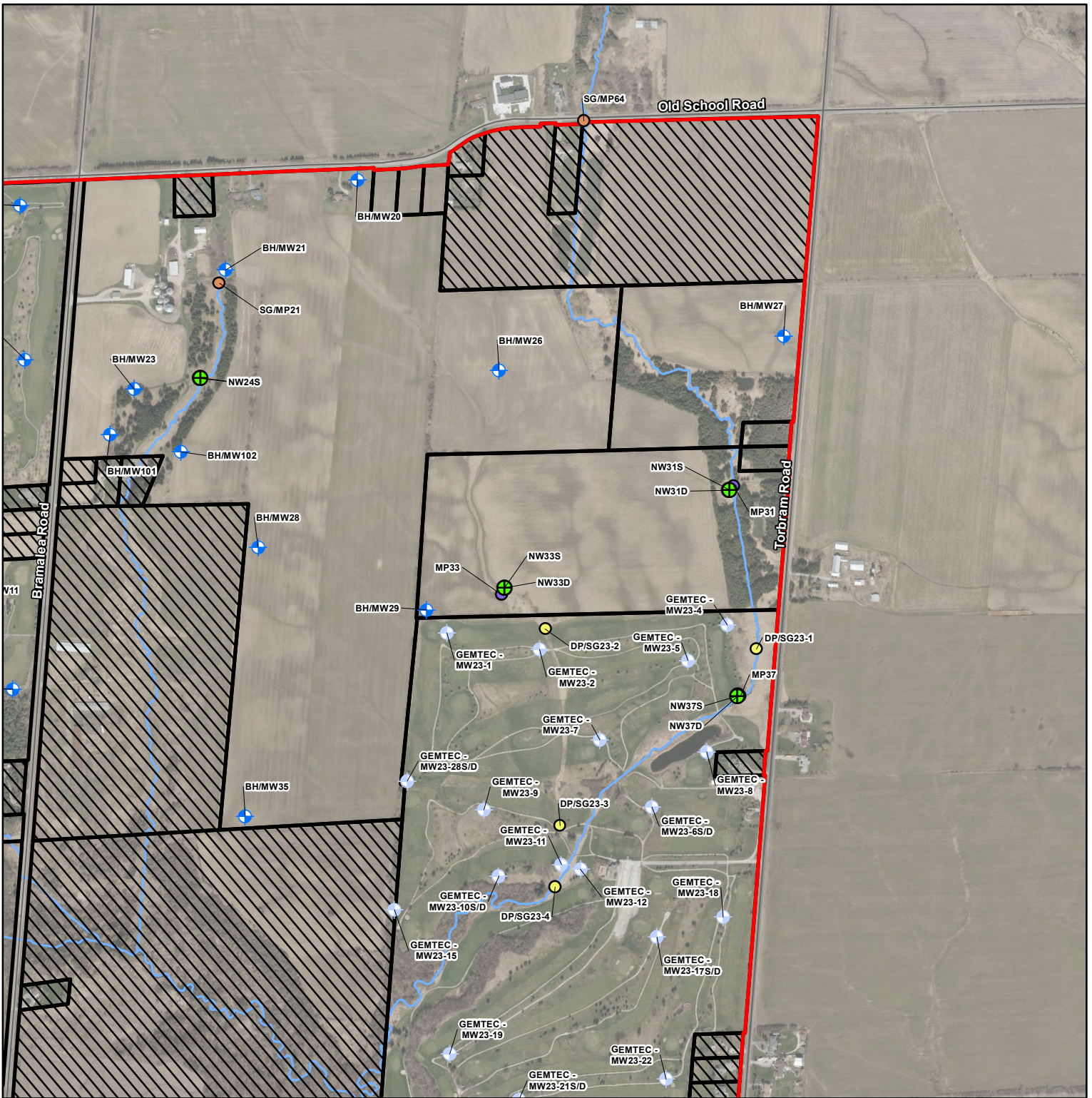
- Study Area
- Non-Participating Property
- Participating Property
- ◆ Borehole/Monitoring Well (GEI 2024)
- ⊕ Nested Well (GEI 2024)
- ◆ Monitoring Well (EXP 2021, 2022 & GEMTEC 2023)
- Mini Piezometer (GEI 2024)
- Staff Gauge (GEI 2024)
- Staff Gauge/Mini Piezometer (GEI 2024)
- Drive Point/Staff Gauge (GEMTEC 2023)

Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Hydrogeologic Investigation

Figure 11B  
 Hydrogeological  
 Monitoring Locations







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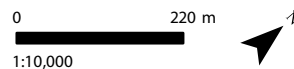
**NOTES:**  
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**Legend**

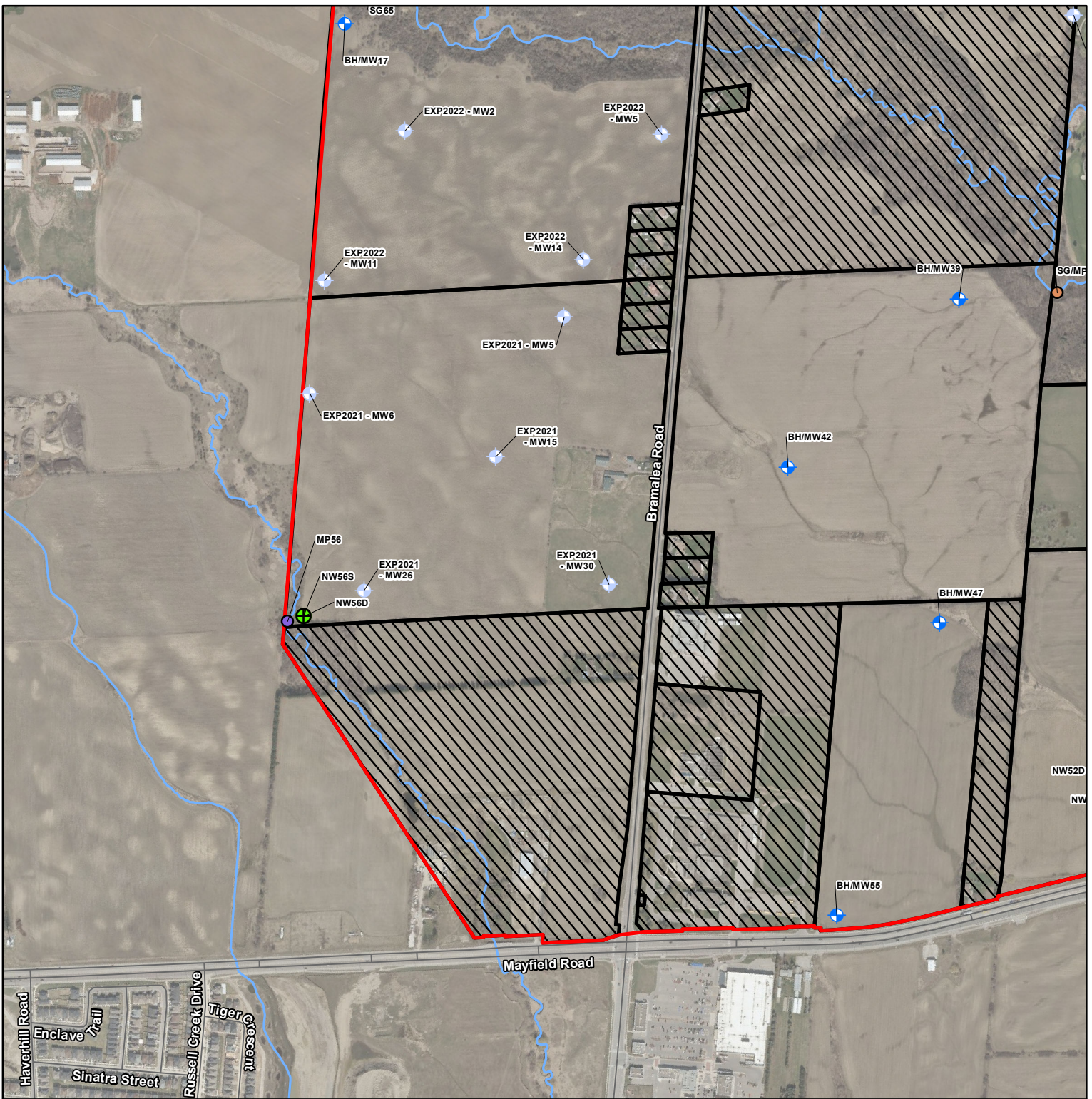
- Study Area
- Non-Participating Property
- Participating Property
- ◆ Borehole/Monitoring Well (GEI 2024)
- ⊕ Nested Well (GEI 2024)
- ◆ Monitoring Well (EXP 2021, 2022 & GEMTEC 2023)
- Mini Piezometer (GEI 2024)
- Staff Gauge (GEI 2024)
- Staff Gauge/Mini Piezometer (GEI 2024)
- Drive Point/Staff Gauge (GEMTEC 2023)

Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Hydrogeologic Investigation

Figure 11C  
 Hydrogeological  
 Monitoring Locations







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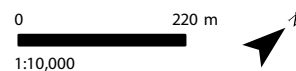
**NOTES:**  
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 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2024.  
 3. Contains information made available under the Toronto and Region Conservation Authority (TRCA's) Open Data License v1.0

**Legend**

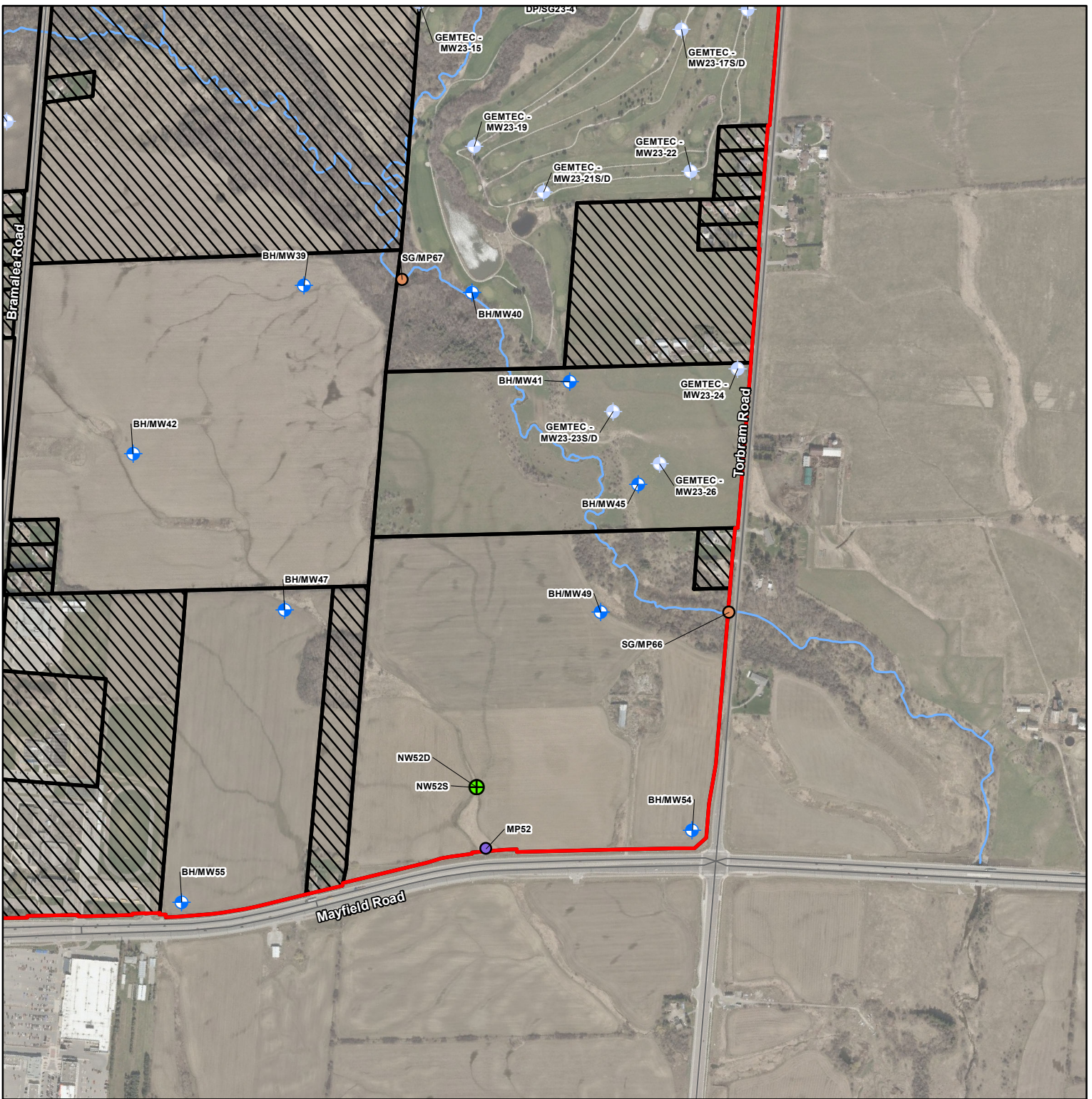
- Study Area
- Non-Participating Property
- Participating Property
- + Borehole/Monitoring Well (GEI 2024)
- + Nested Well (GEI 2024)
- + Monitoring Well (EXP 2021, 2022 & GEMTEC 2023)
- Mini Piezometer (GEI 2024)
- Staff Gauge (GEI 2024)
- Staff Gauge/Mini Piezometer (GEI 2024)
- Drive Point/Staff Gauge (GEMTEC 2023)

Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Hydrogeologic Investigation

## Figure 11D Hydrogeological Monitoring Locations







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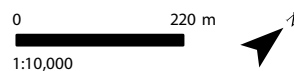
**NOTES:**  
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**Legend**

- Study Area
- Non-Participating Property
- Participating Property
- ◆ Borehole/Monitoring Well (GEI 2024)
- ⊕ Nested Well (GEI 2024)
- ◆ Monitoring Well (EXP 2021, 2022 & GEMTEC 2023)
- Mini Piezometer (GEI 2024)
- Staff Gauge (GEI 2024)
- Staff Gauge/Mini Piezometer (GEI 2024)
- Drive Point/Staff Gauge (GEMTEC 2023)

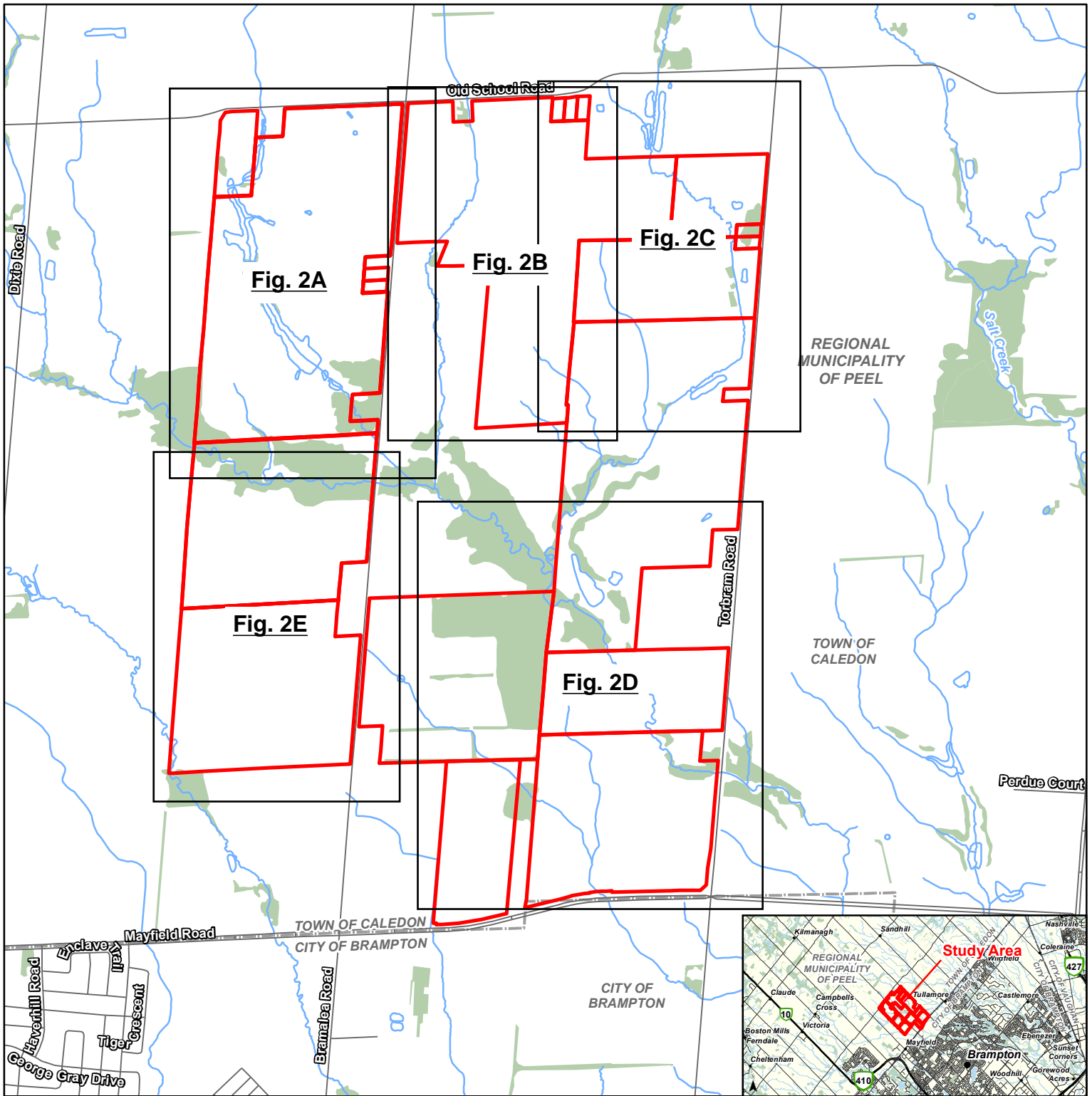
Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration Report  
 Hydrogeologic Investigation

## Figure 11E Hydrogeological Monitoring Locations



## **Appendix E2 – GEI Borehole & Monitoring Well Location Figures**





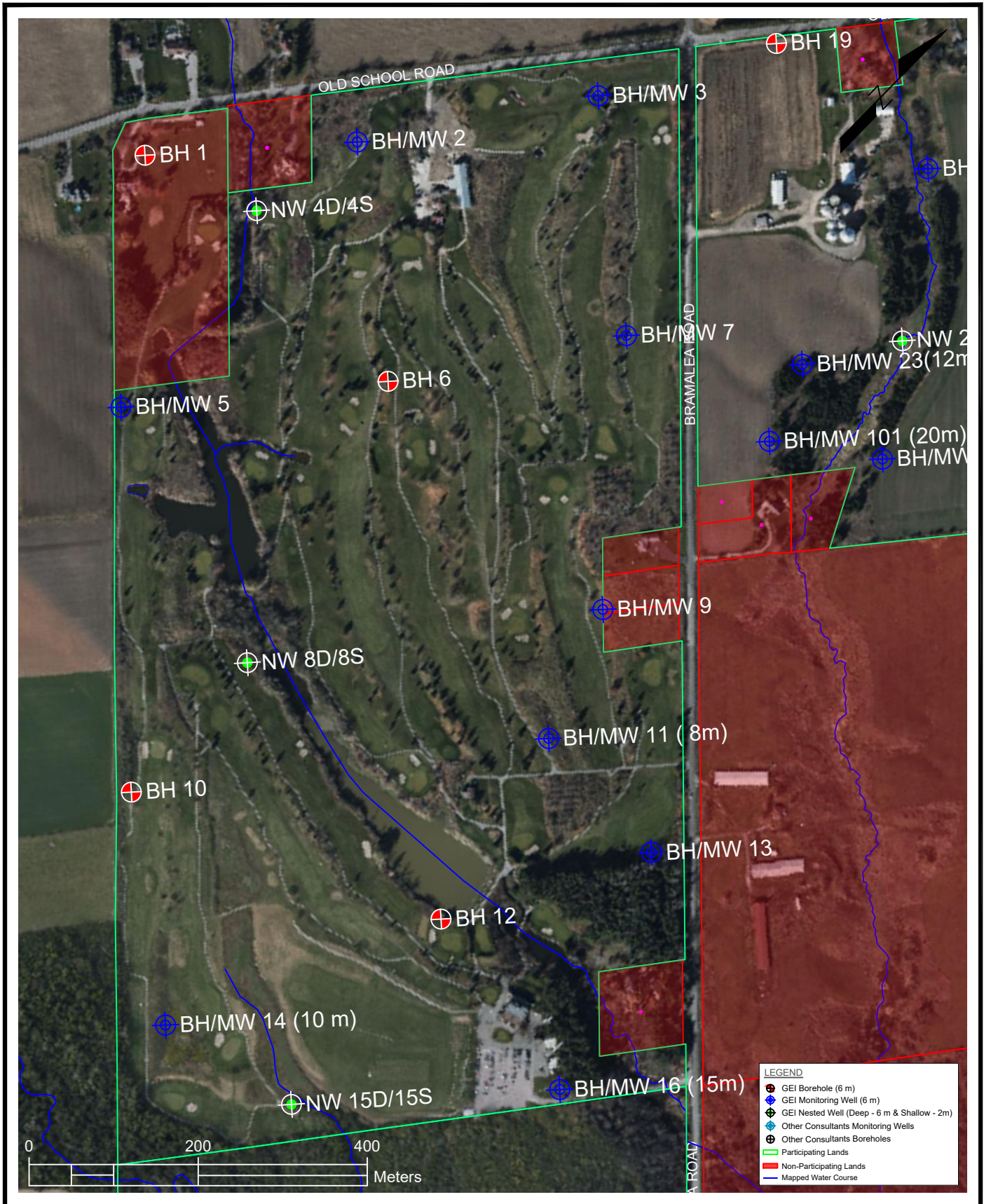
**NOTES:**  
 1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere.  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2024, © Town of Caledon, 2024.

- Legend**
- Study Area
  - Watercourse
  - Waterbody
  - Wooded Area

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 Phase 1 - Subwatershed Characterization and Integration Report  
 Geotechnical Investigation

**Figure 1 - Site Location and Context Plan**





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Phase 1 - Subwatershed Characterization and Integration  
Report



Borehole Location Plan  
Property 1

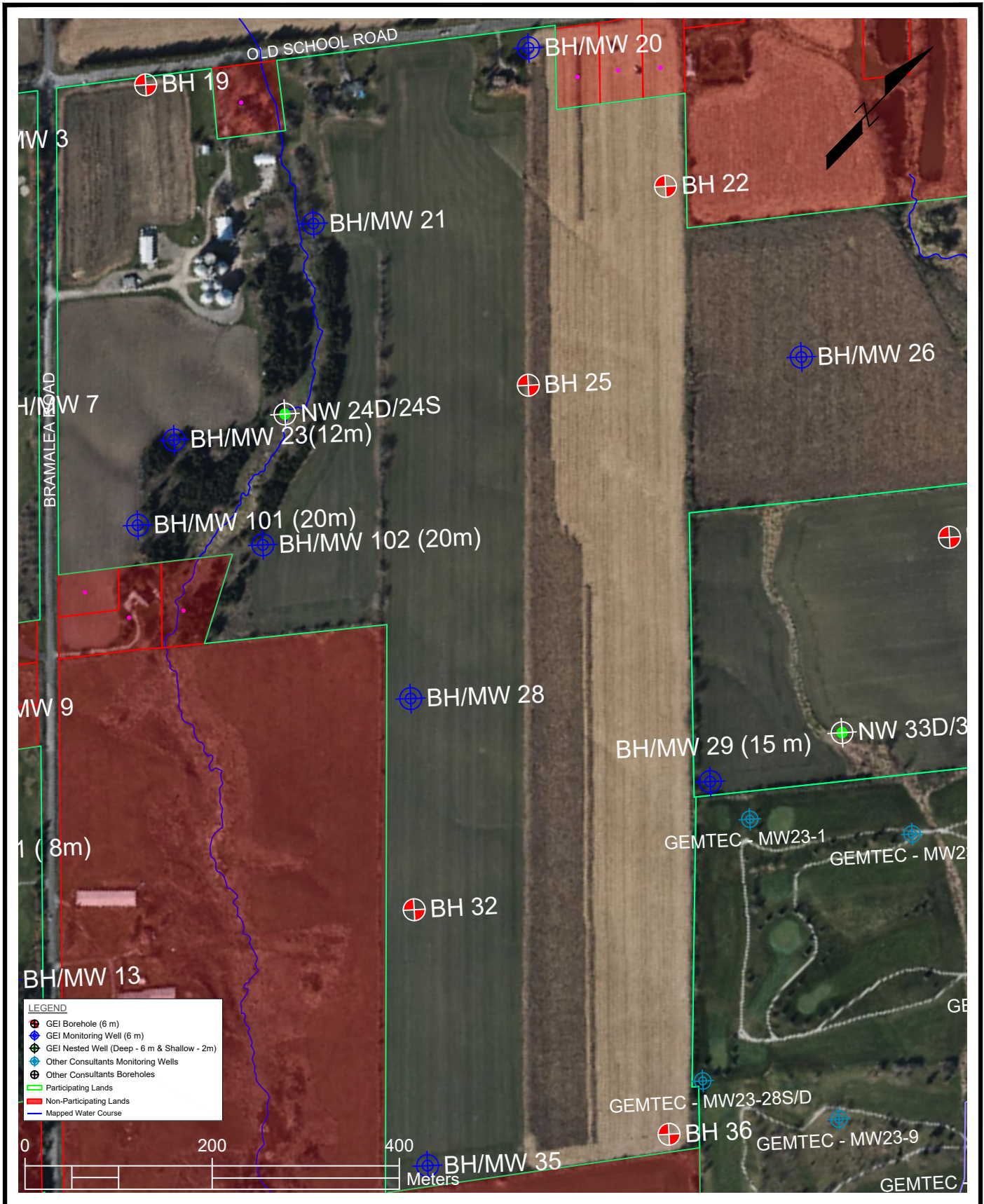
Geotechnical Investigation

Project 2400278

June 2024

Fig. 2A





Mayfield Tullamore Landowner Group  
 Phase 1 - Subwatershed Characterization and Integration  
 Report



Borehole Location Plan  
 Property 4

Geotechnical Investigation

Project 2400278

June 2024

Fig. 2B





**LEGEND**

- GEI Borehole (6 m)
- GEI Monitoring Well (6 m)
- GEI Nested Well (Deep - 6 m & Shallow - 2m)
- Other Consultants Monitoring Wells
- Other Consultants Boreholes
- Participating Lands
- Non-Participating Lands
- Mapped Water Course

Mayfield Tullamore Landowner Group  
Phase 1 - Subwatershed Characterization and Integration  
Report



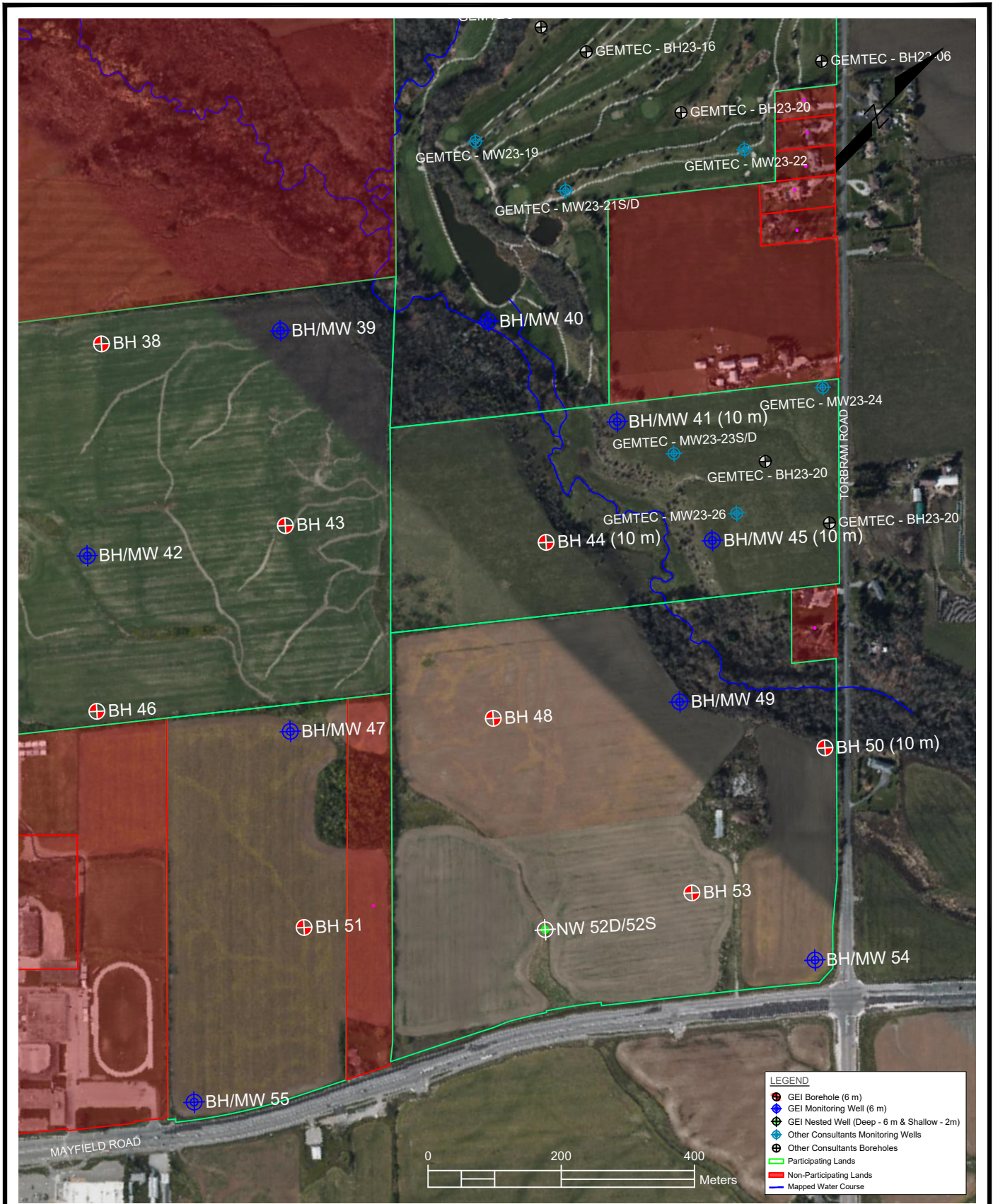
**Borehole Location Plan**  
Property 4, 7, 8, and 9

Geotechnical Investigation

Project 2400278

June 2024 Fig. 2C





Mayfield Tullamore Landowner Group  
Phase 1 - Subwatershed Characterization and Integration  
Report



Borehole Location Plan  
Property 5, 6, 9, 10, and 11

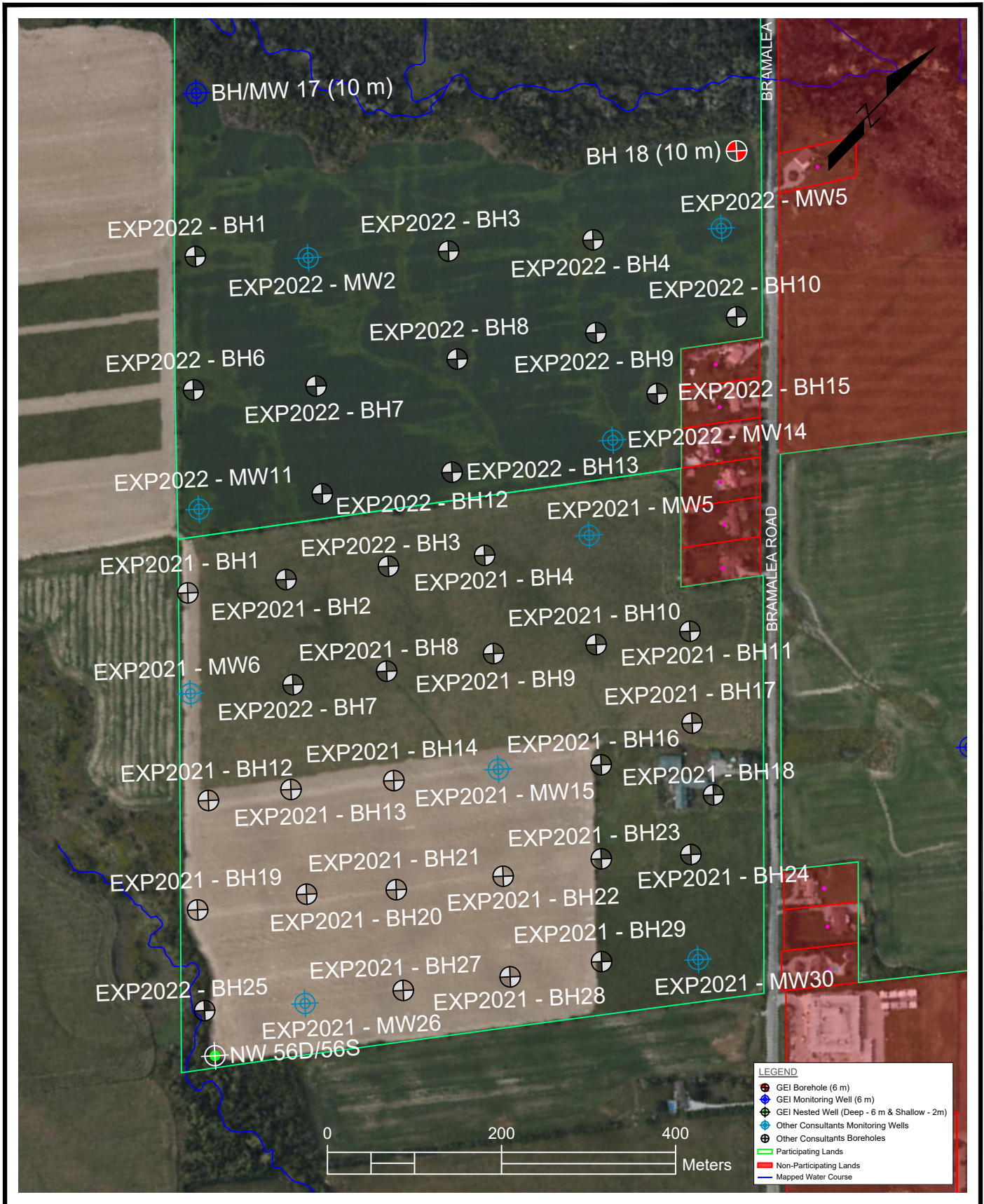
Geotechnical Investigation

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June 2024

Fig. 2D





Mayfield Tullamore Landowner Group  
Phase 1 - Subwatershed Characterization and Integration  
Report



Borehole Location Plan  
Property 2 and 3

Geotechnical Investigation

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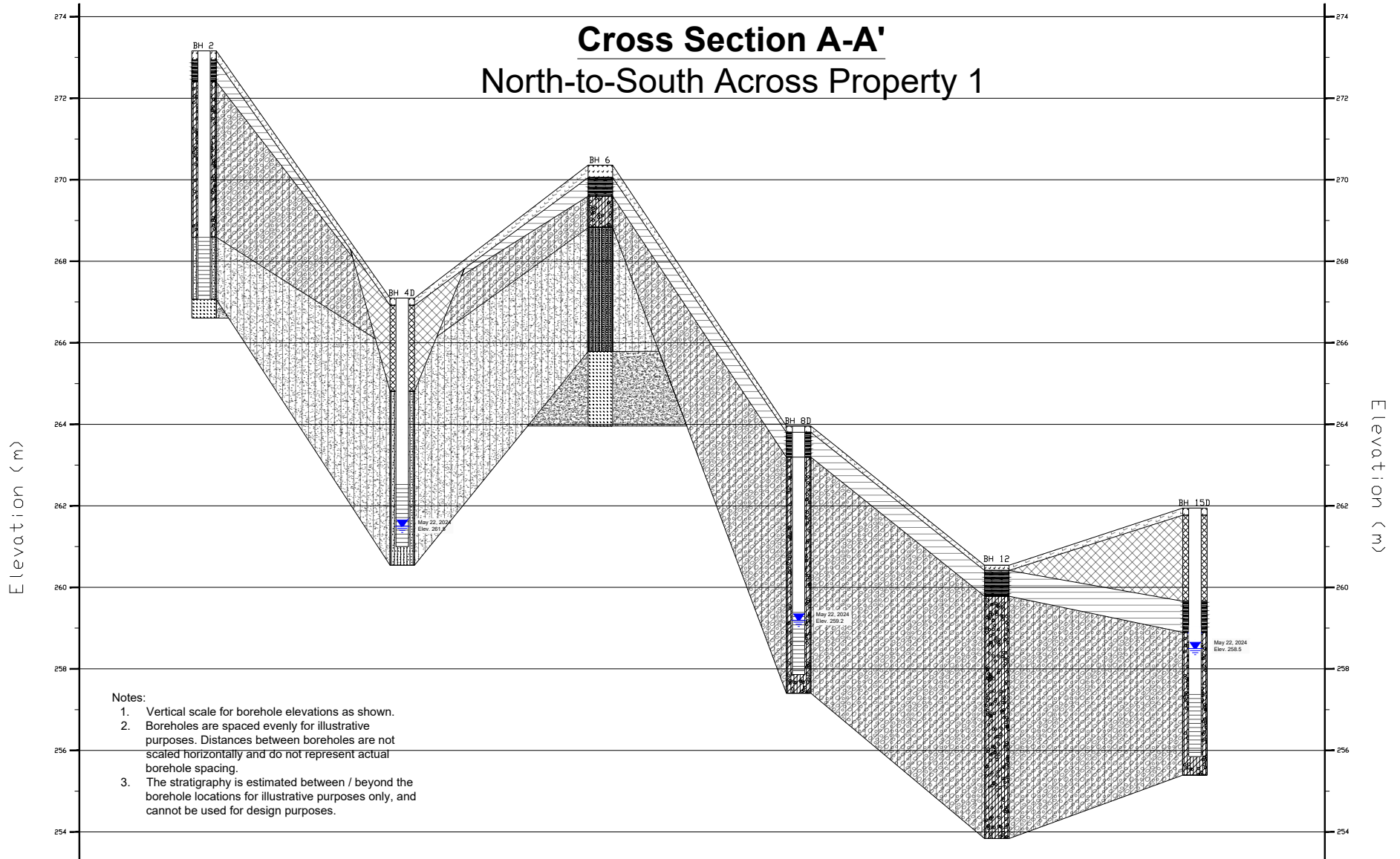
June 2024

Fig. 2E



# Cross Section A-A'

## North-to-South Across Property 1



LEGEND	
	Topsoil
	Sand
	Weathered/Disturbed
	Clayey Silt Glacial Till
	Sandy Silty
	Fill
	Groundwater Level

Mayfield Tullamore Local Subwatershed Study  
Phase 1 Report

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Mayfield Tullamore Landowner Group Inc.

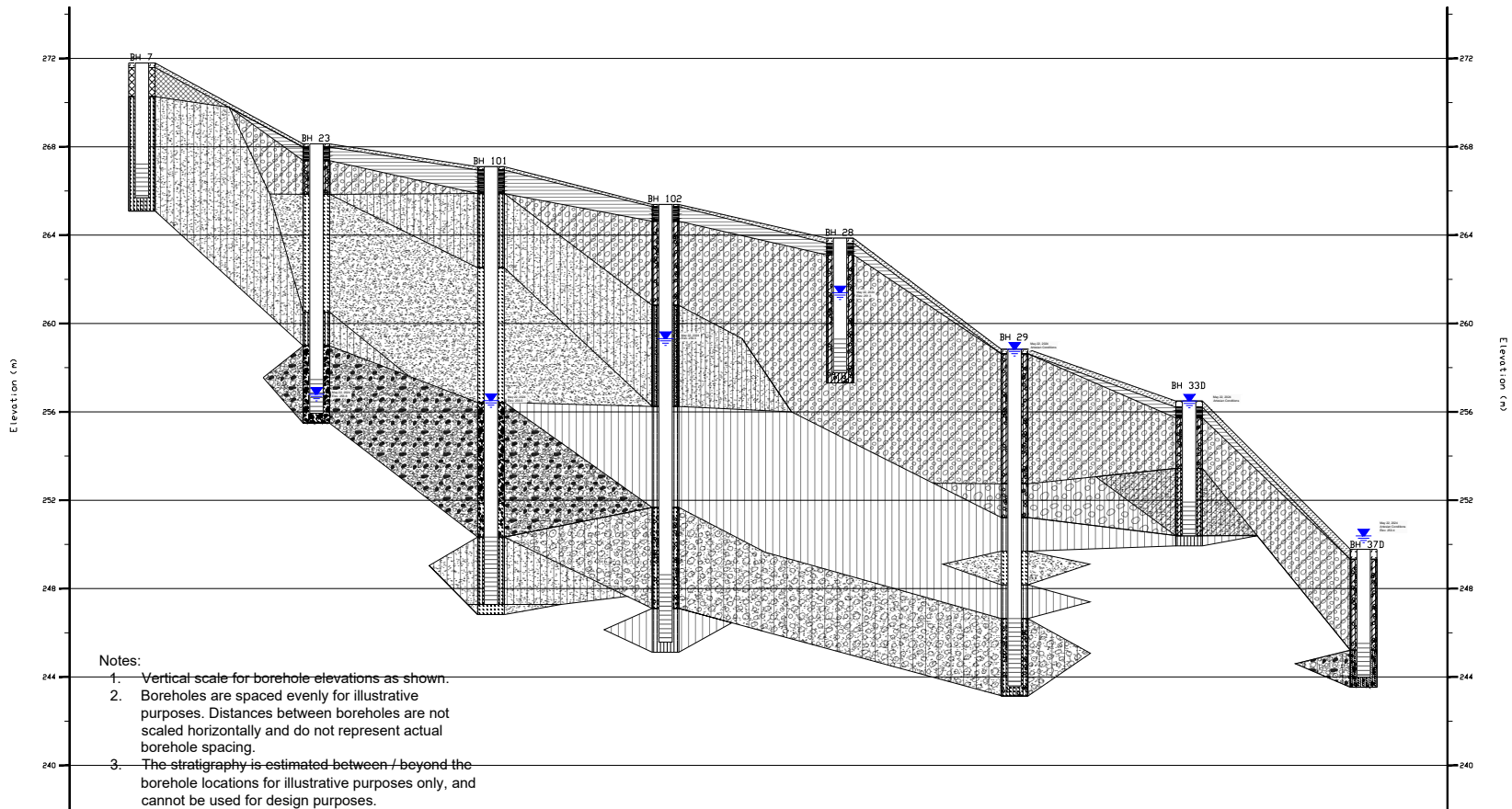


Cross Section A-A'

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Project 2100278    August 2024    Fig. 3A

## Cross Section B-B' West-to-East Across Properties 4 & 8



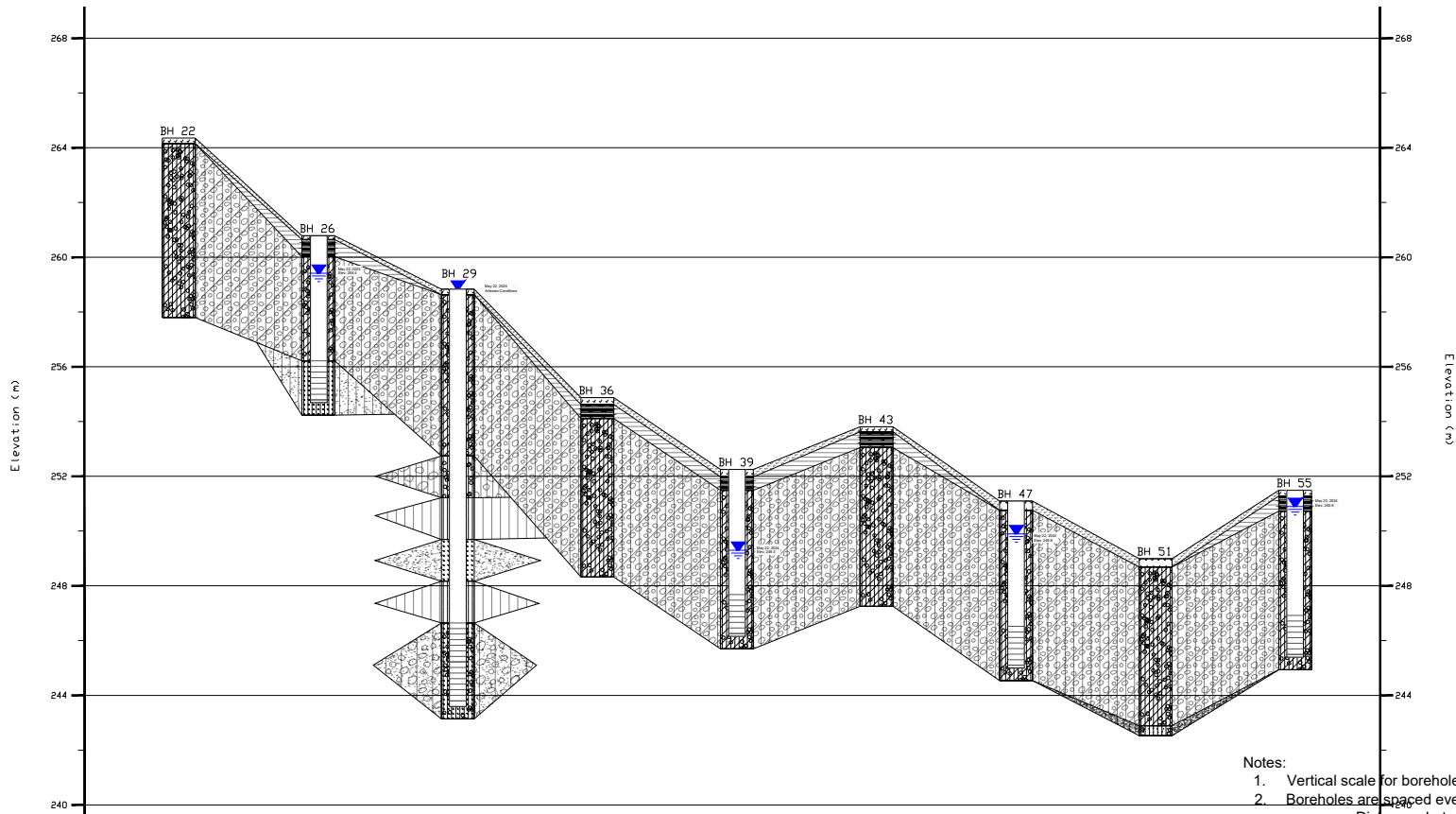
LEGEND		

Mayfield Tullamore Local Subwatershed Study Phase 1 Report		Cross Section B-B'
Mayfield Tullamore Landowner Group Inc.	Project 2400278	August 2024
		Fig. 3B



# Cross Section C-C'

## North-to-South Across Properties 4, 5 & 6



- Notes:
1. Vertical scale for borehole elevations as shown.
  2. Boreholes are spaced evenly for illustrative purposes. Distances between boreholes are not scaled horizontally and do not represent actual borehole spacing.
  3. The stratigraphy is estimated between / beyond the borehole locations for illustrative purposes only, and cannot be used for design purposes.

LEGEND			
	Topsail		Silt
	Weathered/Disturbed		Gravelly Sand
	Sandy Silt/Sand and Silt		Clayey Silt Glacial Till
	Sand		Silt and Sand
			Groundwater Level

Mayfield Tullamore Local Subwatershed Study  
Phase 1 Report

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Mayfield Tullamore Landowner Group Inc.

**GEI** Consultants

Project 2400278

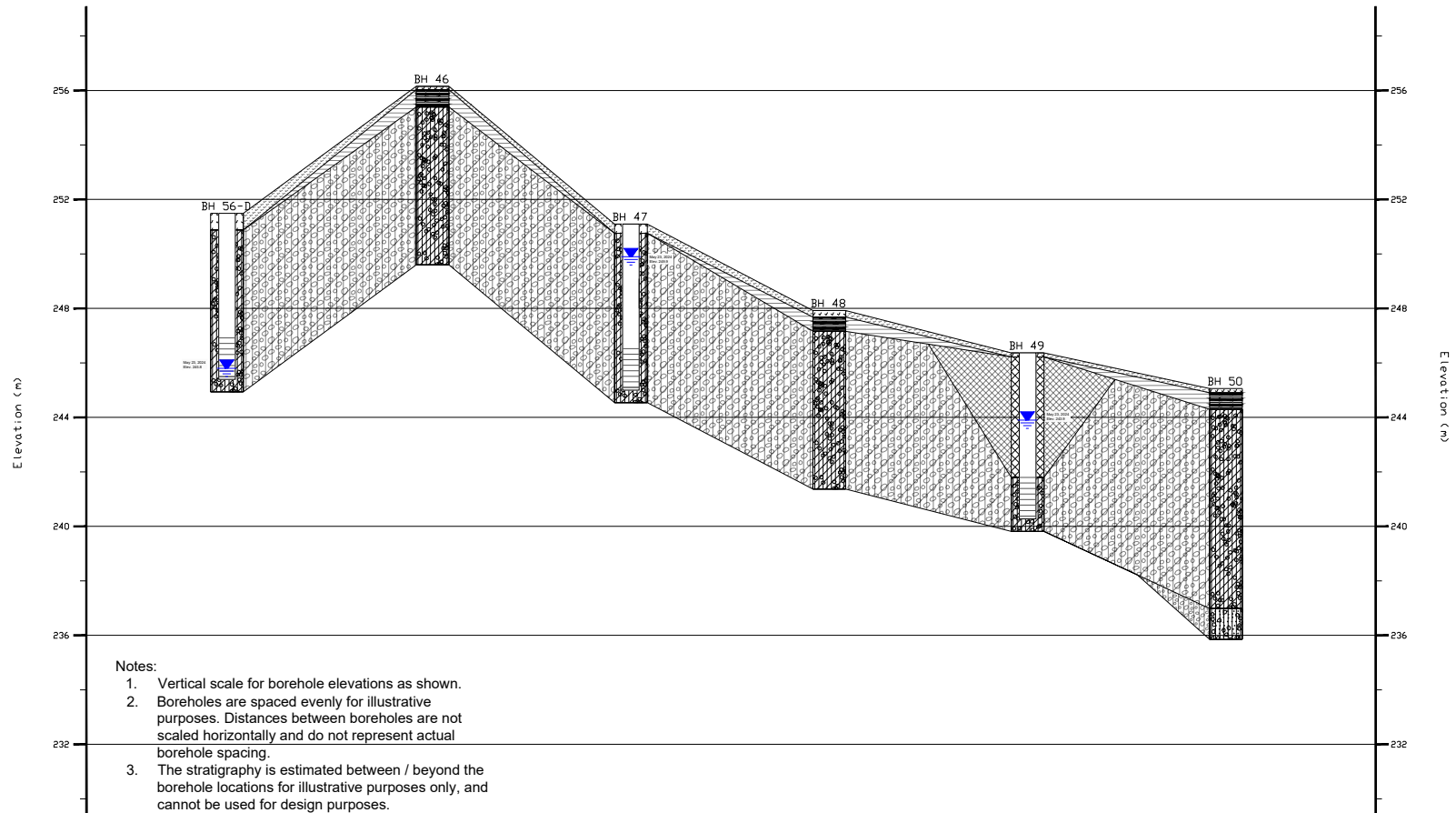
Cross Section C-C'

August 2024

Fig. 3C

## Cross Section D-D'

### West-to-East Across Properties 3, 5, 6 & 11



LEGEND		

Mayfield Tullamore Local Subwatershed Study  
Phase 1 Report

Mayfield Tullamore Landowner Group Inc.



Project 2400278

Cross Section D-D'

August 2024 Fig. 3D



## **Appendix E3 – Borehole Logs (GEI 2024)**

# RECORD OF BOREHOLE No. 1



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: FH Northing: 4848917 Date Started: Apr 29/24  
 Reviewed By: RW Easting: 595473 Date Completed: Apr 29/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 270.6	TOPSOIL: 280 mm	SS	1	100	3	270.6												
0.3 - 270.3	WEATHERED/DISTURBED: Trace organics, trace rootlets, very loose, brown, moist	SS	2	100	16	270.3												
0.8 - 269.8	SANDY SILT GLACIAL TILL: Clayey, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist --- Some clay ---	SS	3	100	17	269.8												
		SS	4	100	34	268												
		SS	5	100	50+	268												
4.6 - 266.0	SAND AND SILT: Trace clay, very dense, brown, wet	SS	6	100	94	266.0												
6.1 - 264.5	SANDY SILT GLACIAL TILL: Some clay, trace gravel, inferred cobbles and boulders, very dense, brown, moist Borehole Terminated at 6.6 m	SS	7	100	68	264.5												

Groundwater depth encountered on completion of drilling: 5.9 m. Cave depth after auger removal: Open  
 Groundwater depth observed on: \_\_\_\_\_ Groundwater Elevation: \_\_\_\_\_

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Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.

Scale: 1 :100

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# RECORD OF BOREHOLE No. 2



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849106 Date Started: Apr 24/24  
 Reviewed By: RW Easting: 595639 Date Completed: Apr 24/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2	TOPSOIL: 230 mm	SS	1	100	4	273.2												
0.2 - 0.8	WEATHERED/DISTURBED: Trace organics, firm, brown, moist	SS	2	100	19	272.4												
0.8 - 4.6	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	31	272.0												
		SS	4	100	35	271.5												
		SS	5	100	42	271.0												
4.6 - 6.1	SANDY SILT: Very dense, brown, moist	SS	6	100	50+	268.6												
6.1 - 6.6	SAND: Some silt, trace gravel, very dense, brown, moist	SS	7	100	61	266.6												
Borehole Terminated at 6.6 m																		

Groundwater depth encountered on completion of drilling: Dry Cave depth after auger removal: Open  
 Groundwater depth observed on: May 22/24 at depth of: Dry Groundwater Elevation: \_\_\_\_\_

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Scale: 1 :100

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# RECORD OF BOREHOLE No. 3



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4849347** Date Started: **Apr 24/24**  
 Reviewed By: **RW** Easting: **595801** Date Completed: **Apr 24/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2	TOPSOIL: 205 mm	SS	1	100	7	275.2												
0.2 - 0.8	WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	17	274.4												
0.8 - 2.3	CLAYEY SILT GLACIAL TILL: Sandy, trace gravel, inferred cobbles and boulders, very stiff, brown, moist	SS	3	100	20	274.0												
2.3 - 2.72	SANDY SILT TO SILTY SAND: Trace clay, very dense to dense, brown, moist	SS	4	100	59	272.9												
2.72 - 4.6	--- Some layering of silty clay ---	SS	5	100	49	272.0												
4.6 - 6.6		SS	6	100	50	270.0												
6.6 - 6.6	Borehole Terminated at 6.6 m	SS	7	100	48	268.6												

Groundwater depth encountered on completion of drilling: 5.2 m. Cave depth after auger removal: 5.5 m.  
 Groundwater depth observed on: May 22/24 at depth of: 5.8 m. Groundwater Elevation: 269.4 m

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Scale: 1 : 100  
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# RECORD OF BOREHOLE No. 4D



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4848965** Date Started: **Apr 24/24**  
 Reviewed By: **RW** Easting: **595612** Date Completed: **Apr 24/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2 TOPSOIL: 180 mm	SS	1	100	6		267.1												
0.2 - 1.5 FILL: Clayey silt, sandy, trace organics, trace gravel, firm, brown with dark brown, moist	SS	2	100	9		266.9												
1.5 - 2.3 FILL: Sand with clayey silt pockets, trace organics, loose, brown, moist	SS	3	100	7		265.6												
2.3 - 2.64 SANDY SILT: Trace clay, loose to very loose, brown, moist to wet	SS	4	100	7		264.8												
	SS	5	100	5		264												
	SS	6	100	2		262												
	SS	7	100	12		260.5												
Borehole Terminated at 6.6 m													First Water Strike SS6 0 27 72 1					

# RECORD OF BOREHOLE No. 4S



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848966 Date Started: Apr 24/24  
 Reviewed By: RW Easting: 595612 Date Completed: Apr 24/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING				LAB TESTING				Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)			
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)				Atterberg Limits				GR	SA	SI	CL
0.0 - 267.1 TOPSOIL: 180 mm	SS	1	100	6		0													
0.2 - 266.9 FILL: Clayey silt, sandy, trace organics, trace gravel, firm, brown with dark brown, moist	SS	2	100	9		266					15	24							
1.5 - 265.6 FILL: Sand with clayey silt pockets, trace organics, loose, brown, moist	SS	3	100	7		265					18								
2.3 - 264.8 SANDY SILT: Trace clay, loose to very loose, brown, moist to wet	SS	4	100	7		264						26							
2.7 - 264.4 Borehole Terminated at 2.7 m						264													

<b>GEI CONSULTANTS</b> Canada Ltd. www.geiconsultants.com	Groundwater depth encountered on completion of drilling: <u>        </u>
	Groundwater depth observed on: May 22/24 at depth of: Dry <u>        </u> Groundwater Elevation: <u>        </u>
Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.	
Scale: 1 :100 Page: 1 of 1	



# RECORD OF BOREHOLE No. 5



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4848687**      Date Started: **Apr 26/24**  
 Reviewed By: **RW**      Easting: **595664**      Date Completed: **Apr 26/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.3	TOPSOIL: 255 mm	SS 1	1	100	3	267.5												
0.3 - 0.8	WEATHERED/DISTURBED: Soft, brown, moist	SS 2	2	100	24	266.8												
0.8 - 2.0	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS 3	3	100	62	266												
2.0 - 2.5		SS 4	4	100	79													
2.5 - 3.0		SS 5	5	100	89													
3.0 - 4.5		SS 6	6	100	92	264												
4.5 - 6.2	--- Grey ---	SS 7	7	100	50+	262												
Borehole Terminated at 6.2 m																		

# RECORD OF BOREHOLE No. 6



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848933 Date Started: Apr 24/24  
 Reviewed By: RW Easting: 595865 Date Completed: Apr 24/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)							
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Atterberg Limits		Water Content (%)	GR	SA	SI	CL			
0.0 - 270.4																		
0.3 - 270.1	TOPSOIL: 305 mm	SS	1	100	7	270	○ 7											
0.8 - 269.6	WEATHERED/DISTURBED: Trace organics, firm, brown, moist	SS	2	100	22		○ 22											
1.8 - 268.8	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff, brown, moist	SS	3	100	6		○ 6											
	LAYERED SILTY SAND TO SANDY SILT: Loose to compact, brown, moist	SS	4	100	20		○ 20											
	--- Very dense ---	SS	5	100	55		○ 55											
4.6 - 265.8	SAND: Some silt, trace gravel, very dense, brown, damp to moist	SS	6	100	70		○ 70	○ 3										
6.4 - 264.0	Borehole Terminated at 6.4 m	SS	7	100	82		○ 82	○ 3										

Groundwater depth encountered on completion of drilling: Dry Cave depth after auger removal: Open  
 Groundwater depth observed on: Groundwater Elevation:

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# RECORD OF BOREHOLE No. 7



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849171 Date Started: Apr 23/24  
 Reviewed By: RW Easting: 596026 Date Completed: Apr 23/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 271.8 TOPSOIL: 205 mm	SS	1	100	8		0	8											
0.2 - 271.6 FILL: Clayey silt, some sand, trace gravel, trace organics, trace rootlets, stiff, brown to dark brown, moist	SS	2	100	8			8											
1.5 - 270.3 SAND AND SILT: Trace clay, compact, brown, moist --- Very dense ---	SS	3	100	20		2	20											
	SS	4	100	52			52											
	SS	5	100	56			56											
	SS	6	100	79		4	79											
	SS	7	100	43		6	43											
6.7 - 265.1 Borehole Terminated at 6.7 m																		

# RECORD OF BOREHOLE No. 8D



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4848580**      Date Started: **Apr 25/24**  
 Reviewed By: **RW**      Easting: **595984**      Date Completed: **Apr 25/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)			
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI
0.0 0.2 0.8 6.6	TOPSOIL: 150 mm WEATHERED/DISTURBED: Firm, brown, moist CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff, brown, moist --- Hard ---  --- Grey ---  --- Some clay, some sand ---	SS	1	100	6	264.0 263.8 263.2 257.4	6 9 33 44 46 37 71	○ SPT ● DCPT	PL LL	13 18 10 9 14 13 15					
Borehole Terminated at 6.6 m															



# RECORD OF BOREHOLE No. 8S



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848581 Date Started: Apr 25/24  
 Reviewed By: RW Easting: 595984 Date Completed: Apr 25/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)	
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)							SPT "N" Value
0.0 0.2 TOPSOIL: 150 mm WEATHERED/DISTURBED: Firm, brown, moist 0.8 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff, brown, moist --- Hard --- 2.7 Borehole Terminated at 2.7 m	SS	1	100	6		Shear Strength Testing (kPa) × Other Test + Pocket Penetrometer ▲ Field Vane (Intact) △ Field Vane (Remolded) 40 80 120 160 Penetration Testing ○ SPT ● DCPT 10 20 30 40	△ Combustible Organic Vapour (ppm) ▲ Combustible Organic Vapour (%LEL) ◇ Total Organic Vapour (ppm) 100 200 300 400 Atterberg Limits PL Water Content (%) LL 10 20 30 40				
					0	263.8	6	13			
					0.8	263.1	9	18			
						262	33	10			
					2	261.1	44	9			

# RECORD OF BOREHOLE No. 9



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4848922** Date Started: **Apr 23/24**  
 Reviewed By: **RW** Easting: **596236** Date Completed: **Apr 23/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)											
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL							
0.0 - 0.2	TOPSOIL: 205 mm	SS	1	100	6	266.2																	
0.2 - 0.8	WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	18	265.9																	
0.8 - 1.5	CLAYEY SILT GLACIAL TILL: Sandy, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	48	265.4																	
1.5 - 2.0	SANDY SILT GLACIAL TILL: Some clay to clayey, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	4	100	39	264																	
2.0 - 2.5		SS	5	100	97	264																	
2.5 - 3.0																							
3.0 - 3.5		SS	6	100	80	262																	
3.5 - 4.0																							
4.0 - 4.5		SS	7	100	85	260																	
4.5 - 5.0																							
5.0 - 5.5																							
5.5 - 6.0																							
6.0 - 6.5																							
6.5 - 7.0																							
7.0 - 7.6	SILT: Trace sand, trace clay, very dense, brown, moist to wet	SS	8	100	65	258.5																	
7.6 - 8.0	--- Compact, grey ---																						
8.0 - 8.5		SS	9	100	24	258																	
8.5 - 9.0																							
9.0 - 9.5																							
9.5 - 10.0																							
10.0 - 10.7	SAND AND SILT: Trace clay, dense, brown, wet	SS	10	100	36	255.5																	
10.7 - 11.0	--- Some clayey silt layers ---																						
11.0 - 11.5		SS	11	100	43	254																	
11.5 - 12.0																							
12.0 - 12.5																							
12.5 - 13.0																							
13.0 - 13.7	SILTY SAND: Trace gravel, trace clay, dense, brown, wet	SS	12	100	33	252.4																	
13.7 - 14.0	--- Very dense ---																						
14.0 - 14.5		SS	13	100	79	250.5																	
14.5 - 15.7	Borehole Terminated at 15.7 m																						

Groundwater depth encountered on completion of drilling: 2.4 m. Cave depth after auger removal: 2.7 m.  
 Groundwater depth observed on: May 22/24 at depth of: 10.4 m. Groundwater Elevation: 255.8 m

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# RECORD OF BOREHOLE No. 10



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848375 Date Started: Apr 25/24  
 Reviewed By: RW Easting: 595995 Date Completed: Apr 25/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)				
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL
0.0 0.2 0.8 6.6	TOPSOIL: 190 mm WEATHERED/DISTURBED: Firm, brown, moist CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, hard, brown/grey, moist  --- Greyish brown ---  --- Grey ---	SS	1	100	6	264.8 264.6 264.0	6	31	12	22						
		SS	2	100	31			15								
		SS	3	100	42			14								
		SS	4	100	56			16								
		SS	5	100	55			10								
		SS	6	100	66			11								
		SS	7	100	34											
Borehole Terminated at 6.6 m																

# RECORD OF BOREHOLE No. 11



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4848769** Date Started: **Apr 23/24**  
 Reviewed By: **RW** Easting: **596299** Date Completed: **Apr 23/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 265.5 0.2 - 265.3 TOPSOIL: 205 mm FILL: Silt, trace gravel, trace clay, trace organics, loose, dark brown, moist	SS	1	100	6														
2.3 - 263.2 CLAYEY SILT: Trace gravel, stiff to hard, dark brown, moist	SS	2	100	9														
	SS	3	100	9														
4.6 - 260.9 SAND: Trace to some silt, trace gravel, very dense, brown, moist	SS	4	100	13														
	SS	5	100	33														
	SS	6	100	89														
	SS	7	100	92														
7.6 - 257.9 8.0 - 257.5 SILT: Trace sand, trace gravel, very dense, brown, moist Borehole Terminated at 8.0 m	SS	8	100	81														

<b>GEI CONSULTANTS</b> Canada Ltd. www.geiconsultants.com	Groundwater depth encountered on completion of drilling: Dry Groundwater depth observed on: May 22/24 at depth of: Dry	Cave depth after auger removal: Open Groundwater Elevation:
	Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.	
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# RECORD OF BOREHOLE No. 12



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848528 Date Started: Apr 22/24  
 Reviewed By: RW Easting: 596360 Date Completed: Apr 22/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING				Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Shear Strength Testing (kPa)	Atterberg Limits	Water Content (%)		GR	SA	SI	CL		
0.0 - 0.8 TOPSOIL: 125 mm WEATHERED/DISTURBED: Stiff, brown, moist	SS	1	100	13	0	260	13	14										
0.8 - 2.598 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, hard, brown, moist	SS	2	100	30	0.8	259.8	30	17										
	SS	3	100	39	1.5	259.1	39	17										
	SS	4	100	52	2.5	258.5	52	13										
	SS	5	100	58	3.5	257.5	58	13										
--- Very stiff, grey ---					4.5	256.5												
	SS	6	100	25	5.5	255.5	25	11										
					6.5	254.5												
6.7 - 253.8 Borehole Terminated at 6.7 m	SS	7	100	15	6.7	253.8	15	11										

# RECORD OF BOREHOLE No. 13



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4848760** Date Started: **Apr 23/24**  
 Reviewed By: **RW** Easting: **596480** Date Completed: **Apr 23/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 262.1 TOPSOIL: 100 mm	SS	1	100	3		262												
262.1 - 256.0 FILL: Clayey silt, some sand to sandy, trace gravel, trace organics, trace rootlets, firm, brown to dark brown, moist	SS	2	100	5		262												
	SS	3	100	4		262												
	SS	4	100	5		262												
	SS	5	100	6		262												
	SS	6	100	25		258												
256.0 - 256.0 SILT: Trace sand, loose, brown, moist	SS	7	100	7		256												
256.0 - 254.5 SAND: Trace silt, trace gravel, compact, brown, moist	SS	8	100	29		254.5												
254.5 - 253.9 Borehole Terminated at 8.2 m						253.9												



# RECORD OF BOREHOLE No. 14



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4848209** Date Started: **Apr 25/24**  
 Reviewed By: **RW** Easting: **596219** Date Completed: **Apr 25/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.3 TOPSOIL: 255 mm	SS	1	100	7		263.3												
0.3 - 0.8 WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	28		262.8												
0.8 - 2.0 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	36		262.0												
	SS	4	100	44		261.5												
	SS	5	100	53		261.0												
2.0 - 4.0 --- Greyish brown ---	SS	6	100	44		260.0												
	SS	7	100	41		258.5												
4.0 - 6.0 --- Grey ---	SS	8	100	75		256.5												
6.0 - 9.1 SANDY SILT GLACIAL TILL: Some clay, trace gravel, inferred cobbles and boulders, very dense, grey, moist Borehole Terminated at 9.8 m	SS	9	100	59		254.4												

# RECORD OF BOREHOLE No. 15D



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848248 Date Started: Apr 25/24  
 Reviewed By: RW Easting: 596391 Date Completed: Apr 25/24

LITHOLOGY PROFILE		SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT "N" Value			Shear Strength Testing (kPa)		Atterberg Limits			GR	SA	SI	CL			
0.0	261.9																		
0.2	261.8	SS	1	100	7														
TOPSOIL: 180 mm FILL: Clayey silt, some sand, trace gravel, trace organics, firm, brown, moist		SS	2	100	7														
		SS	3	100	10														
2.3	259.7	SS	4	100	10														
WEATHERED/DISTURBED: Stiff, brown, moist																			
3.0	258.9	SS	5	100	31														
CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, hard, brown, moist																			
		SS	6	100	41														
--- Some clay ---																			
		SS	7	100	26														
--- Grey ---																			
6.6	255.4																		
Borehole Terminated at 6.6 m																			



# RECORD OF BOREHOLE No. 15S



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848248 Date Started: Apr 25/24  
 Reviewed By: RW Easting: 596390 Date Completed: Apr 25/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)							SPT "N" Value	Shear Strength Testing (kPa)	Atterberg Limits	Water Content (%)	GR
0.0 0.2 TOPSOIL: 180 mm FILL: Clayey silt, some sand, trace gravel, trace organics, firm, brown, moist 2.3 WEATHERED/DISTURBED: Stiff, brown, moist 2.7 Borehole Terminated at 2.7 m	SS	1	100	7		0	Shear Strength Testing (kPa) × Other Test + Pocket Penetrometer ▲ Field Vane (Intact) △ Field Vane (Remolded) 40 80 120 160 Penetration Testing ○ SPT ● DCPT 10 20 30 40	△ Combustible Organic Vapour (ppm) ▲ Combustible Organic Vapour (%LEL) ◇ Total Organic Vapour (ppm) 100 200 300 400 Atterberg Limits PL Water Content (%) LL 10 20 30 40							
	SS	2	100	7		7									
	SS	3	100	10		10									
	SS	4	100	10		10									

# RECORD OF BOREHOLE No. 16



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4848485** Date Started: **Apr 22/24**  
 Reviewed By: **RW** Easting: **596602** Date Completed: **Apr 22/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2 TOPSOIL: 230 mm	SS	1	100	8	0	259.6												
0.2 - 0.8 WEATHERED/DISTRUBED: Stiff, brown to dark brown, moist	SS	2	100	15	0.8	259.8												
0.8 - 2.0 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	32	2	258												
2.0 - 3.0 --- Greyish brown ---	SS	4	100	38	3	257												
3.0 - 4.0 --- Greyish brown ---	SS	5	100	46	4	256												
4.0 - 6.0 --- Greyish brown ---	SS	6	20	29	6	254												
6.0 - 6.1 SANDY SILT GLACIAL TILL: Trace clay, trace gravel, inferred cobbles and boulders, very dense, brown, moist	SS	7	100	79	6.1	253.5												
6.1 - 8.0 --- Greyish brown ---	SS	8	100	50+	8	252												
8.0 - 9.1 SILT: Trace sand, trace clay, very dense, brown, wet	SS	9	100	70	9.1	250.4												
9.1 - 12.2 --- Dense, grey, wet ---	SS	10	100	44	12	248												
12.2 - 13.7 SANDY SILT: Trace clay, compact, grey-brown, moist to wet	SS	11	100	27	12.2	247.4												
13.7 - 15.5 SILT: Some clay, trace sand, very dense, grey, moist	SS	12	100	98	13.7	245.9												
15.5 - 244.1 --- Some clayey silt layering ---	SS	13	100	80	15.5	244.1												
Borehole Terminated at 15.5 m													First Water Strike SS11 0 23 74 3					

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Groundwater depth encountered on completion of drilling: 13.7 m. Cave depth after auger removal: 14.3m.  
 Groundwater depth observed on: May 22/24 at depth of: 10.7 m. Groundwater Elevation: 248.9 m

Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.

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# RECORD OF BOREHOLE No. 17



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4847994**      Date Started: **May 17/24**  
 Reviewed By: **RW**      Easting: **596390**      Date Completed: **May 17/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2 TOPSOIL: 180 mm	SS	1	100	7		262.9												
0.2 - 0.8 WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	19		262.2												
0.8 - 2.0 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	26		262.0												
	SS	4	100	23		262.0												
	SS	5	100	27		260.0												
	SS	6	45	28		258.0												
6.1 - 6.8 SAND AND SILT GLACIAL TILL: Some clay, trace gravel, inferred cobbles and boulders, very dense, brown, moist	SS	7	100	86		256.8												
	SS	8	10	88		256.0												
9.6 Borehole Terminated at 9.6 m	SS	9	55	36		253.3												

Groundwater depth encountered on completion of drilling: 7.9 m.      Cave depth after auger removal: 8.8 m.  
 Groundwater depth observed on: May 23/24 at depth of: 3.0 m.      Groundwater Elevation: 259.9 m

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Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.

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# RECORD OF BOREHOLE No. 18



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848387 Date Started: May 16/24  
 Reviewed By: RW Easting: 596875 Date Completed: May 16/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0	TOPSOIL: 430 mm					259.2												
0.4	CLAYEY SILT GLACIAL TILL: Some sand, trace gravel, inferred cobbles and boulders, stiff to very stiff, brown, moist	SS	1	100	8		8											
		SS	2	100	15		15											
		SS	3	100	16		16											
		SS	4	100	28		28											
		SS	5	100	28		28											
	--- Grey ---	SS	6	100	14		14											
		SS	7	100	26		26											
	--- Hard ---	SS	8	100	30		30											
9.6	Borehole Terminated at 9.6 m	SS	9	100	32		32											



# RECORD OF BOREHOLE No. 19



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: TA Northing: 4849540 Date Started: Apr 29/24  
 Reviewed By: RW Easting: 595906 Date Completed: Apr 29/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 271.8																		
0.2 - 271.5	TOPSOIL: 255 mm	SS	1	83	5													
0.8 - 271.0	WEATHERED DISTURBED: Trace organics, firm, brown, moist	SS	2	100	6													
	CLAYEY SILT GLACIAL TILL: Sand, trace gravel, inferred cobbles and boulders, firm, brown, moist --- Hard ---	SS	3	100	35													
	---	SS	4	100	43													
	---	SS	5	100	85													
4.6 - 267.2	SAND AND SILT: Trace gravel, very dense, brown, moist	SS	6	90	96													
6.6 - 265.2	Borehole Terminated at 6.6 m	SS	7	100	71													

Groundwater depth encountered on completion of drilling: Dry      Cave depth after auger removal: Open  
 Groundwater depth observed on:      Groundwater Elevation:

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Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.

# RECORD OF BOREHOLE No. 20



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849858 Date Started: May 03/24  
 Reviewed By: RW Easting: 596166 Date Completed: May 03/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 268.6	TOPSOIL: 255 mm	SS	1	100	5	0	5		15									
0.3 - 268.3	FILL: Clayey silt, some sand, trace gravel, trace organics, trace rootlets, firm, dark brown, moist	SS	2	100	27	0.3	27		16									
0.8 - 267.8	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	35	0.8	35		17									
		SS	4	100	49	2	49		12									
		SS	5	100	62	2	62		12									
	--- Some clay, grey ---	SS	6	100	81	4	81		13									
6.6 - 262.0	Borehole Terminated at 6.6 m	SS	7	100	49	6	49		11									



# RECORD OF BOREHOLE No. 21



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: TA Northing: 4849563 Date Started: Apr 29/24  
 Reviewed By: RW Easting: 596137 Date Completed: Apr 29/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 0.2 266.4 266.2	TOPSOIL: 150 mm	SS	1	100	4	0	4											
0.6 265.6	WEATHERED/DISTURBED: Sandy clayey silt, trace gravel, firm to stiff, dark brown	SS	2	100	7	0.6	7											
2.3 264.1	CLAYEY SILT GLACIAL TILL: Sandy, trace gravel, inferred cobbles and boulders, firm to stiff, brown, moist	SS	3	100	11	2.3	11			13								
2.3 264.1	SAND: Trace to some silt, loose, brown orange, moist/ --- Wet ---	SS	4	100	7	2.3	7			20								
6.6 259.8	--- Compact ---	SS	5	100	6	4.0	6			44								
6.6 259.8	--- Compact ---	SS	6	100	6	5.0	6			22								
6.6 259.8	--- Compact ---	SS	7	100	11	6.6	11			22								
Borehole Terminated at 6.6 m												First Water Strike SS5						

# RECORD OF BOREHOLE No. 22



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4849857**      Date Started: **May 08/24**  
 Reviewed By: **RW**      Easting: **596375**      Date Completed: **May 08/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)							
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Shear Strength Testing (kPa)		Atterberg Limits	GR	SA	SI	CL			
0.0 - 0.2	TOPSOIL: 205 mm	SS 1	1	100	9	264.4	○ 18											
0.2 - 2.0	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff to very stiff, brown, moist --- Hard ---	SS 2	2	100	19		○ 19											
		SS 3	3	100	34		○ 34											
		SS 4	4	100	52	262	○ 52											
		SS 5	5	100	47		○ 47											
	--- Grey ---	SS 6	6	100	56	260	○ 56											
		SS 7	7	100	48	258	○ 48											
6.6	Borehole Terminated at 6.6 m																	

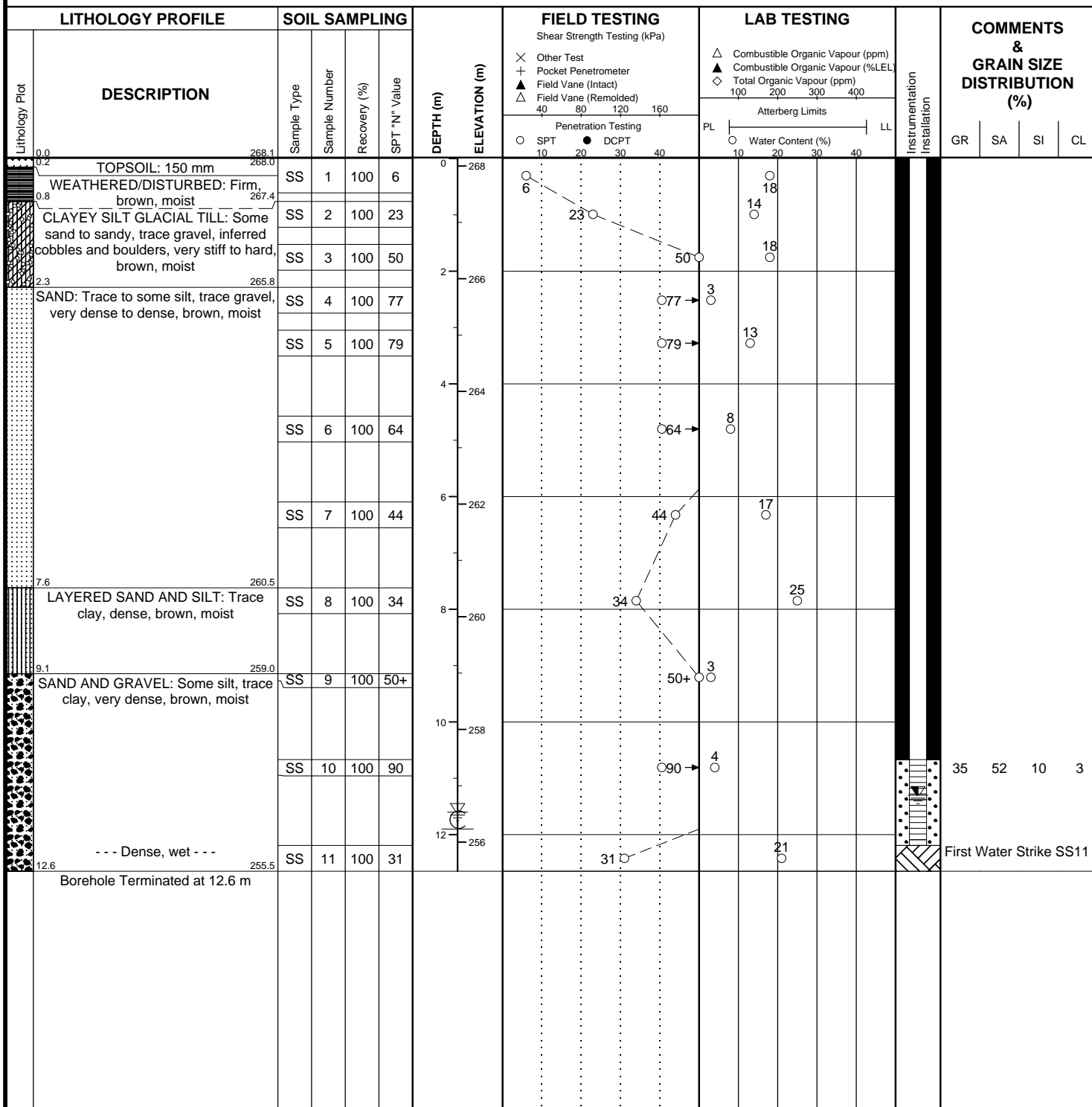
<b>GEI CONSULTANTS</b> Canada Ltd. www.geiconsultants.com	Groundwater depth encountered on completion of drilling: Dry      Cave depth after auger removal: Open
	Groundwater depth observed on:      Groundwater Elevation:
Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.	
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# RECORD OF BOREHOLE No. 23



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Hollow Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4849291**      Date Started: **May 02/24**  
 Reviewed By: **RW**      Easting: **596198**      Date Completed: **May 02/24**



Groundwater depth encountered on completion of drilling: 11.6 m.      Cave depth after auger removal: 11.9 m.  
 Groundwater depth observed on: May 22/24 at depth of: 11.3 m.      Groundwater Elevation: 256.8 m

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# RECORD OF BOREHOLE No. 24D



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **TA** Northing: **4849398** Date Started: **Apr 29/24**  
 Reviewed By: **RW** Easting: **596260** Date Completed: **Apr 29/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)							
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Penetration Testing		Water Content (%)	Atterberg Limits	GR	SA	SI	CL		
0.0 - 0.2	TOPSOIL: 180 mm	SS	1	35	6	263.8	6	13										
0.2 - 0.8	WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	34	263.7	34	13										
0.8 - 2.0	CLAYEY SILT GLACIAL TILL: Sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist --- Grey ---	SS	3	85	40	262	40	13										
2.0 - 3.0		SS	4	100	29		29	10										
3.0 - 4.0		SS	5	80	22		22	15										
4.0 - 5.0		SS	6	90	20	260	20	13										
5.0 - 6.5		SS	7	90	21	258	21	15										
Borehole Terminated at 6.5 m																		

# RECORD OF BOREHOLE No. 24S



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: TA Northing: 4849397 Date Started: Apr 29/24  
 Reviewed By: RW Easting: 596262 Date Completed: Apr 29/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING				INSTRUMENTATION INSTALLATION	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Shear Strength Testing (kPa)	Atterberg Limits	Water Content (%)			GR	SA	SI	CL	
0.0 0.2 0.8 2.7 TOPSOIL: 180 mm WEATHERED/DISTURBED: Firm, brown, moist CLAYEY SILT GLACIAL TILL: Sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist --- Grey --- Borehole Terminated at 2.7 m	SS	1	33	6	0	263.8	6	13										
	SS	2	100	34		263.0	34	13										
	SS	3	85	40		262	40	13										
	SS	4	100	29		261.0	29	10										

# RECORD OF BOREHOLE No. 25



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849604 Date Started: May 07/24  
 Reviewed By: RW Easting: 596422 Date Completed: May 07/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL	
0.0 - 0.2 TOPSOIL: 230 mm	SS	1	100	3													
0.2 - 0.8 WEATHERED/DISTURBED: Soft, brown, moist	SS	2	100	17													
0.8 - 2.0 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	56													
	SS	4	100	45													
	SS	5	100	89													
2.0 - 6.1 --- Grey ---	SS	6	100	82													
6.1 - 6.6 SILTY SAND LAYERED WITH SILT: Trace clay, very dense, grey, moist	SS	7	100	86													
Borehole Terminated at 6.6 m																	

Groundwater depth encountered on completion of drilling: Dry  
 Cave depth after auger removal: Open  
 Groundwater depth observed on: \_\_\_\_\_  
 Groundwater Elevation: \_\_\_\_\_

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# RECORD OF BOREHOLE No. 26



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849832 Date Started: May 07/24  
 Reviewed By: RW Easting: 596606 Date Completed: May 07/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL	
0.0 - 0.1 TOPSOIL: 140 mm	SS	1	100	8		260.8	○ 8	○ 10									
0.1 - 0.8 WEATHERED/DISTURBED: Stiff, brown, moist	SS	2	100	19		260.0	○ 19	○ 18									
0.8 - 4.6 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist ---Grey---	SS	3	100	56			○ 56	○ 11									
	SS	4	100	43			○ 43	○ 8									
	SS	5	100	46		258	○ 46	○ 9									
4.6 - 6.1 SAND LAYERED WITH SILT: Dense, grey, wet	SS	6	100	37		256	○ 37	○ 19									First Water Strike SS6
6.1 - 6.6 SAND AND SILT: Compact, grey, wet	SS	7	100	26		254.7	○ 26	○ 19									
Borehole Terminated at 6.6 m																	

Groundwater depth encountered on completion of drilling: 3.0 m. Cave depth after auger removal: 4.9 m.  
 Groundwater depth observed on: May 22/24 at depth of: 1.4 m. Groundwater Elevation: 259.4 m

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# RECORD OF BOREHOLE No. 27



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Hollow Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4850277**      Date Started: **May 09/24**  
 Reviewed By: **RW**      Easting: **596897**      Date Completed: **May 09/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2	TOPSOIL: 230 mm	SS 1	1	100	9	257.8												
0.2 - 2.0	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff to very stiff, brown, moist --- Very stiff to hard ---	SS 2	2	100	25	256	25			18								
		SS 3	3	100	43					15								
		SS 4	4	100	29					15								
	--- Grey ---	SS 5	5	100	29					9								
4.6 - 6.0	SILT: Trace sand, trace to some clay, some clayey silt layers, very dense, grey, moist	SS 6	6	100	63	253.2		63		15								
		SS 7	7	100	73			73		18								
		SS 8	8	100	91			91		17								
		SS 9	9	100	53			53		21								
	--- Compact, wet ---	SS 10	10	100	12	248	12			24								
		SS 11	11	100	15	245.2	15			23								
12.6	Borehole Terminated at 12.6 m																	

Groundwater depth encountered on completion of drilling: 9.1 m      Cave depth after auger removal: 11.9m.  
 Groundwater depth observed on: May 22/24 at depth of: 1.1 m      Groundwater Elevation: 256.7 m

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# RECORD OF BOREHOLE No. 28



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4849278** Date Started: **May 02/24**  
 Reviewed By: **RW** Easting: **596571** Date Completed: **May 02/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL	
0.0 - 0.2 TOPSOIL: 230 mm	SS	1	100	5		263.9	○ 5		○ 25								
0.2 - 0.8 WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	29		263.6	○ 29		○ 11								
0.8 - 2.6 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	44		262	○ 44		○ 12								
	SS	4	100	46			○ 46		○ 11								
	SS	5	100	71			○ 71		○ 11								
						260											
--- Grey ---	SS	6	100	24			○ 24		○ 13								
6.6 - 6.6 Borehole Terminated at 6.6 m	SS	7	100	44		257.3	○ 44		○ 20								First Water Strike SS7



# RECORD OF BOREHOLE No. 29



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4849443** Date Started: **May 03/24**  
 Reviewed By: **RW** Easting: **596859** Date Completed: **May 03/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL	
0.0 - 258.8 TOPSOIL: 205 mm	SS	1	100	8	0	258.8	8	9	15								
0.2 - 258.6 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff, brown, moist --- Very stiff to hard ---	SS	2	100	29		258.6	29	13	13								
	SS	3	100	33			33	14	14								
	SS	4	100	37			37	13	13								
	SS	5	100	30			30	14	14								
--- Grey ---	SS	6	10	19			19	19	19								
6.1 - 252.7 SILT GLACIAL TILL: Some clay, some sand, trace gravel, inferred cobbles and boulders, dense, grey, moist	SS	7	100	31		252.7	31	18	18								
7.6 - 251.2 SILT: Trace sand, trace clay, very dense, grey, moist	SS	8	100	56		251.2	56	18	18								
9.1 - 249.7 SAND: Some silt, trace clay, loose, grey, wet	SS	9	100	9		249.7	9	21	21								
10.7 - 248.2 SILT: Trace clay, trace sand, compact, grey, wet	SS	10	100	28		248.2	28	16	16								
12.2 - 246.6 SAND AND SILT GLACIAL TILL: Trace clay, trace gravel, inferred cobbles and boulders, very dense, grey, wet	SS	11	100	50+		246.6	50+	9	9								
	SS	12	100	66			66	10	10								
15.7 - 243.1 Borehole Terminated at 15.7 m	SS	13	100	89		243.1	89										

Groundwater depth encountered on completion of drilling: Dry      Cave depth after auger removal: Open  
 Groundwater depth observed on: May 22/24 at depth of: ART      Groundwater Elevation: \_\_\_\_\_

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# RECORD OF BOREHOLE No. 30



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849808 Date Started: May 08/24  
 Reviewed By: RW Easting: 596854 Date Completed: May 08/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL	
0.0 - 0.2 TOPSOIL: 205 mm	SS	1	100	7	0	258	7		17								
0.2 - 0.8 WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	33					14								
0.8 - 2.3 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, hard, greyish-brown, moist	SS	3	100	49					7								
2.3 - 3.0 SILT: Some clay, trace sand, very dense, grey, moist	SS	4	100	59					13								
3.0 - 6.1 SAND: Some silt, dense, grey, wet	SS	5	100	40					20								
6.1 - 6.5 CLAYEY SILT GLACIAL TILL: Sandy, inferred cobbles and boulders, hard, grey, moist	SS	6	100	46					17								
6.5 - 6.5 Borehole Terminated at 6.5 m	SS	7	100	92					18								

Groundwater depth encountered on completion of drilling: 1.8 m. Cave depth after auger removal: 4.0 m.  
 Groundwater depth observed on: \_\_\_\_\_ Groundwater Elevation: \_\_\_\_\_

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# RECORD OF BOREHOLE No. 31D



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4850015 Date Started: May 08/24  
 Reviewed By: RW Easting: 597051 Date Completed: May 08/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.8	SS	1	75	4	0	253.2	4											
0.8 - 4.6	SS	2	100	20	0.8	252.4	20		11	32				7	29	50	14	
	SS	3	100	49			49		12					First Water Strike SS3				
	SS	4	100	39			39		13									
	SS	5	100	43			43		9									
4.6 - 5.0	SS	6	100	47	4.6	248.6	47		13					37	50	12	1	
Borehole Terminated at 5.0 m																		



# RECORD OF BOREHOLE No. 31S



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4850017 Date Started: May 08/24  
 Reviewed By: RW Easting: 597051 Date Completed: May 08/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING		INSTRUMENTATION INSTALLATION	COMMENTS & GRAIN SIZE DISTRIBUTION (%)
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Shear Strength Testing (kPa)		
0.0 - 253.2	TOPSOIL: 815 mm	SS 1	75	4		4					
0.8 - 252.4	SANDY SILT GLACIAL TILL: Some clay, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist to wet  --- Grey ---	SS 2	100	20		20		11	32		7 29 50 14
		SS 3	100	49		49		12			First Water Strike SS3
2.7 - 250.5		SS 4	100	39		39		13			
Borehole Terminated at 2.7 m											

# RECORD OF BOREHOLE No. 32



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4849120** Date Started: **May 02/24**  
 Reviewed By: **RW** Easting: **596736** Date Completed: **May 02/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)							
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Penetration Testing		Water Content (%)	Atterberg Limits	GR	SA	SI	CL		
0.0 - 262.1																		
0.3 - 261.9	TOPSOIL: 255 mm	SS	1	100	3													
0.8 - 261.4	WEATHERED/DISTURBED: Soft, brown, moist	SS	2	100	24													
	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	36													
		SS	4	100	40													
		SS	5	100	63													
	--- Greyish-brown ---	SS	6	100	61													
6.1 - 256.0	Borehole Terminated at 6.1 m	SS	7	100	50+													

Groundwater depth encountered on completion of drilling: Dry      Cave depth after auger removal: Open  
 Groundwater depth observed on:      Groundwater Elevation:

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# RECORD OF BOREHOLE No. 33D



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849580 Date Started: May 07/24  
 Reviewed By: RW Easting: 596922 Date Completed: May 07/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.3 TOPSOIL: 280 mm	SS	1	100	5		256	5											
0.3 - 0.8 WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	17		255.7	17											
0.8 - 3.0 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist --- Greyish-brown --- --- Grey ---	SS	3	100	23			23											
	SS	4	100	36		254	36		8									
3.0 - 6.1 SAND LAYERED WITH CLAYEY SILT: Compact/very stiff, grey, wet	SS	5	100	28			28		18									
	SS	6	100	25		252	25		18									
6.1 - 6.6 SILT: Trace sand, dense, grey, wet	SS	7	100	39		250	39		21									
Borehole Terminated at 6.6 m																		

Groundwater depth encountered on completion of drilling: 3.4 m. Cave depth after auger removal: 4.9 m.  
 Groundwater depth observed on: May 22/24 at depth of: ART Groundwater Elevation:

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# RECORD OF BOREHOLE No. 33S



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849580 Date Started: May 07/24  
 Reviewed By: RW Easting: 596922 Date Completed: May 07/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Shear Strength Testing (kPa)		
0.0 - 0.3											
0.3 - 0.8	TOPSOIL: 280 mm	SS	1	100	5	256.2	5		20		
0.8 - 2.7	WEATHERED/DISTURBED: Firm, brown, moist CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist --- Greyish-brown --- --- Grey ---	SS	2	100	17	255.8	17		17		
		SS	3	100	23		23		15		
		SS	4	100	36	253.8	36		8		
Borehole Terminated at 2.7 m											

Groundwater depth encountered on completion of drilling: C  
 Groundwater depth observed on: May 22/24 at depth of: 0.8 m. Groundwater Elevation: 255.7 m

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# RECORD OF BOREHOLE No. 34



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4849878** Date Started: **May 09/24**  
 Reviewed By: **RW** Easting: **597156** Date Completed: **May 09/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL	
0.0 - 0.2 TOPSOIL: 230 mm	SS	1	100	7	0	256.6	○ 7	○ 17									
0.2 - 0.8 WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	24	0.2	256.4	○ 24	○ 15									
0.8 - 2.0 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	26	0.8	255.8	○ 26	○ 15									
	SS	4	100	52	1.5	254.5	○ 52	○ 15									
--- Grey ---	SS	5	100	38	2.0	254.0	○ 38	○ 11									
	SS	6	100	22	3.5	252.5	○ 22	○ 13									
6.1 - 6.3 SAND AND SILT GLACIAL TILL: Some clay, trace gravel, inferred cobbles and boulders, very dense, grey, moist Borehole Terminated at 6.3 m	SS	7	100	97	6.1	250.5	○ 97	○ 8									First Water Strike SS7

Groundwater depth encountered on completion of drilling: 5.8 m. Cave depth after auger removal: Open  
 Groundwater depth observed on: \_\_\_\_\_ Groundwater Elevation: \_\_\_\_\_

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# RECORD OF BOREHOLE No. 35



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848939 Date Started: May 02/24  
 Reviewed By: RW Easting: 596937 Date Completed: May 02/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 260.0																		
0.2 - 259.8	TOPSOIL: 215 mm	SS	1	100	5		5											
0.8 - 259.2	WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	25		25			13	25							
	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	29		29			13								
	---	SS	4	100	43		43			12								
	---	SS	5	100	38		38			11								
4.6 - 255.4	SANDY SILT GLACIAL TILL: Trace to some clay, trace gravel, inferred cobbles and boulders, dense, grey, moist	SS	6	100	38		38			10								
6.6 - 253.4	Borehole Terminated at 6.6 m	SS	7	100	36		36			8								



# RECORD OF BOREHOLE No. 36



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849146 Date Started: May 07/24  
 Reviewed By: RW Easting: 597096 Date Completed: May 07/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)											
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)							SPT "N" Value	Shear Strength Testing (kPa)	Atterberg Limits	Water Content (%)	GR	SA	SI	CL			
0.0 - 0.3 TOPSOIL: 255 mm	SS	1	100	4		254.9															
0.3 - 0.8 WEATHERED/DISTURBED: Firm, brown, moist	SS	2	66	15		254.1															
0.8 - 2.5 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	19																	
	SS	4	100	37																	
--- Grey ---	SS	5	100	28		252															
	SS	6	100	34		250															
	SS	7	100	35		248.3															
Borehole Terminated at 6.6 m																					

Groundwater depth encountered on completion of drilling: 3.0 m. Cave depth after auger removal: Open  
 Groundwater depth observed on: \_\_\_\_\_ Groundwater Elevation: \_\_\_\_\_

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# RECORD OF BOREHOLE No. 37D



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4849783**      Date Started: **May 10/24**  
 Reviewed By: **RW**      Easting: **597353**      Date Completed: **May 10/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 249.8	TOPSOIL: 455 mm	SS	1	75	2	0	2											
0.5 - 249.3	CLAYEY SILT GLACIAL TILL: Some to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist --- Brown to grey ---  --- Grey ---	SS	2	100	24	0.5	24		13	32								
		SS	3	100	24	1	24		11									
		SS	4	100	42	2	42		14									
		SS	5	100	55	3	55		15									
						4			55									
4.6 - 245.2	GRAVELLY SILTY SAND: Trace clay, very dense, grey, wet	SS	6	100	82	4.6	82		10						21	44	29	6
6.2 - 243.5	Borehole Terminated at 6.2 m	SS	7	100	50	6.2	50		17									

Groundwater depth encountered on completion of drilling: 3.7 m.      Cave depth after auger removal: 5.5 m.  
 Groundwater depth observed on: May 23/24 at depth of: -0.6 m.      Groundwater Elevation: 250.4 m

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Scale: 1 :100

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# RECORD OF BOREHOLE No. 37S



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849783 Date Started: May 10/24  
 Reviewed By: RW Easting: 597353 Date Completed: May 10/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING		INSTRUMENTATION INSTALLATION	COMMENTS & GRAIN SIZE DISTRIBUTION (%)
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Shear Strength Testing (kPa)		
0.0	TOPSOIL: 455 mm	SS	1	75	2	249.8					
0.5	CLAYEY SILT GLACIAL TILL: Some to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist --- Brown to grey --- --- Grey ---	SS	2	100	24	249.3	24	13	32		First Water Strike SS2
		SS	3	100	24	248	24	11			
		SS	4	100	42	247.0	42	14			
2.7		Borehole Terminated at 2.7 m									

Groundwater depth encountered on completion of drilling: C  
 Groundwater depth observed on: May 23/24 at depth of: 1.1 m. Groundwater Elevation: 248.7 m

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# RECORD OF BOREHOLE No. 38



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4848334**      Date Started: **May 16/24**  
 Reviewed By: **RW**      Easting: **597339**      Date Completed: **May 16/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL	
0.0 - 0.2 TOPSOIL: 255 mm	SS	1	100	5		258	5		11								
0.2 - 0.8 WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	14		257.9	14		14								
0.8 - 2.0 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff to very stiff, brown, moist	SS	3	100	28		256	28		12								
2.0 - 2.5 --- Hard ---	SS	4	90	26		256	26		12								
2.5 - 3.5 --- Very stiff, grey ---	SS	5	100	37		254	37		11								
3.5 - 6.6 Borehole Terminated at 6.6 m	SS	6	100	21		254	21		12								
	SS	7	100	15		252	15		14								

# RECORD OF BOREHOLE No. 39



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4848538**      Date Started: **May 16/24**  
 Reviewed By: **RW**      Easting: **597514**      Date Completed: **May 16/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)							
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL			
0.0 - 0.3						252.3													
0.3 - 0.8	TOPSOIL: 280 mm WEATHERED/DISTURBED: Firm, brown, moist	SS 1	1	100	4	251.5	4			17									
0.8 - 2.0	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff to very stiff, brown, moist --- Hard ---	SS 2		100	14		14			17									
2.0 - 3.0		SS 3		100	17		17			13									
3.0 - 4.0	--- Greyish-brown ---	SS 4		90	31		31			12									
4.0 - 5.0		SS 5		100	31		31			10									
5.0 - 6.0	--- Very stiff, grey ---	SS 6																	
6.0 - 6.6	Borehole Terminated at 6.6 m	SS 7		100	19		20			12									
						246	19			14									

# RECORD OF BOREHOLE No. 40



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4848769**      Date Started: **May 10/24**  
 Reviewed By: **RW**      Easting: **597724**      Date Completed: **May 10/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)								
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)						SPT "N" Value	GR	SA	SI	CL				
0.0 - 238.8	TOPSOIL: 355 mm	SS	1	100	4	238.8	4	21										
0.4 - 238.4	SANDY SILT: Trace clay, trace gravel, loose, brown, wet	SS	2	100	8	238.4	8	14										
1.5 - 237.3	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, hard, grey, moist	SS	3	100	38	237.3	38	9										
2.0 - 236.5	SAND AND SILT GLACIAL TILL: Some clay, trace gravel, inferred cobbles and boulders, very dense, grey, wet	SS	4	100	66	236.5	66	9										
2.5 - 236.0		SS	5	100	73	236.0	73	8										
4.6 - 234.2	INFERRED WEATHERED SHALE: Grey	SS	6	100	64	234.2	64	9										
6.2 - 232.6	Borehole Terminated at 6.2 m	SS	7	100	50+	232.6	50+	6										

Groundwater depth encountered on completion of drilling: 5.9 m.      Cave depth after auger removal: Open  
 Groundwater depth observed on: May 23/24 at depth of: 1.0 m.      Groundwater Elevation: 237.8 m

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# RECORD OF BOREHOLE No. 41



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848801 Date Started: May 13/24  
 Reviewed By: RW Easting: 597967 Date Completed: May 13/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL	
0.0 TOPSOIL: 140 mm WEATHERED/DISTURBED: Firm, brown, moist 0.8 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	1	100	5		249.8	5		14								
	SS	2	100	23			23		16								
	SS	3	100	30			30		14								
	SS	4	100	32			32		13								
	SS	5	100	39			39		15								
						246											
--- Grey ---	SS	6	100	25			25		14								
	SS	7	100	28			28		12								
	SS	8	100	22			22		15								
	SS	9	100	30			30		14								
9.6 Borehole Terminated at 9.6 m						240.3											

# RECORD OF BOREHOLE No. 42



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848095 Date Started: May 15/24  
 Reviewed By: RW Easting: 597549 Date Completed: May 15/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)							
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Shear Strength Testing (kPa)		Atterberg Limits	Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2 TOPSOIL: 205 mm	SS	1	100	7	0	256	○ 7	○ 13										
0.2 - 0.8 WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	28			○ 28	○ 12										
0.8 - 255.5 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	29			○ 29	○ 12										
	SS	4	90	50		254	○ 50	○ 11										
	SS	5	100	53			○ 53	○ 9										
--- Grey ---	SS	6	100	22		252	○ 22	○ 11										
6.6 - 249.7 Borehole Terminated at 6.6 m	SS	7	100	24		250	○ 24	○ 11										

# RECORD OF BOREHOLE No. 43



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4848337** Date Started: **May 16/24**  
 Reviewed By: **RW** Easting: **597727** Date Completed: **May 16/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2	TOPSOIL: 205 mm	SS 1	1	100	3	253.8												
0.2 - 0.8	WEATHERED/DISTURBED: Soft, brown, moist	SS 2	2	100	18	253.6												
0.8 - 2.0	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS 3	3	100	27	252												
		SS 4	4	90	27													
		SS 5	5	100	42													
	--- Grey ---	SS 6	6	100	21	250												
		SS 7	7	100	22	248												
6.6	Borehole Terminated at 6.6 m					247.3												

Groundwater depth encountered on completion of drilling: Dry      Cave depth after auger removal: Open  
 Groundwater depth observed on: \_\_\_\_\_      Groundwater Elevation: \_\_\_\_\_

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# RECORD OF BOREHOLE No. 44



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848597 Date Started: May 13/24  
 Reviewed By: RW Easting: 598021 Date Completed: May 13/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2	TOPSOIL: 205 mm	SS 1	1	100	5	249.2												
0.2 - 0.8	WEATHERED/DISTURBED: Firm, brown, moist	SS 2	2	100	20	248.6												
0.8 - 9.6	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS 3	3	100	26	248.0												
		SS 4	4	100	33	247.0												
		SS 5	5	100	39	246.0												
	--- Grey ---	SS 6	6	100	17	244.0												
		SS 7	7	100	21	243.0												
		SS 8	8	100	23	242.0												
		SS 9	9	100	35	240.0												
9.6	Borehole Terminated at 9.6 m					239.8												

# RECORD OF BOREHOLE No. 45



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848776 Date Started: May 13/24  
 Reviewed By: RW Easting: 598194 Date Completed: May 13/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)			
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI
0.0 - 0.8 m TOPSOIL: 125 mm WEATHERED/DISTRUBED: Firm, brown, moist CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	1	100	5	248.2	5		17							
	SS	2	100	20	247.5	20		13							
	SS	3	100	22		22		15							
	SS	4	100	25	246	25		14							
	SS	5	100	35		35		12							
--- Grey ---	SS	6	100	31	244	31		14							
	SS	7	100	29	242	29		13				2	27	47	24
--- Wet ---	SS	8	100	17	240	17		20							
9.2 m Borehole Terminated at 9.2 m	SS	9	100	50+	239.0	50+		8							

# RECORD OF BOREHOLE No. 46



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4847940** Date Started: **May 16/24**  
 Reviewed By: **RW** Easting: **597725** Date Completed: **May 16/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)							
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Penetration Testing		Water Content (%)	Atterberg Limits	GR	SA	SI	CL		
0.0 - 0.1	TOPSOIL: 115 mm	SS 1	1	100	7	256.2	○ 7	○ 15										
0.1 - 0.8	WEATHERED/DISTURBED: Firm, brown, moist	SS 2	2	100	27	255.4	○ 27	○ 12										
0.8 - 6.6	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff, brown, moist	SS 3	3	100	29	254	○ 29	○ 10										
		SS 4	4	90	26		○ 26	○ 12										
		SS 5	5	100	30		○ 30	○ 10										
	--- Grey ---	SS 6	6	100	22	252	○ 22	○ 10										
		SS 7	7	100	19	250	○ 19	○ 10										
Borehole Terminated at 6.6 m																		



# RECORD OF BOREHOLE No. 47



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848125 Date Started: May 15/24  
 Reviewed By: RW Easting: 597951 Date Completed: May 15/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)								
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL				
0.0	TOPSOIL: 330 mm					251.1														
0.3	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff to very stiff, brown, moist  --- Hard ---  --- Very stiff to stiff, grey ---	SS	1	100	10															
		SS	2	100	21															
		SS	3	100	28															
		SS	4	90	41															
		SS	5	100	21															
		SS	6	100	14															
		SS	7	100	17															
6.6	Borehole Terminated at 6.6 m																			

Groundwater depth encountered on completion of drilling: Dry      Cave depth after auger removal: Open  
 Groundwater depth observed on: May 23/24 at depth of: 1.2 m.      Groundwater Elevation: 249.9 m

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# RECORD OF BOREHOLE No. 48



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848354 Date Started: May 14/24  
 Reviewed By: RW Easting: 598146 Date Completed: May 14/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2	TOPSOIL: 255 mm	SS 1	1	100	8	247.9												
0.2 - 0.8	WEATHERED/DISTURBED: Firm, brown, moist	SS 2	2	100	22	247.2												
0.8 - 2.0	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS 3	3	100	22	246												
2.0 - 3.0		SS 4	4	90	38													
3.0 - 4.0		SS 5	5	100	39													
4.0 - 6.0	--- Grey ---	SS 6	6	100	22	244												
6.0 - 6.6	Borehole Terminated at 6.6 m	SS 7	7	100	21	242												

# RECORD OF BOREHOLE No. 49



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4848570** Date Started: **May 14/24**  
 Reviewed By: **RW** Easting: **598332** Date Completed: **May 14/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL	
0.0 - 0.2 TOPSOIL: 180 mm	SS	1	100	13		246	○ 13		○ 18								
FILL: Clayey silt, some sand, trace gravel, trace rootlets, trace organics, stiff, brown to dark brown with black, moist	SS	2	100	9			○ 9		○ 18								
--- Soft, mottled grey ---	SS	3	100	8			○ 8		○ 22								
--- Stiff, blackish-brown ---	SS	4	90	3		244	○ 3		○ 20								
	SS	5	100	8			○ 8		○ 29								
4.6 - 4.6 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff, mottled brown, moist	SS	6	100	11		242	○ 11		○ 20								First Water Strike SS6
--- Hard, grey ---																	
6.6 - 6.6 Borehole Terminated at 6.6 m	SS	7	100	32		240	○ 32		○ 15								

Groundwater depth encountered on completion of drilling: 4.0 m. Cave depth after auger removal: Open  
 Groundwater depth observed on: May 23/24 at depth of: 2.5 m. Groundwater Elevation: 243.9 m

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# RECORD OF BOREHOLE No. 50



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4848676**      Date Started: **May 14/24**  
 Reviewed By: **RW**      Easting: **598535**      Date Completed: **May 14/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2 TOPSOIL: 190 mm	SS	1	100	3														
0.2 - 0.8 WEATHERED/DISTURBED: Soft, brown, moist	SS	2	100	19														
0.8 - 244.3 CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS	3	100	36														
	SS	4	100	37														
	SS	5	100	36														
	SS	6	100	38														
--- Grey ---	SS	7	100	20														
8.1 - 237.0 SANDY SILT GLACIAL TILL: Trace clay, trace gravel, inferred cobbles and boulders, very dense, greyish-brown, moist	SS	8	100	44														
9.2 - 235.9 Borehole Terminated at 9.2 m	SS	9	100	50+														

# RECORD OF BOREHOLE No. 51



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4847932 Date Started: May 15/24  
 Reviewed By: RW Easting: 598174 Date Completed: May 15/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)								
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Shear Strength Testing (kPa)		Atterberg Limits	Water Content (%)	GR	SA	SI	CL			
0.0 - 0.3	TOPSOIL: 305 mm					249.0													
0.3 - 248.7	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, firm, brown, moist --- Very stiff to hard ---	SS	1	100	6														
		SS	2	100	17	248													
		SS	3	100	33														
		SS	4	90	38														
	--- Grey ---	SS	5	100	31	246													
		SS	6	100	27	244													
6.1 - 242.9	SANDY SILT GLACIAL TILL: Some clay, trace gravel, inferred cobbles and boulders, very dense, brown, moist	SS	7	100	97														
6.5	Borehole Terminated at 6.5 m					242.5													

Groundwater depth encountered on completion of drilling: Dry      Cave depth after auger removal: Open  
 Groundwater depth observed on: \_\_\_\_\_      Groundwater Elevation: \_\_\_\_\_

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# RECORD OF BOREHOLE No. 52D



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers**      Drilling Machine: **Track Mount**  
 Logged By: **AG**      Northing: **4848186**      Date Started: **May 14/24**  
 Reviewed By: **RW**      Easting: **598432**      Date Completed: **May 14/24**

LITHOLOGY PROFILE		SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
DESCRIPTION		Sample Type	Sample Number	Recovery (%)	SPT "N" Value			Shear Strength Testing (kPa)		Atterberg Limits			Water Content (%)					
TOPSOIL: 610 mm		SS	1	100	1	0	243.6											
WEATHERED/DISTURBED: Firm, brown, moist		SS	2	100	8	0.6	243.0											
CLAYEY SILT GLACIAL TILL: Some sand, to sandy, inferred cobbles and boulders, very stiff to hard, greyish-brown, moist		SS	3	100	18	0.8	242.8											
		SS	4	90	32													
		SS	5	100	53													
--- Grey ---		SS	6	100	19													
		SS	7	100	19	6.6	237.0											
Borehole Terminated at 6.6 m																		

Groundwater depth encountered on completion of drilling: 5.5 m.      Cave depth after auger removal: Open  
 Groundwater depth observed on: May 23/24 at depth of: 1.0 m.      Groundwater Elevation: 242.6 m

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# RECORD OF BOREHOLE No. 52S



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Hollow Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848185 Date Started: May 14/24  
 Reviewed By: RW Easting: 598433 Date Completed: May 14/24

LITHOLOGY PROFILE		SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)					
DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT "N" Value	Shear Strength Testing (kPa)			Penetration Testing	Atterberg Limits	Water Content (%)	GR		SA	SI	CL			
0.0 - 0.6 TOPSOIL: 610 mm	SS	1	100	1														
0.6 - 0.8 WEATHERED/DISTURBED: Firm, brown, moist	SS	2	100	8														
0.8 - 2.7 CLAYEY SILT GLACIAL TILL: Some sand, to sandy, inferred cobbles and boulders, very stiff to hard, greyish-brown, moist	SS	3	100	18														
2.7 Borehole Terminated at 2.7 m	SS	4	90	32														

# RECORD OF BOREHOLE No. 53



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848381 Date Started: May 15/24  
 Reviewed By: RW Easting: 598548 Date Completed: May 15/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 246.2																		
0.2 - 246.0	TOPSOIL: 255 mm	SS	1	75	6	0	246											
0.2 - 245.5	WEATHERED/DISTURBED: Trace organics, trace rootlets, firm, brown, moist	SS	2	100	9			6		17								
	CLAYEY SILT GLACIAL TILL: Some sand to sandy, inferred cobbles and boulders, stiff to very stiff, brown, moist	SS	3	100	24			9		25								
		SS	4	90	25			24		13								
		SS	5	100	29			25		13								
								29		12								
	--- Hard, greyish-brown ---	SS	6	100	44			44		11								
	--- Grey ---																	
6.6 - 239.7	Borehole Terminated at 6.6 m	SS	7	100	20			20		11								

# RECORD OF BOREHOLE No. 54



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4848441 Date Started: May 14/24  
 Reviewed By: RW Easting: 598750 Date Completed: May 14/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 244.7																		
0.3 - 244.4	TOPSOIL: 345 mm	SS 1	1	100	3	0	3											
0.8 - 243.9	WEATHERED/DISTURBED: Soft, brown, moist	SS 2	2	100	14	0.3	14											
	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff to very stiff, brown, moist	SS 3	3	100	15	0.8	15											
		SS 4	4	90	27	1.5	27											
		SS 5	5	100	28	2.0	28											
	--- Hard ---	SS 6	6	100	46	4.5	46											
	--- Very stiff, grey ---	SS 7	7	100	23	6.0	23											
	Borehole Terminated at 6.6 m					6.6												



# RECORD OF BOREHOLE No. 55



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4847630 Date Started: May 15/24  
 Reviewed By: RW Easting: 598244 Date Completed: May 15/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)							
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL			
0.0 - 0.2	TOPSOIL: 230 mm	SS 1	1	100	6	251.5	6												
0.2 - 0.8	WEATHERED/DISTURBED: Firm, brown, moist	SS 2	2	100	21	250.7	21												
0.8 - 2.0	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS 3	3	100	32	248	32												
2.0 - 2.4		SS 4	4	90	34	248	34												
2.4 - 2.8		SS 5	5	100	50+	248	50+												
2.8 - 4.0	--- Grey ---					246													
4.0 - 6.6		SS 6	6	100	29	246	29												
6.6 - 6.6	Borehole Terminated at 6.6 m	SS 7	7	100	22	244.9	22												

# RECORD OF BOREHOLE No. 56-D



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4847229 Date Started: May 16/24  
 Reviewed By: RW Easting: 597184 Date Completed: May 16/24

LITHOLOGY PROFILE		SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT "N" Value	Shear Strength Testing (kPa)			Penetration Testing	Atterberg Limits	Water Content (%)	GR		SA	SI	CL				
0.0 - 251.5	TOPSOIL: 610 mm	SS 1	100	4		4													
0.6 - 250.9	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff to very stiff, greyish-brown, moist  --- Grey ---  --- Some clay ---	SS 2	100	4		4													
		SS 3	100	26		26													
		SS 4	90	15		15													
		SS 5	100	11		11													
		SS 6	100	14		14													
6.6 - 244.9	Borehole Terminated at 6.6 m	SS 7	100	10		10													

# RECORD OF BOREHOLE No. 56-S



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4847229 Date Started: May 16/24  
 Reviewed By: RW Easting: 597183 Date Completed: May 16/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)										
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)							SPT "N" Value	Shear Strength Testing (kPa)	Atterberg Limits	Water Content (%)	GR	SA	SI	CL		
0.0	TOPSOIL: 610 mm	SS	1	100	4	251.5														
0.6	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, stiff to very stiff, greyish-brown, moist	SS	2	100	4	250.9														
		SS	3	100	26															
		SS	4	90	15															
2.7		Borehole Terminated at 2.7 m					248.7													

Groundwater depth encountered on completion of drilling: Dry Cave depth after auger removal: Open  
 Groundwater depth observed on: May 23/24 at depth of: 1.9 m. Groundwater Elevation: 249.6 m

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# RECORD OF BOREHOLE No. 101



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Hollow Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4849202** Date Started: **Apr 30/24**  
 Reviewed By: **RW** Easting: **596234** Date Completed: **Apr 30/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.2	TOPSOIL: 150 mm	SS	1	80	1	267.1												
0.2 - 1.2	WEATHERED/DISTURBED: Trace organics, very loose to loose, brown to dark brown, moist	SS	2	100	5	266.9												
1.2 - 4.6	SAND AND SILT: Trace clay, dense to very dense, brown, moist	SS	3	100	41													
		SS	4	100	43													
		SS	5	100	69													
4.6 - 10.7	SAND: Trace to some silt, very dense, brown, moist	SS	6	85	66	262.5												
		SS	7	100	57													
		SS	8	100	92													
	--- Some gravel ---	SS	9	10	50+													
10.7 - 15.2	SANDY GRAVEL: Trace silt, very dense, brown, wet	SS	10	35	79	256.4												
		SS	11	90	53													
	--- Gravel and sand ---	SS	12	100	49													
15.2 - 16.8	GRAVELLY SAND: Trace silt, very dense, brown, wet	SS	13	90	51	251.9												

Groundwater depth encountered on completion of drilling: 12.2 m. Cave depth after auger removal: 11.0m.  
 Groundwater depth observed on: May 22/24 at depth of: 10.6 m. Groundwater Elevation: 256.5 m

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# RECORD OF BOREHOLE No. 101



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Hollow Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849202 Date Started: Apr 30/24  
 Reviewed By: RW Easting: 596234 Date Completed: Apr 30/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING				Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)				SPT "N" Value	Shear Strength Testing (kPa)	Atterberg Limits			
SAND AND SILT: Trace gravel, dense, grey, wet  --- Trace to some gravel, compact ---  SAND: Some silt, compact, grey, wet Borehole Terminated at 20.3 m	SS	14	100	40	250	40	15					GR   SA   SI   CL	
	SS	15	55	18	18	18	12						
	SS	16	55	15	20	15	17						

# RECORD OF BOREHOLE No. 102



Project Number: **2400278**  
 Project Client: **Mayfield Tullamore Landowner Group Inc.**  
 Project Name: **Mayfield Tullamore LOG**  
 Project Location: **Caledon, ON**  
 Drilling Location: **See Borehole Location Plan**  
 Local Benchmark: \_\_\_\_\_

Drilling Method: **Solid Stem Augers** Drilling Machine: **Track Mount**  
 Logged By: **AG** Northing: **4849282** Date Started: **May 01/24**  
 Reviewed By: **RW** Easting: **596343** Date Completed: **May 01/24**

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)						
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)			SPT "N" Value	Shear Strength Testing (kPa)	Penetration Testing	Atterberg Limits		Water Content (%)	GR	SA	SI	CL		
0.0 - 0.8	TOPSOIL: 100 mm WEATHERED/DISTURBED: Firm, brown, moist	SS 1	1	100	4	265.4	4	22										
0.8 - 2.64	CLAYEY SILT GLACIAL TILL: Some sand to sandy, trace gravel, inferred cobbles and boulders, very stiff to hard, brown, moist	SS 2	2	100	26	264.6	26	14										
		SS 3	3	100	35		35	13										
		SS 4	4	100	38		38	11										
		SS 5	5	100	41		41	12										
4.6 - 260.8	SANDY SILT TO SILTY SAND: Trace clay, very dense, brown, moist	SS 6	6	100	69	260.8	69	15										
	--- Trace gravel ---	SS 7	7	100	65		65	14										
	--- Wet ---	SS 8	8	100	40		40	23										
9.1 - 256.2	SILT: Trace sand, trace clay, compact, grey, wet	SS 9	9	100	18	256.2	18	24										
	--- Some sand, dense ---	SS 10	10	100	48		48	20										
	--- Layered with clay ---	SS 11	11	100	49		49	17										
13.7 - 251.7	SAND AND SILT GLACIAL TILL: Trace clay, trace gravel, inferred cobbles and boulders, very dense, grey, wet	SS 12	12	100	61	251.7	61	9										
	--- Dense ---	SS 13	13	100	30		30	12										

Groundwater depth encountered on completion of drilling: 8.2 m. Cave depth after auger removal: 10.7m.  
 Groundwater depth observed on: May 22/24 at depth of: 6.1 m. Groundwater Elevation: 259.3 m

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 www.geiconsultants.com

Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.

Scale: 1 :100  
 Page: 1 of 2



# RECORD OF BOREHOLE No. 102



Project Number: 2400278  
 Project Client: Mayfield Tullamore Landowner Group Inc.  
 Project Name: Mayfield Tullamore LOG  
 Project Location: Caledon, ON  
 Drilling Location: See Borehole Location Plan  
 Local Benchmark: \_\_\_\_\_

Drilling Method: Solid Stem Augers Drilling Machine: Track Mount  
 Logged By: AG Northing: 4849282 Date Started: May 01/24  
 Reviewed By: RW Easting: 596343 Date Completed: May 01/24

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	Instrumentation Installation	COMMENTS & GRAIN SIZE DISTRIBUTION (%)			
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)						SPT "N" Value	GR	SA	SI
	SILT AND SAND Cont	SS	14	100	39	248	Shear Strength Testing (kPa) × Other Test + Pocket Penetrometer ▲ Field Vane (Intact) △ Field Vane (Remolded) 40 80 120 160 Penetration Testing ○ SPT ● DCPT 10 20 30 40	△ Combustible Organic Vapour (ppm) ▲ Combustible Organic Vapour (%LEL) ◇ Total Organic Vapour (ppm) 100 200 300 400 Atterberg Limits PL Water Content (%) LL 10 20 30 40					
	SILT: Trace clay, trace sand, very dense, grey, wet	SS	15	100	72	18	72	19		0	2	93	5
	--- Some sand, compact ---	SS	16	100	21	20	21	19					
Borehole Terminated at 20.3 m													

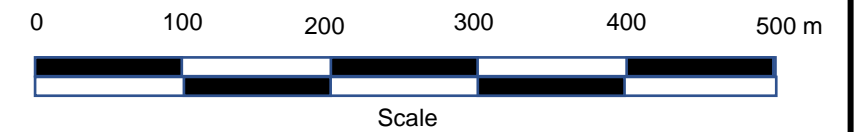
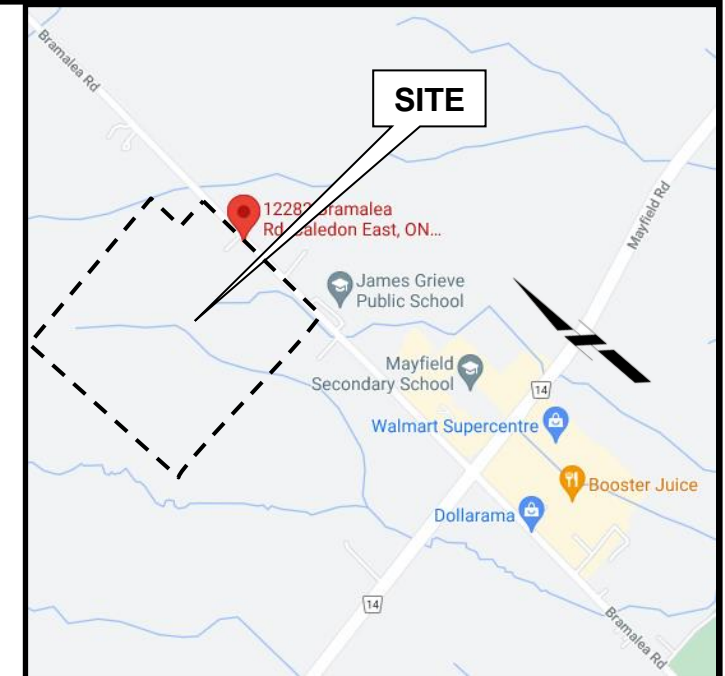
**GEI CONSULTANTS**  
 647 Welham Road, Unit 14  
 Barrie, Ontario L4N 0B8  
 T : (705) 719-7994  
 www.geiconsultants.com

Groundwater depth encountered on completion of drilling: 8.2 m. Cave depth after auger removal: 10.7m.  
 Groundwater depth observed on: May 22/24 at depth of: 6.1 m. Groundwater Elevation: 259.29 m

Borehole details presented do not constitute a thorough understanding of all potential conditions present and require interpretative assistance from a qualified geotechnical engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Explanation of Boring Log'.

Scale: **1 :100**  
 Page: **2 of 2**

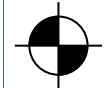


## **Appendix E4 – Borehole Logs (EXP 2021 & 2023, GEMTEC 2023)**



**Note:**

1. The boundaries and soil types have been established only at the borehole locations. Between boreholes the boundaries are assumed and may be subject to considerable error.
2. Soil samples will be retained in storage for 3 months and then destroyed unless the client advises otherwise.
3. Topsoil quantities and/or volumes of unsuitable fill should not be established from the information provided at the borehole locations.
4. Borehole elevations should not be used to design building(s), or floor slab(s), or parking lot(s) grades.
5. This drawing to be read with subject report, project number as shown below.
6. Boreholes located and elevated using portable GPS equipment.
7. Test hole locations are approximate.
8. Dimensions shown on this drawing are in metric units, unless otherwise noted.

**Legend:**

-  Borehole Location
-  Monitoring Well Location
-  Existing Property Boundary



EXP Services Inc.  
1595 Clark Blvd.  
Brampton, ON L6T 4V1  
www.exp.com

DRAWN: hal  
CHECKED: JKF  
P.M.: DHD

SCALE  
As noted

**Borehole Location Plan**  
Preliminary Geotechnical Investigation  
12282 Bramalea Road  
Caledon, Ontario

Reference: BRM 21004350-B0

Drawing: 1



## Notes on Sample Descriptions and Soil Types

## Drawing 1A

- All sample descriptions included in this report follow the Canadian Foundations Engineering Manual soil classification system. This system follows the standard proposed by the International Society for Soil Mechanics and Foundation Engineering. Laboratory grain size analyses provided by EXP also follow the same system. Others may use different classification systems; one such system is the Unified Soil Classification. Please note that, with the exception of those samples where a grain size analysis has been made, all samples are classified visually. Visual classification is not sufficiently accurate to provide exact grain sizing or precise differentiation between size classification systems.

### ISSMFE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE		
	0.002	0.006	0.02	0.06	0.2	0.6	2.0	6.0	20	60	200

EQUIVALENT GRAIN DIAMETER IN MILLIMETERS

CLAY (PLASTIC) TO SILT (NONPLASTIC)	SAND			GRAVEL	
	FINE	MEDIUM	COARSE	FINE	COARSE

### UNIFIED SOIL CLASSIFICATION

- Fill:** Where fill is designated on the borehole log it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description may therefore not be applicable as a general description of site fill materials. All fills should be expected to contain obstruction such as wood, large concrete pieces or subsurface basements, floors, tanks, etc., none of these may have been encountered in the boreholes. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. Fill at this site may have been monitored for the presence of methane gas and, if so, the results are given on the borehole logs. The monitoring process does not indicate the volume of gas that can be potentially generated nor does it pinpoint the source of the gas. These readings are to advise of the presence of gas only, and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic/hazardous waste that renders it unacceptable for deposition in any but designated land fill sites; unless specifically stated the fill on this site has not been tested for contaminants that may be considered toxic or hazardous. This testing and a potential hazard study can be undertaken if requested. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common and are generally not detected in a conventional geotechnical site investigation.
- Till:** The term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process the till must be considered heterogeneous in composition and as such may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (60 to 200 mm) or boulders (over 200 mm). Contractors may therefore encounter cobbles and boulders during excavation, even if they are not indicated by the borings. It should be appreciated that normal sampling equipment cannot differentiate the size or type of any obstruction. Because of the horizontal and vertical variability of

till, the sample description may be applicable to a very limited zone; caution is therefore essential when dealing with sensitive excavations or dewatering programs in till materials.

4. Excerpt from "OHSA Regulations for Construction Projects," Part III, Section 226:

- **Soil Types**

Type 1 Soil

- a) is hard, very dense and only able to be penetrated with difficulty by a small sharp object;
- b) has a low natural moisture content and a high degree of internal strength;
- c) has no signs of water seepage; and
- d) can be excavated only by mechanical equipment.

Type 2 Soil

- a) is very stiff, dense and can be penetrated with moderate difficulty by a small sharp object;
- b) has a low to medium natural moisture content and a medium degree of internal strength; and
- c) has a damp appearance after it is excavated.

Type 3 Soil

- a) is stiff to firm and compact to loose in consistency or is previously excavated soil;
- b) exhibits signs of surface cracking;
- c) exhibits signs of water seepage;
- d) if it is dry, may run easily into a well-defined conical pile; and
- e) has a low degree of internal strength.

Type 4 Soil

- a) is soft to very soft and very loose in consistency, very sensitive and upon disturbance is significantly reduced in natural strength;
- b) runs easily or flows, unless it is completely supported before excavating procedures;
- c) has almost no internal strength;
- d) is wet or muddy; and
- e) exerts substantial fluid pressure on its supporting system. O. Reg. 213/91, s. 226.

# Log of Borehole 1

Project No. BRM-21004350-B0

Drawing No. 2

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 29, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

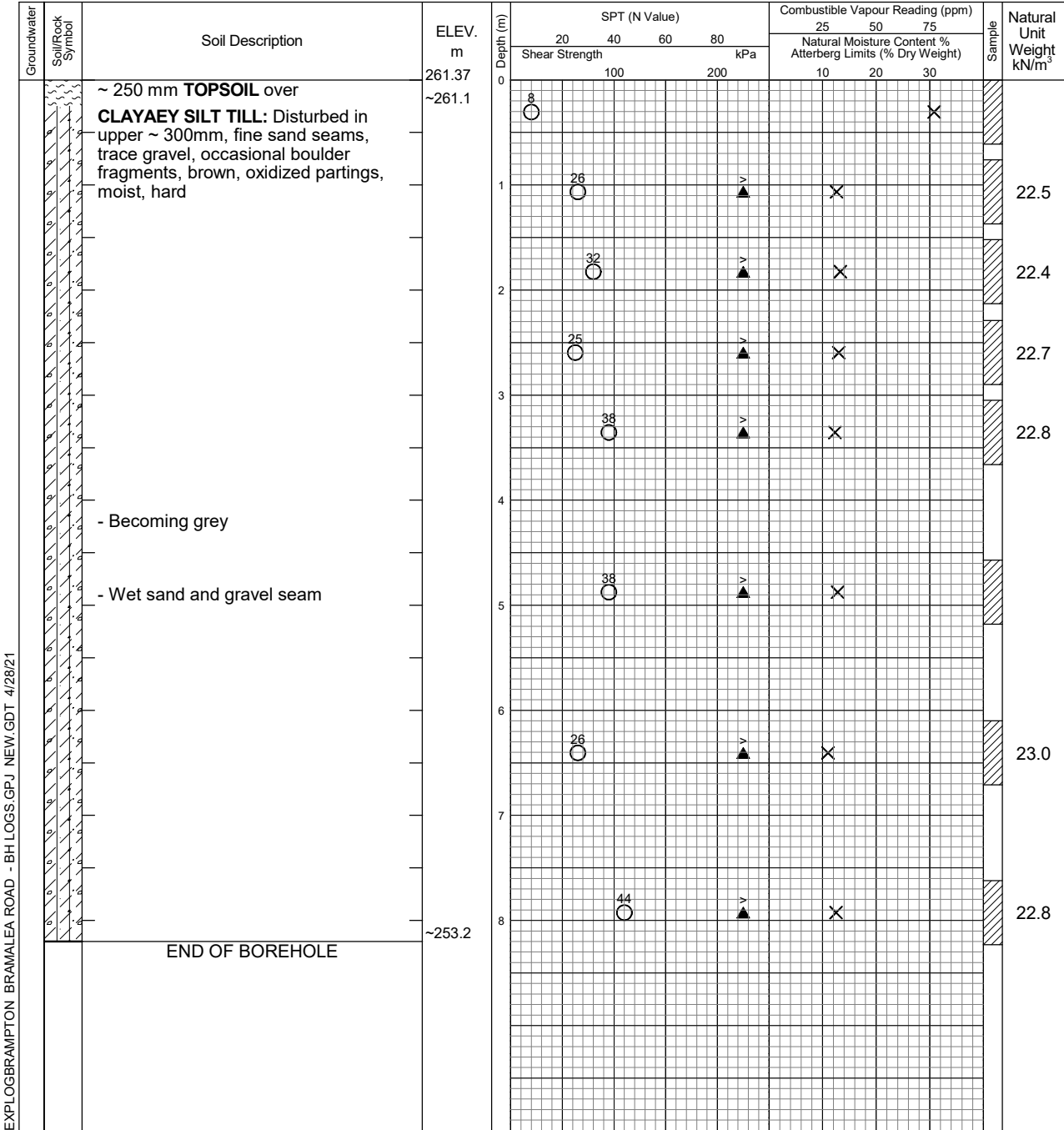
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	3.81	Open





# Log of Borehole 2

Project No. BRM-21004350-B0

Drawing No. 3

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 29, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test \_\_\_\_\_

Plastic and Liquid Limit

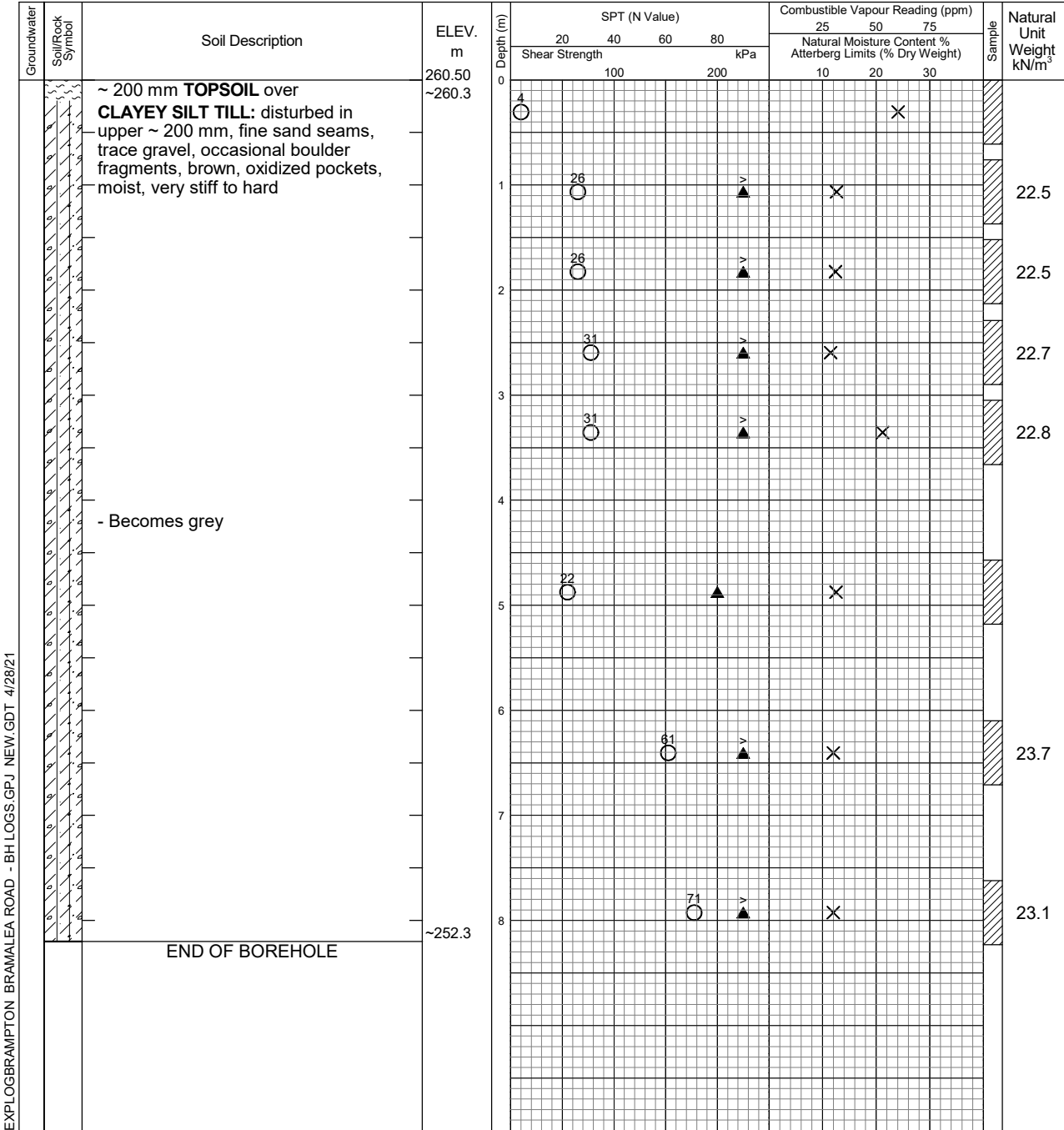
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	3.66	Open



# Log of Borehole 3

Project No. BRM-21004350-B0

Drawing No. 4

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 25, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

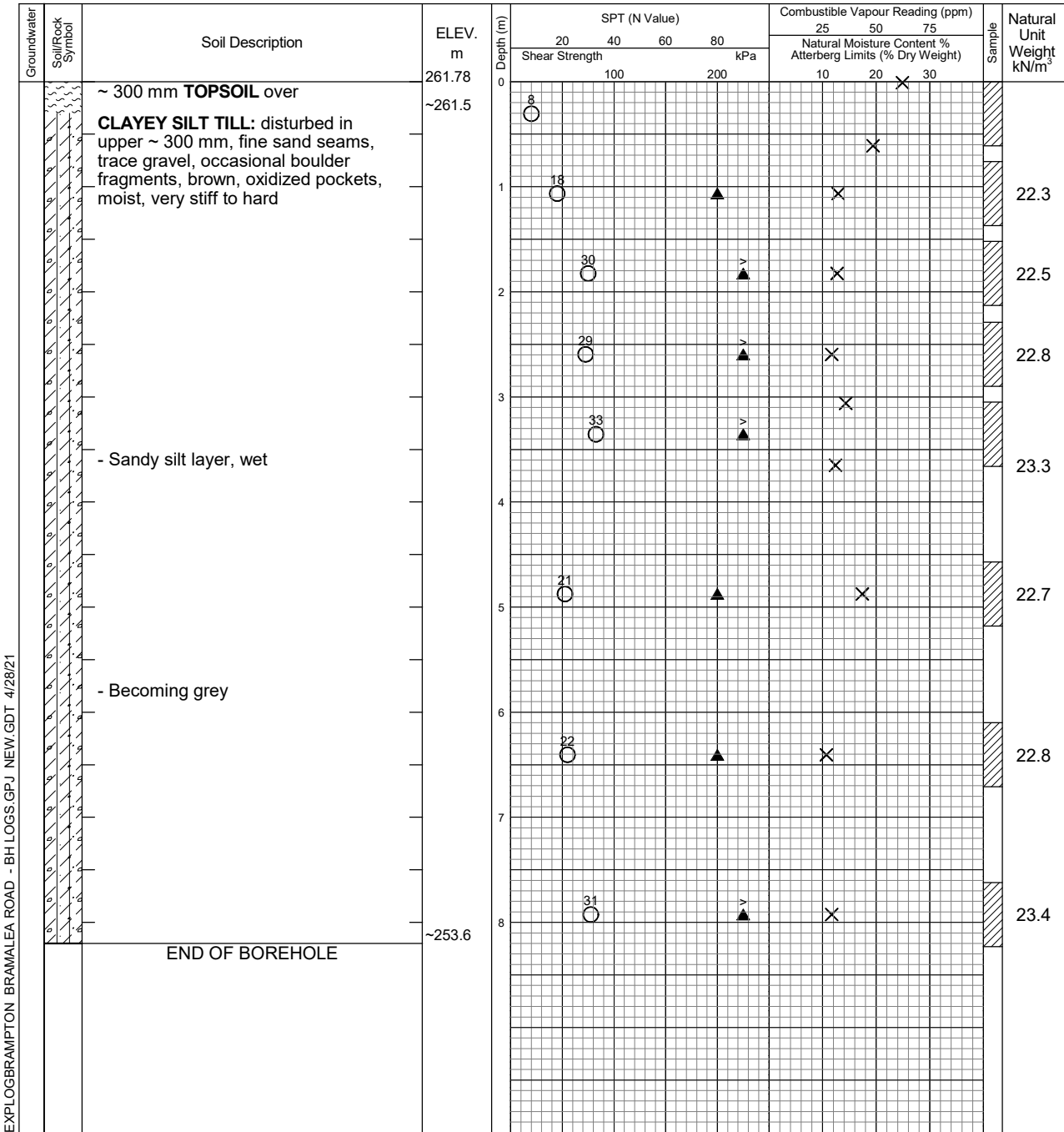
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	7.54	7.62



# Log of Borehole 4

Project No. BRM-21004350-B0


Drawing No. 5

Project: Geotechnical Investigation


Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 29, 2021

Auger Sample 


Combustible Vapour Reading

SPT (N) Value 

Natural Moisture 


Drill Type: \_\_\_\_\_

Dynamic Cone Test 

Plastic and Liquid Limit 

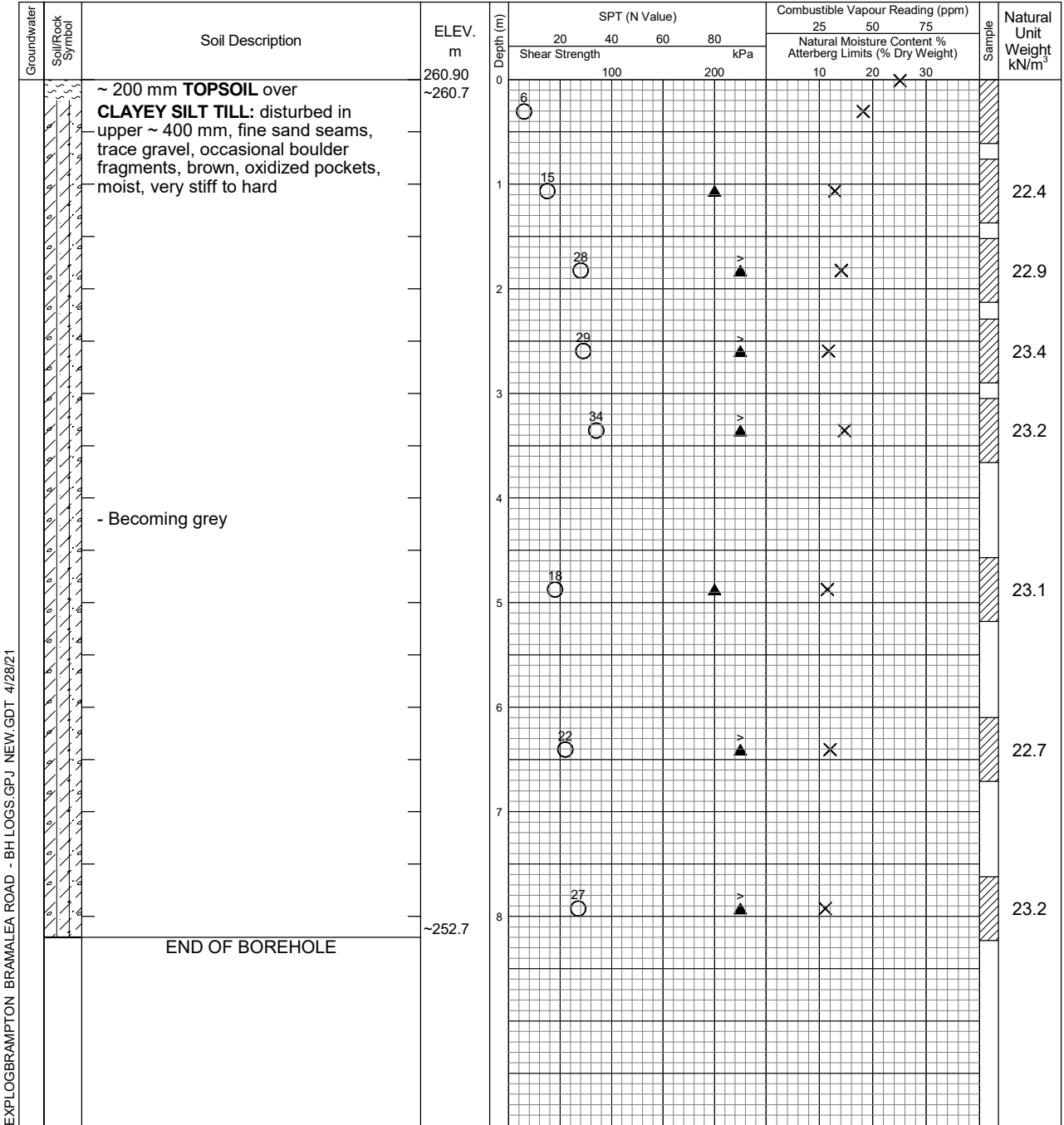
Datum: Geodetic

Shelby Tube 

Undrained Triaxial at % Strain at Failure 

Field Vane Test 

Penetrometer 



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62





# Log of Borehole 5

Project No. BRM-21004350-B0

Drawing No. 6

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 23, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

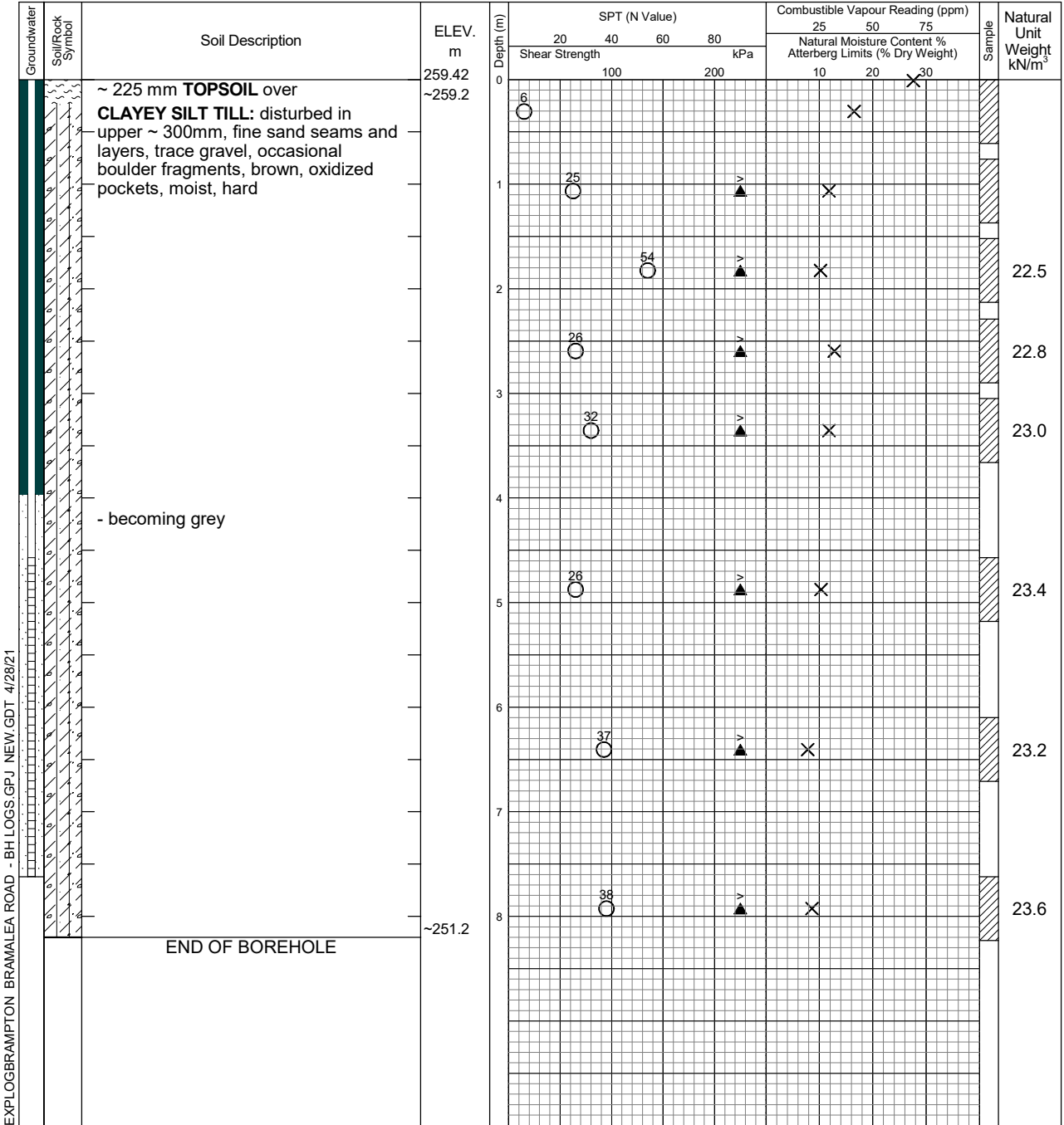
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion April 9, 2021	Dry 5.35	7.62



# Log of Borehole 6

Project No. BRM-21004350-B0

Drawing No. 7

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 29, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test \_\_\_\_\_

Plastic and Liquid Limit

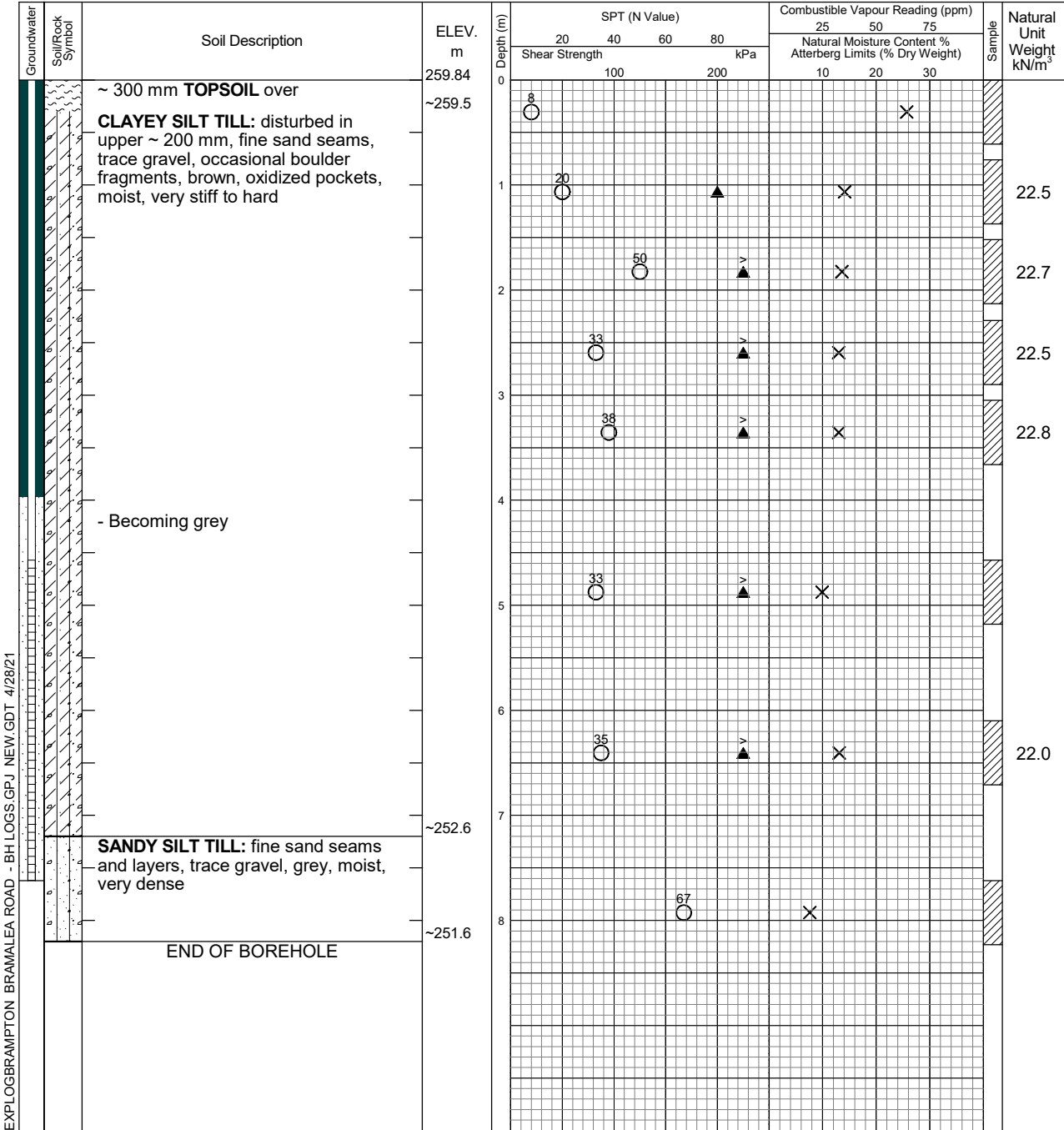
Datum: Geodetic

Shelby Tube \_\_\_\_\_

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion April 9, 2021	Dry 5.33	Open



# Log of Borehole 7

Project No. BRM-21004350-B0

Drawing No. 8

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 26, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

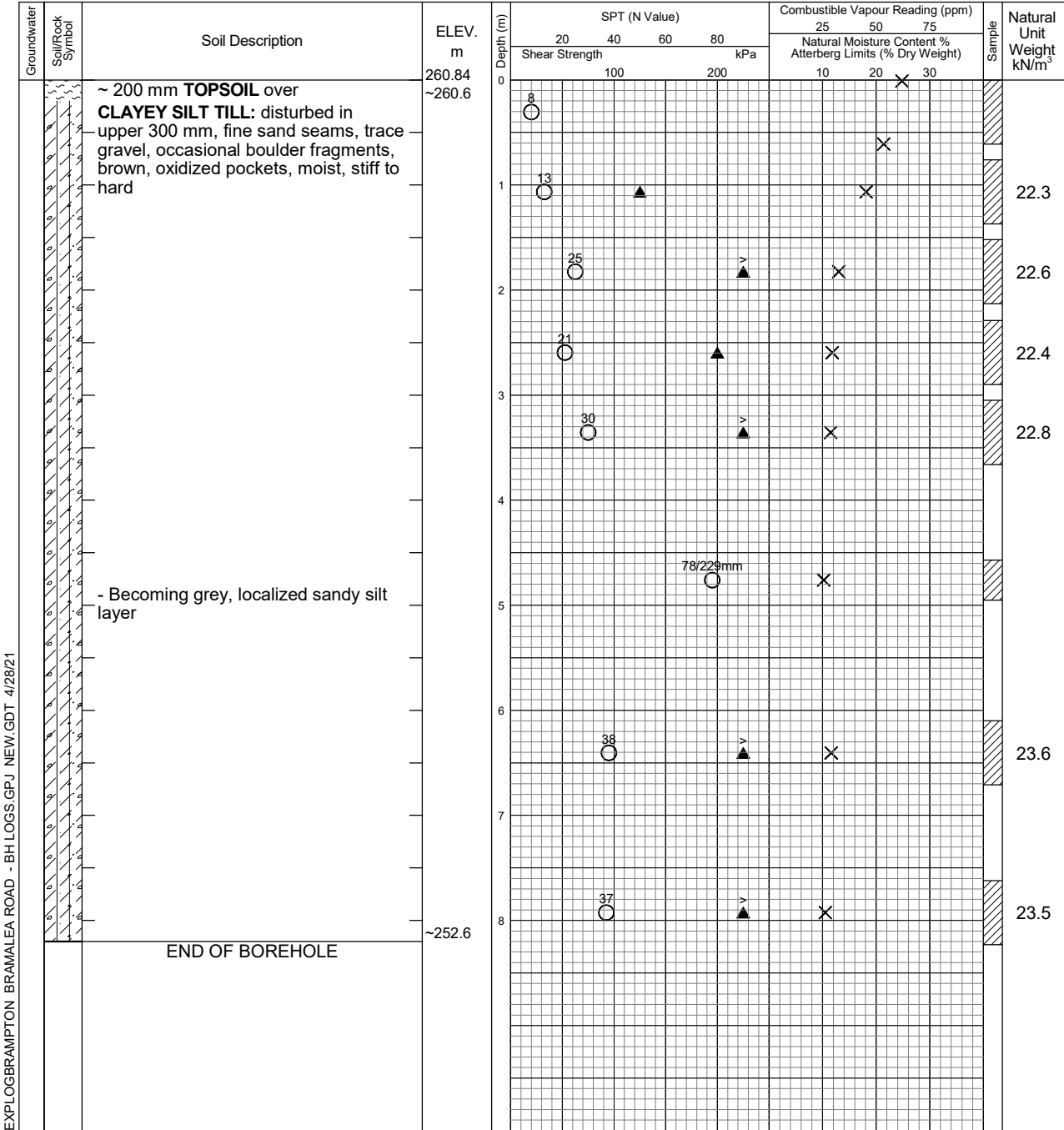
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	7.62	7.62





# Log of Borehole 8

Project No. BRM-21004350-B0

Drawing No. 9

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 25, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

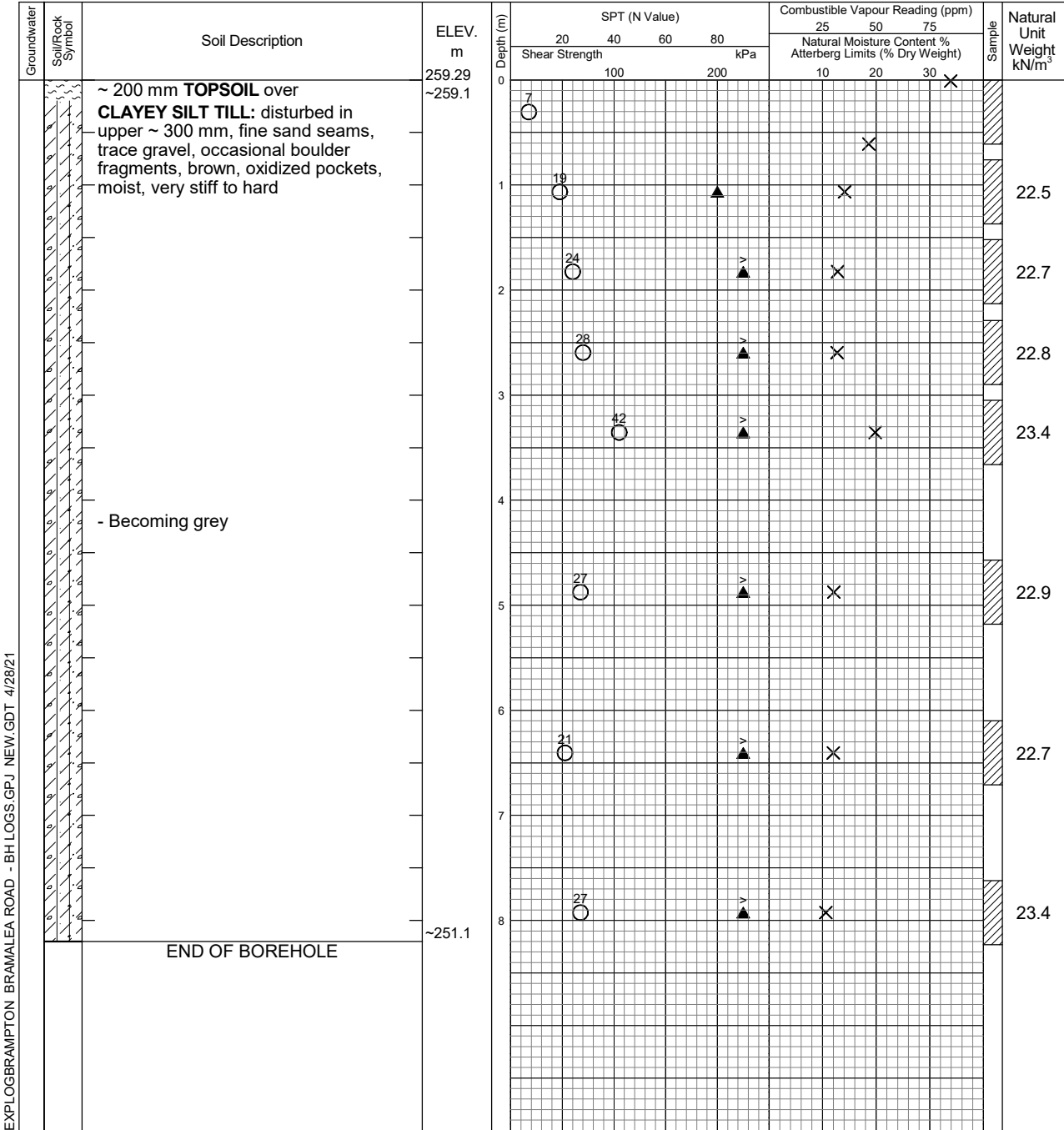
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	7.54	7.62



# Log of Borehole 9

Project No. BRM-21004350-B0

Drawing No. 10

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 24, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

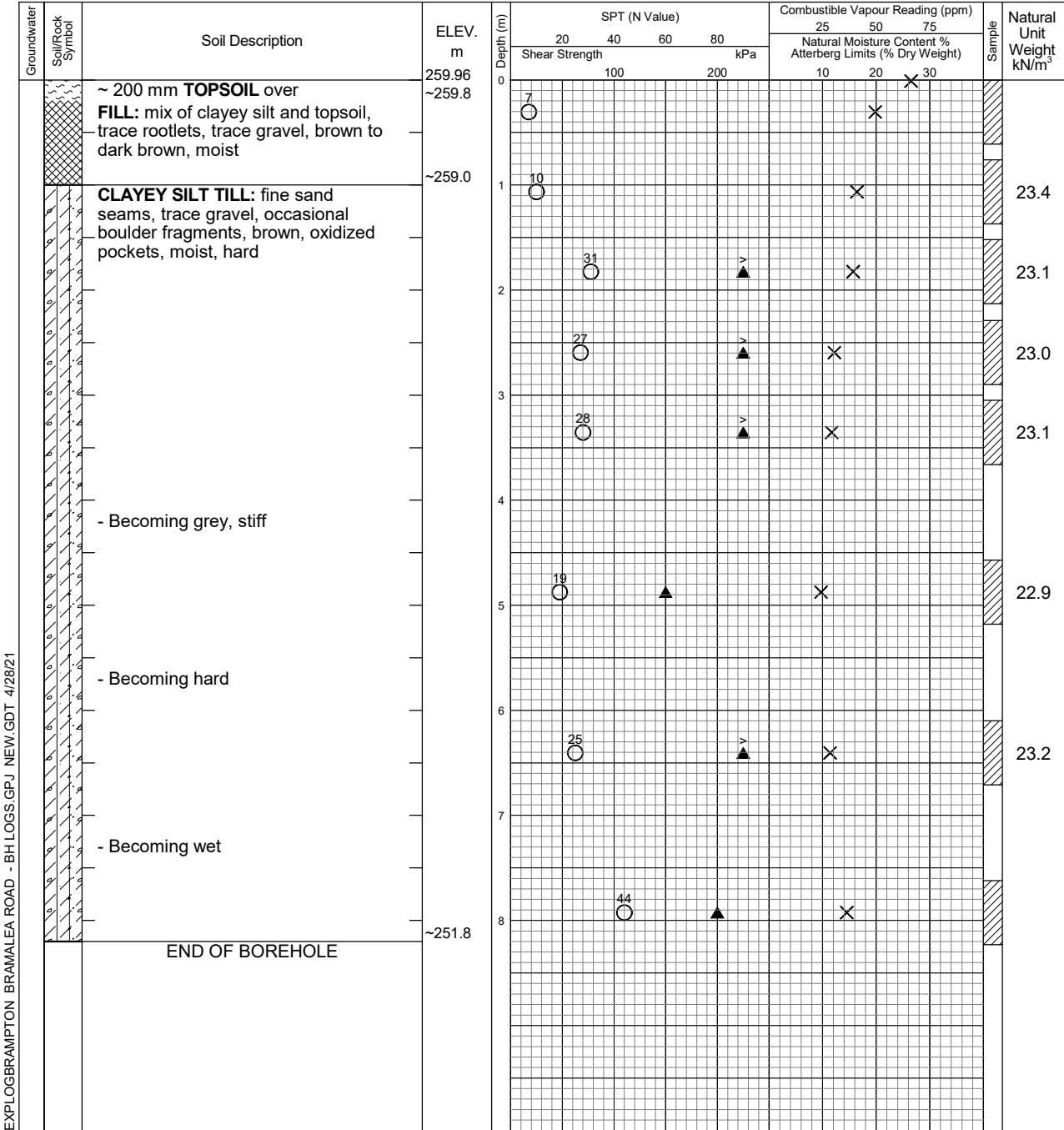
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	7.47	7.62



# Log of Borehole 10

Project No. BRM-21004350-B0

Drawing No. 11

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 23, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

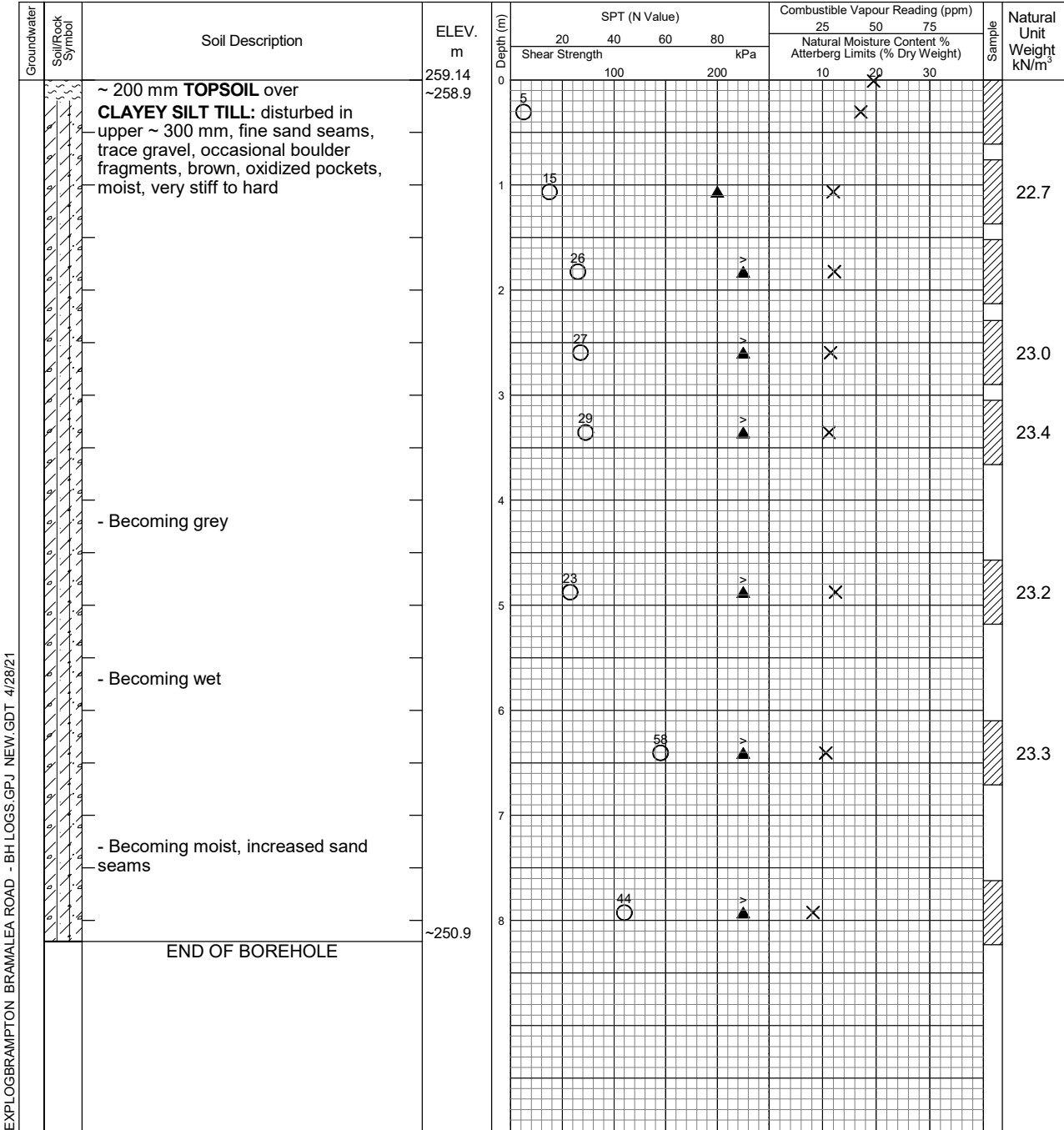
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62





# Log of Borehole 11

Project No. BRM-21004350-B0

Drawing No. 12

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 23, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

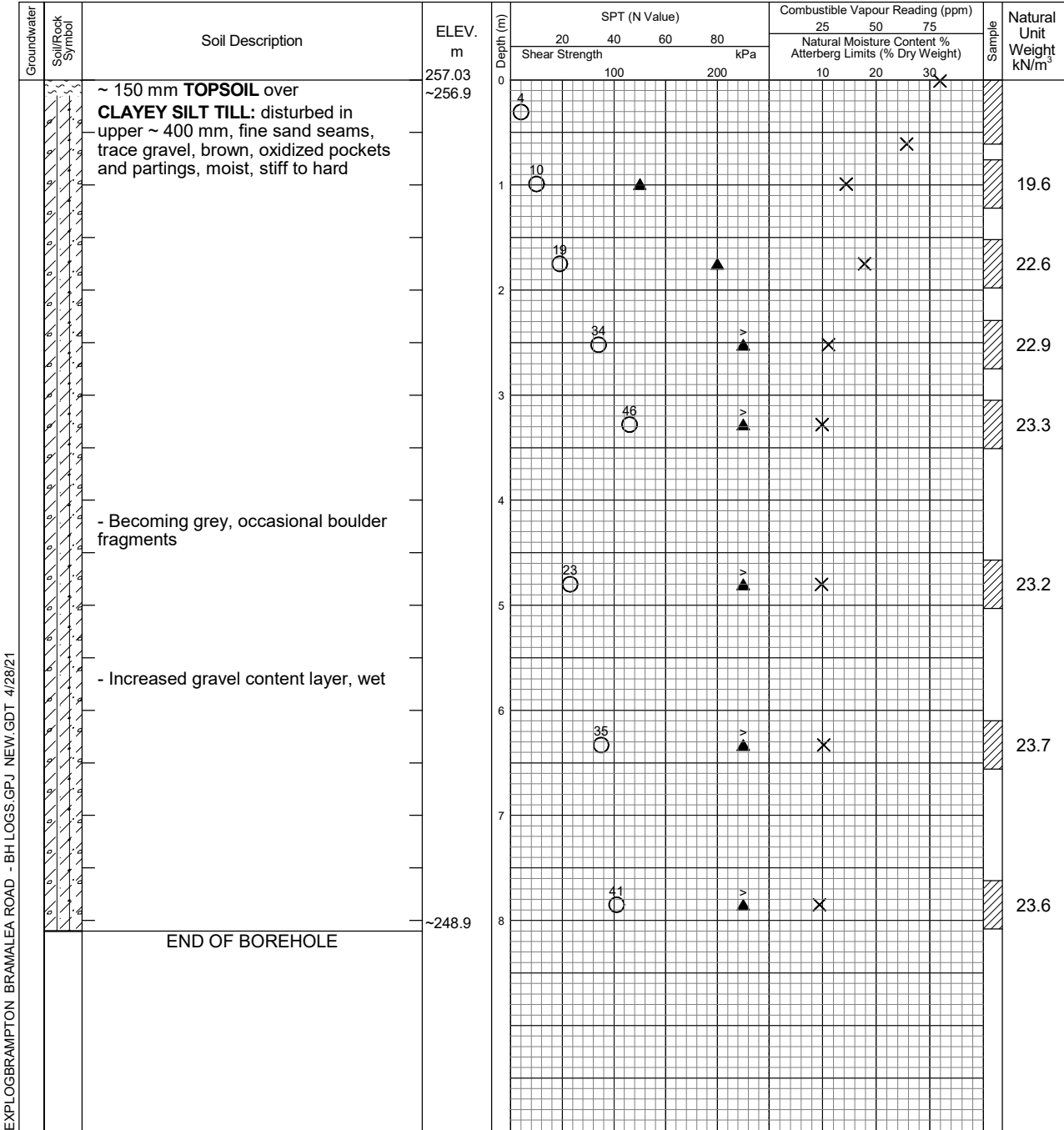
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	7.16	7.62





# Log of Borehole 13

Project No. BRM-21004350-B0

Drawing No. 14

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 26, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test \_\_\_\_\_

Plastic and Liquid Limit

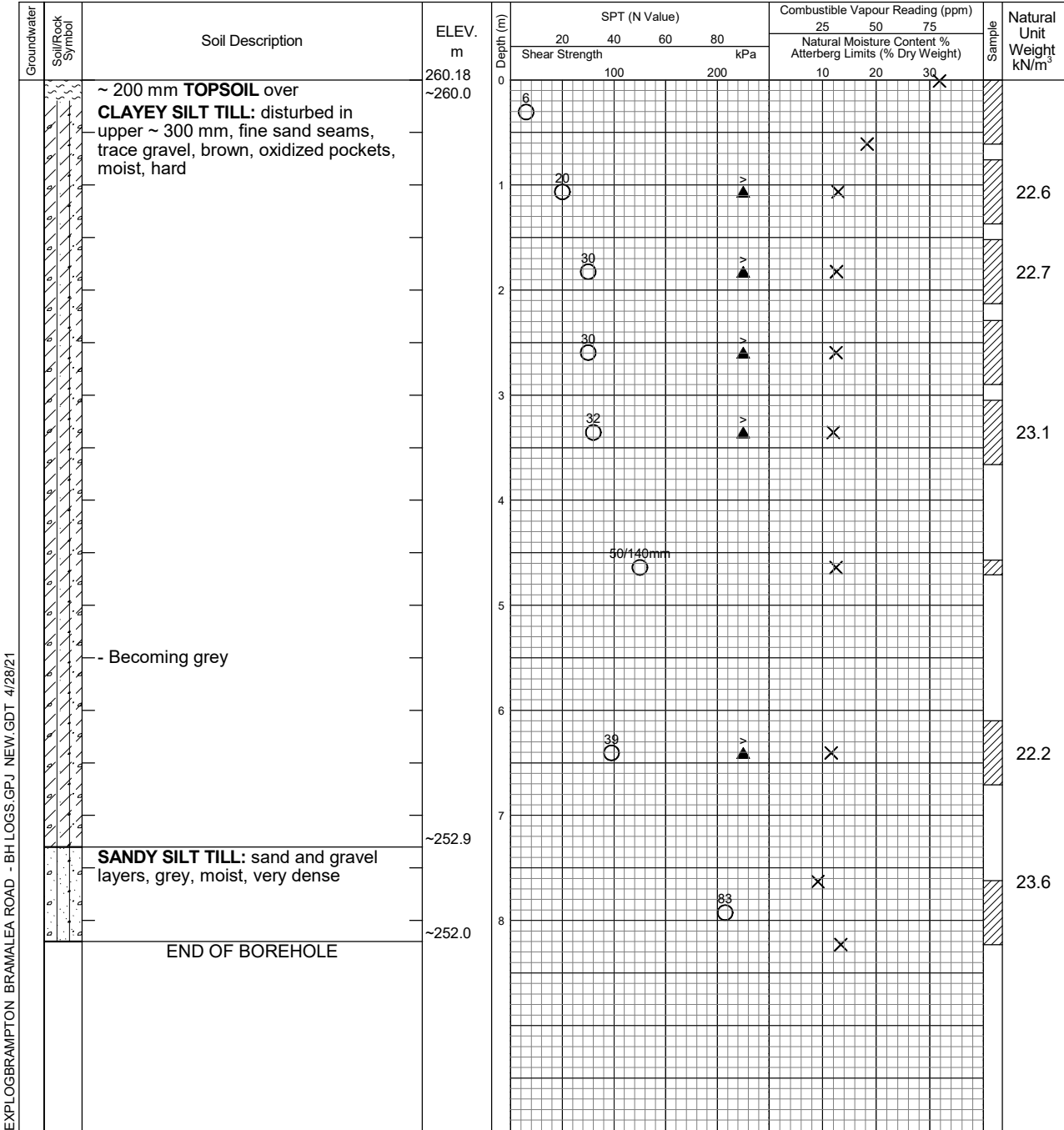
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62





# Log of Borehole 14

Project No. BRM-21004350-B0

Drawing No. 15

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 25, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

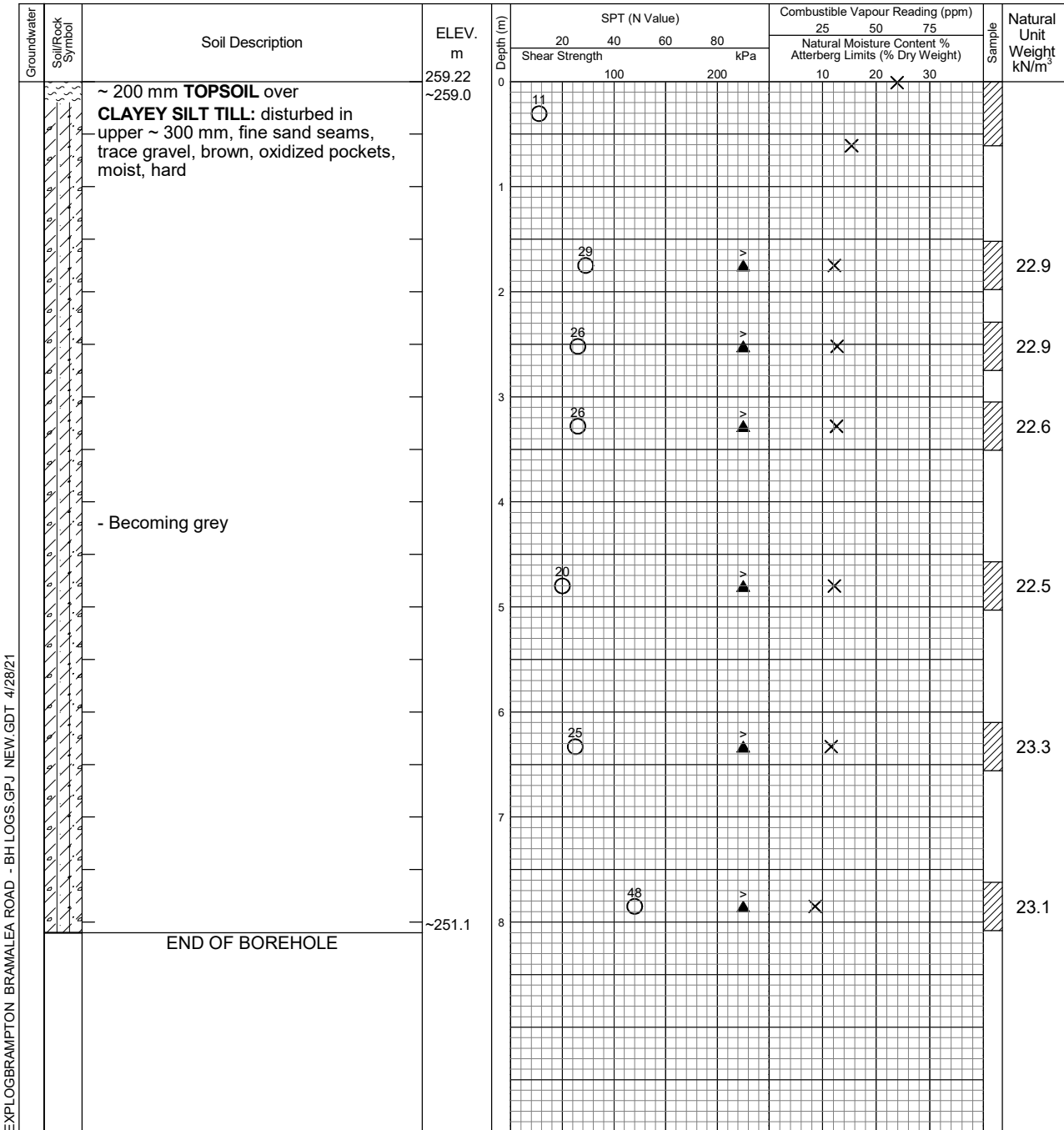
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 15

Project No. BRM-21004350-B0

Drawing No. 16

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 24, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

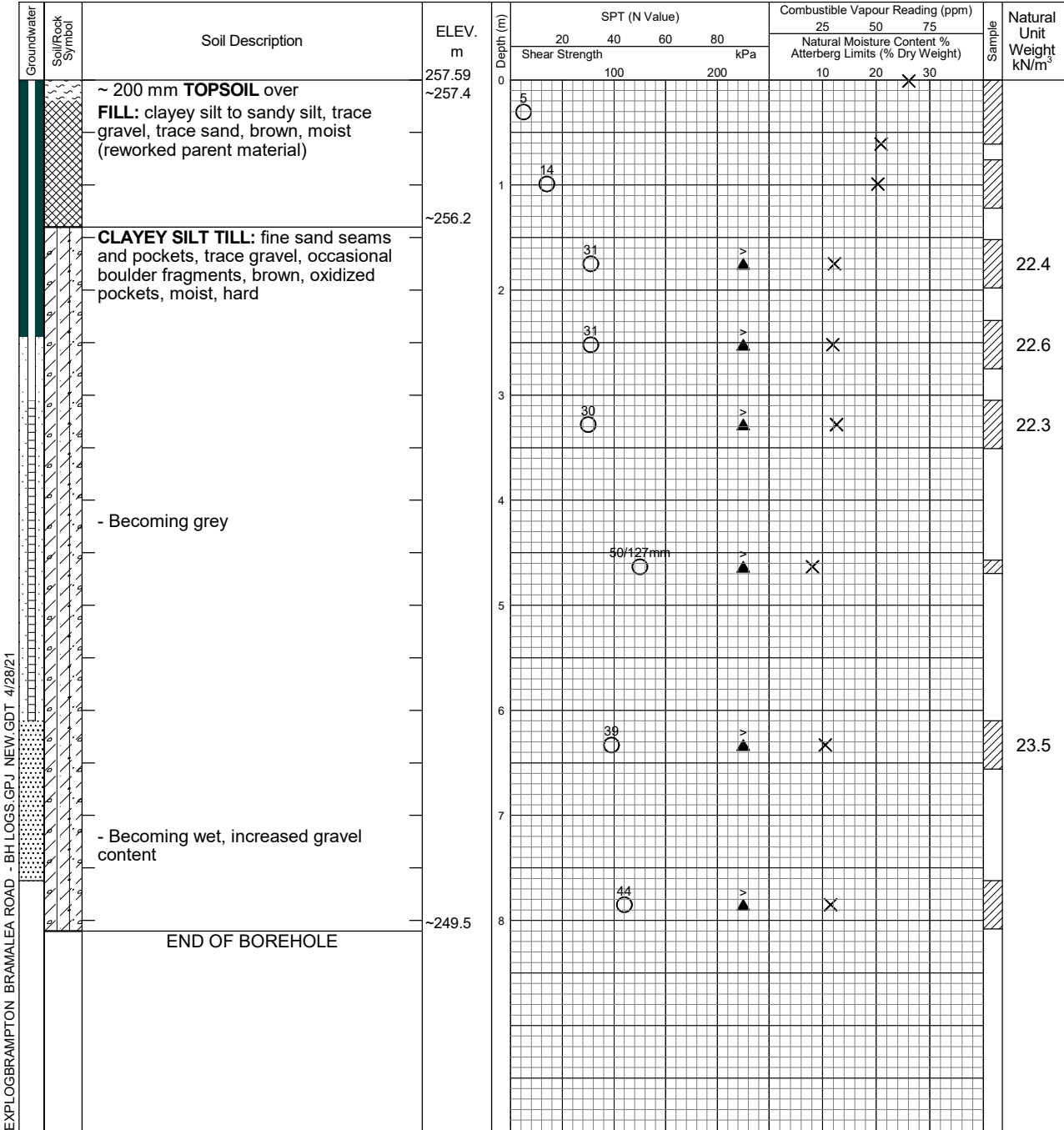
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



Date	Water Level (m)	Hole Open to (m)
On Completion April 9, 2021	4.88 0.51	7.62



# Log of Borehole 16

Project No. BRM-21004350-B0

Drawing No. 17

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 23, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

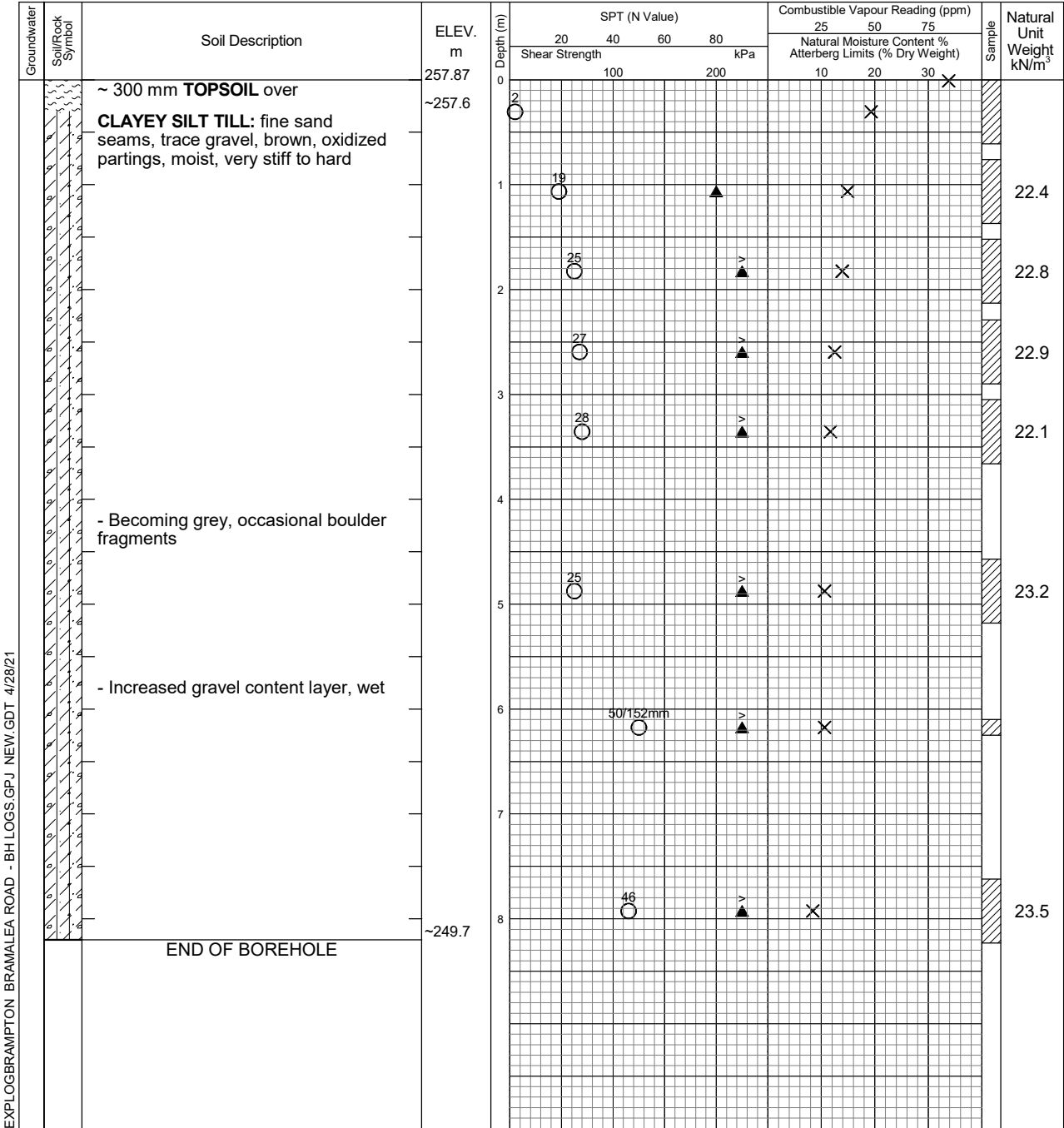
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	7.59	7.62





# Log of Borehole 17

Project No. BRM-21004350-B0

Drawing No. 18

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 23, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

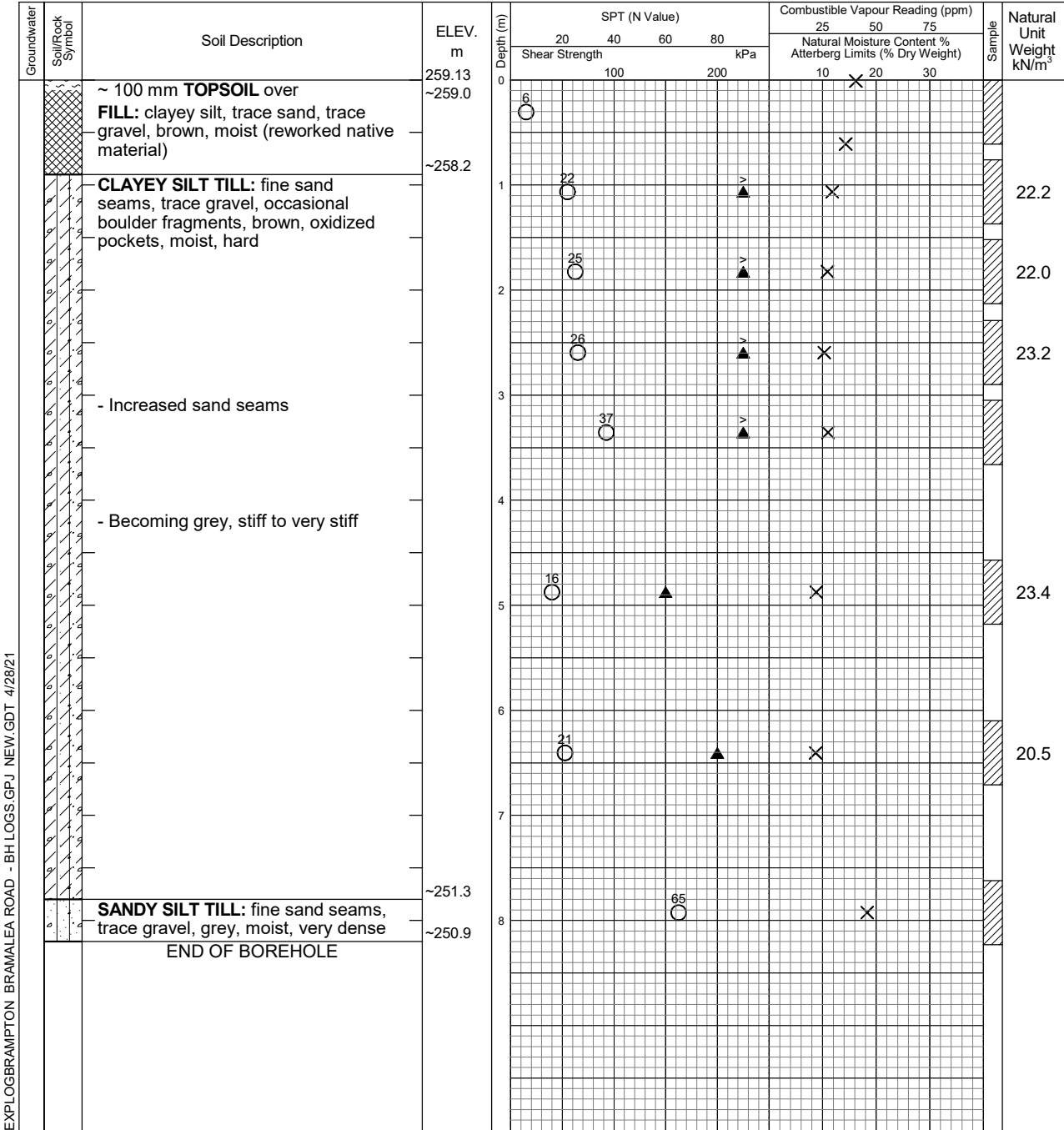
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 18

Project No. BRM-21004350-B0

Drawing No. 19

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 22, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

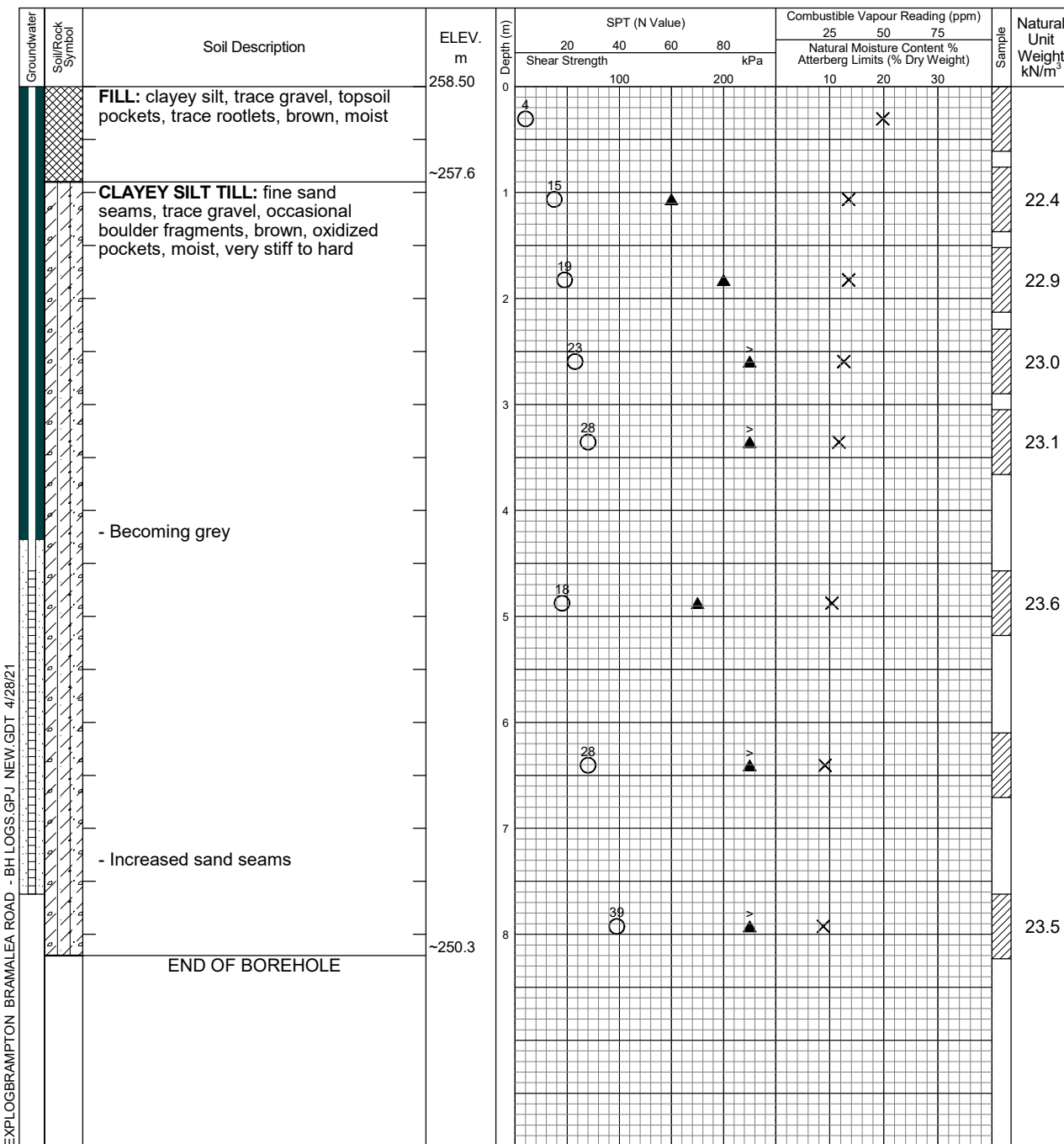
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.47



# Log of Borehole 19

Project No. BRM-21004350-B0

Drawing No. 20

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 29, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

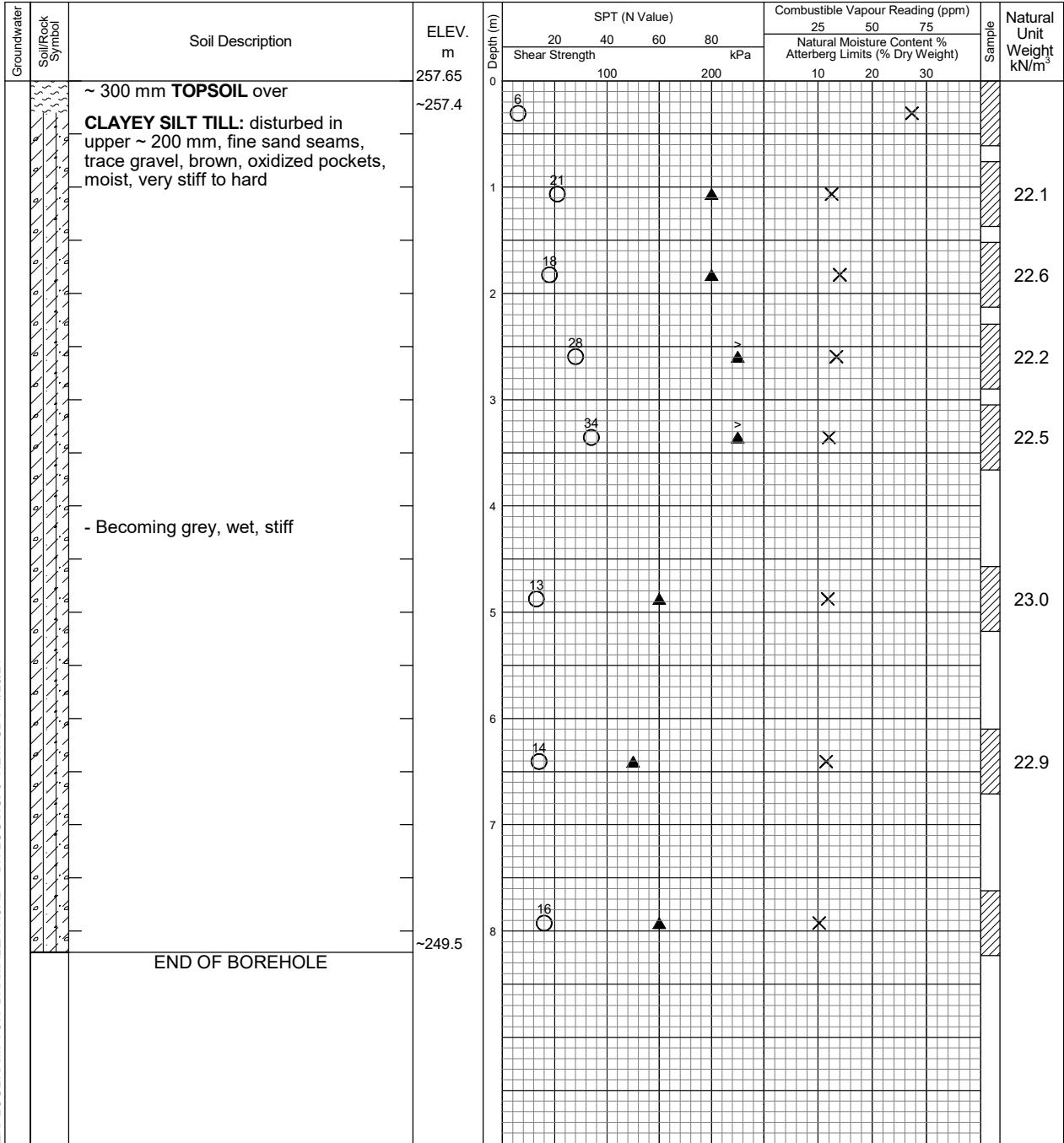
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	Open





# Log of Borehole 20

Project No. BRM-21004350-B0

Drawing No. 21

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 26, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

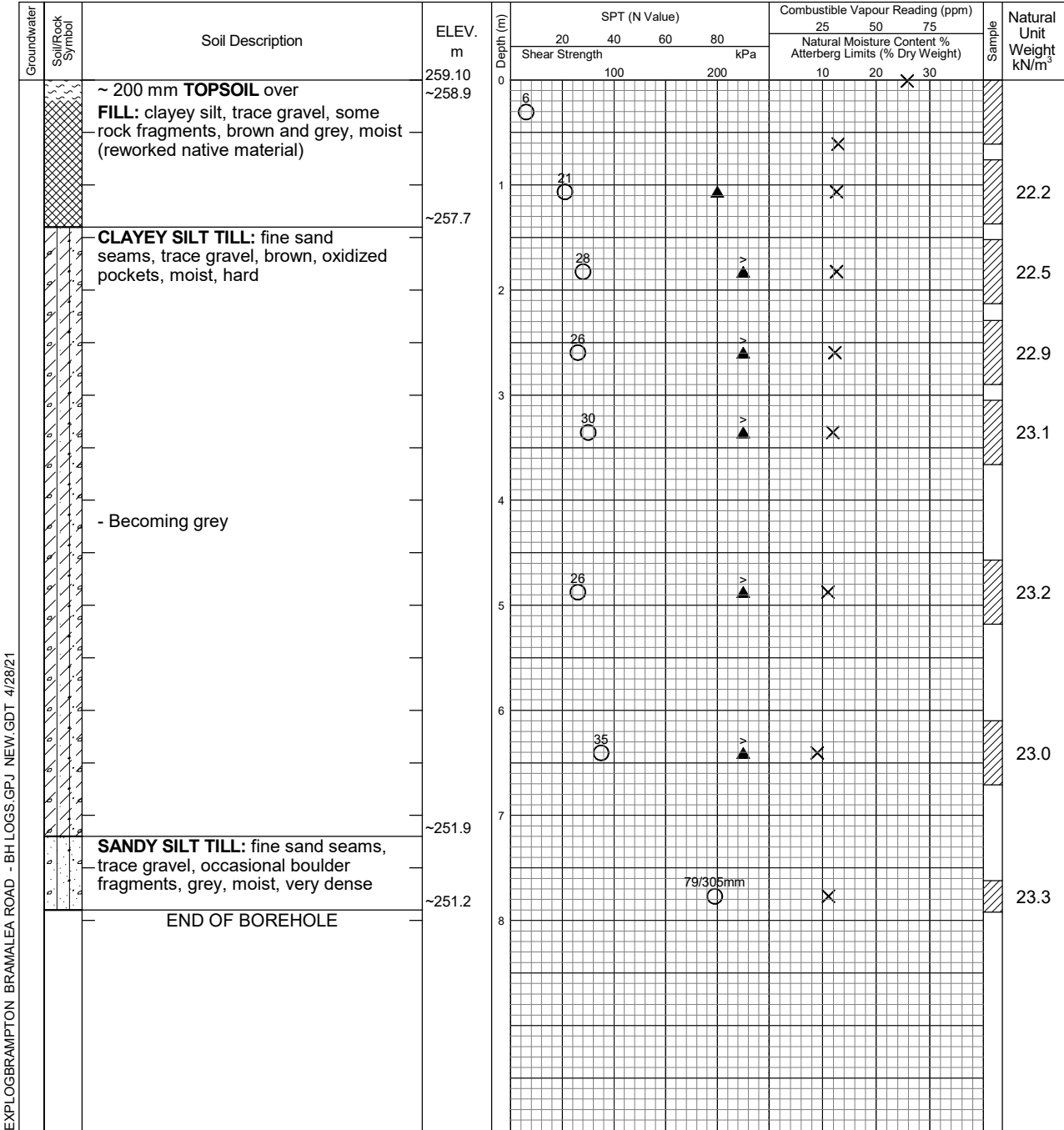
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 21

Project No. BRM-21004350-B0

Drawing No. 22

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 25, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

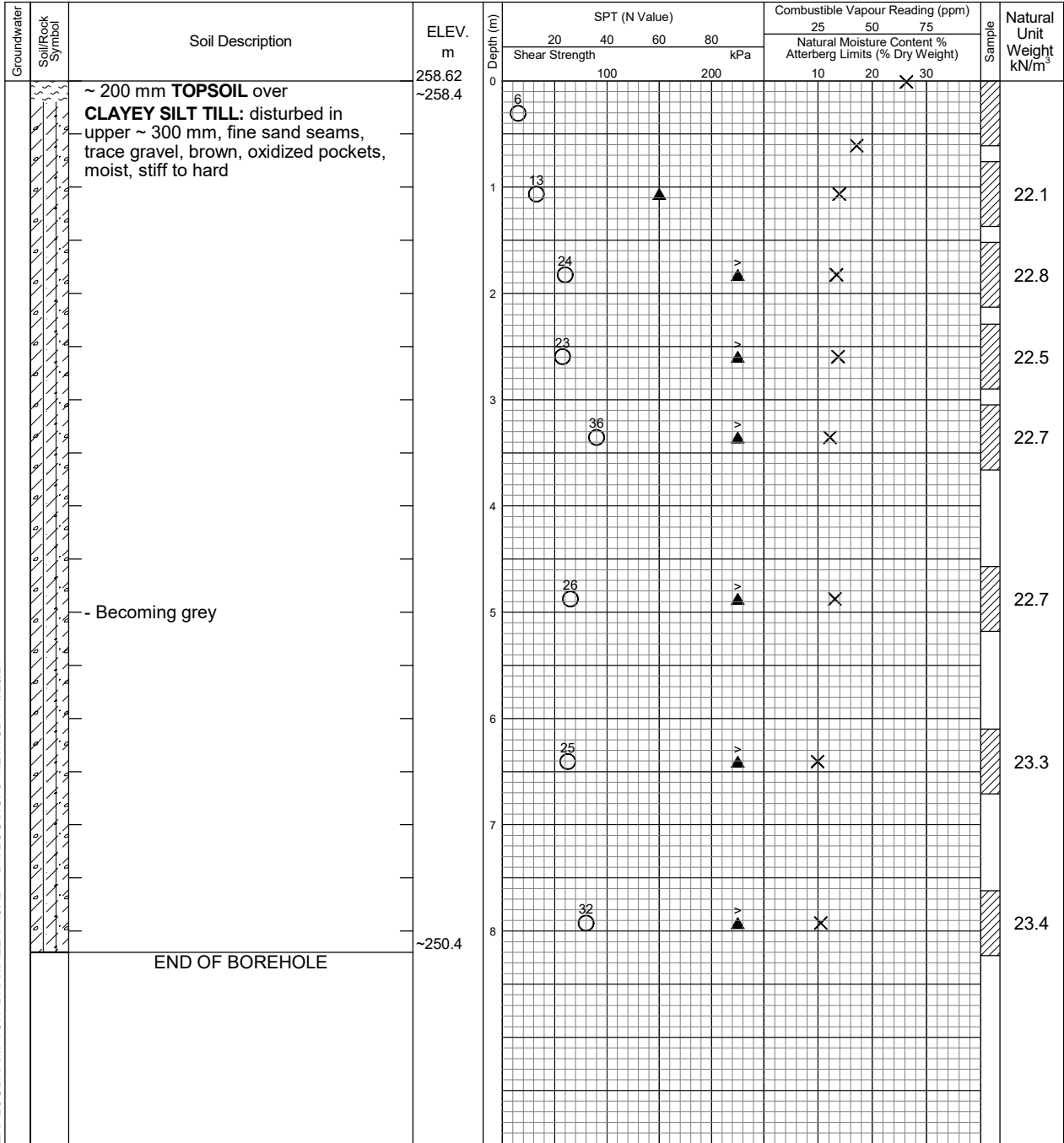
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 22

Project No. BRM-21004350-B0

Drawing No. 23

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 24, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test \_\_\_\_\_

Plastic and Liquid Limit

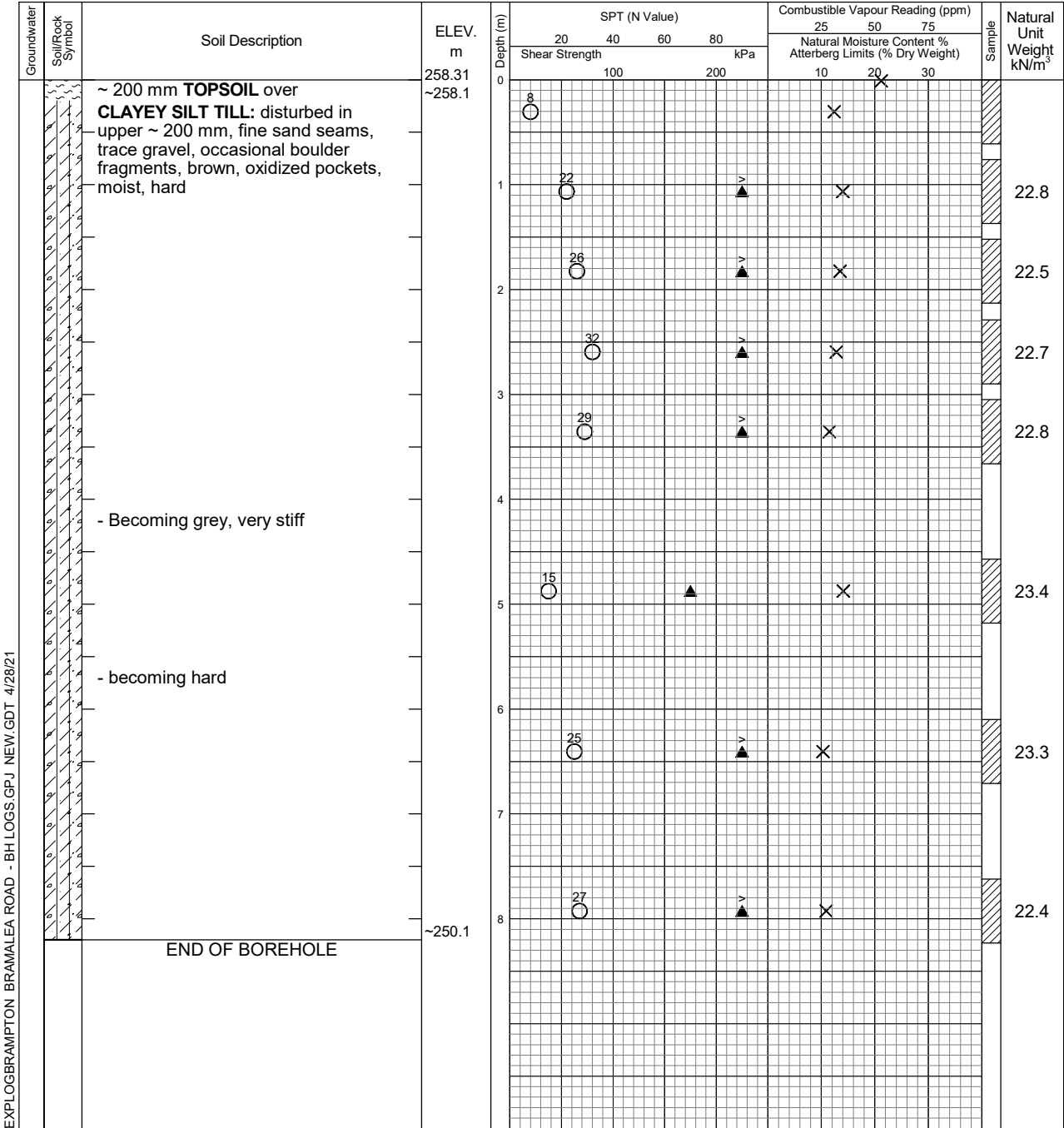
Datum: Geodetic

Shelby Tube \_\_\_\_\_

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 23

Project No. BRM-21004350-B0

Drawing No. 24

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 21, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

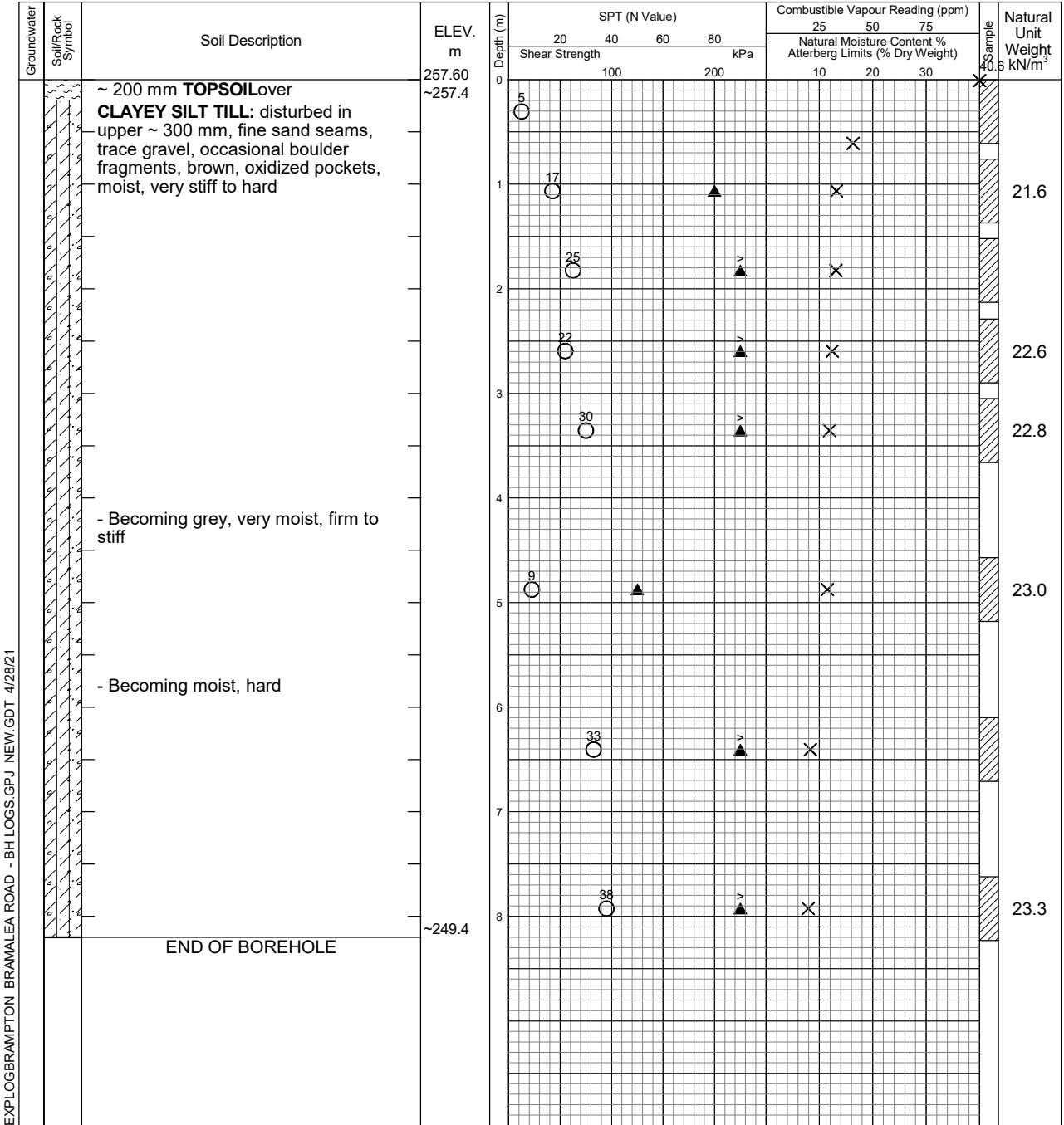
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	Open





# Log of Borehole 24

Project No. BRM-21004350-B0

Drawing No. 25

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 22, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test \_\_\_\_\_

Plastic and Liquid Limit

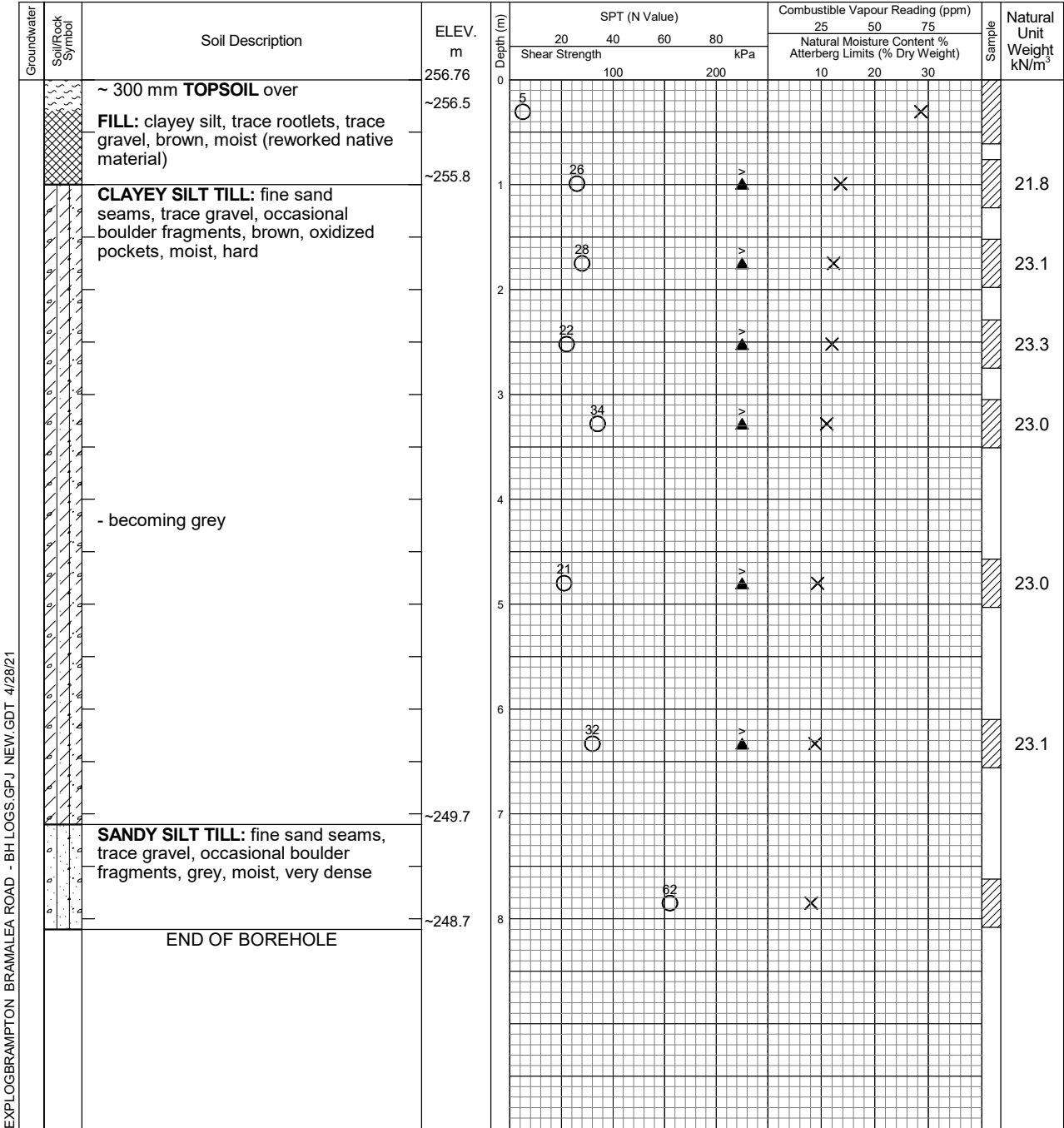
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.42



# Log of Borehole 25

Project No. BRM-21004350-B0

Drawing No. 26

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 29, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

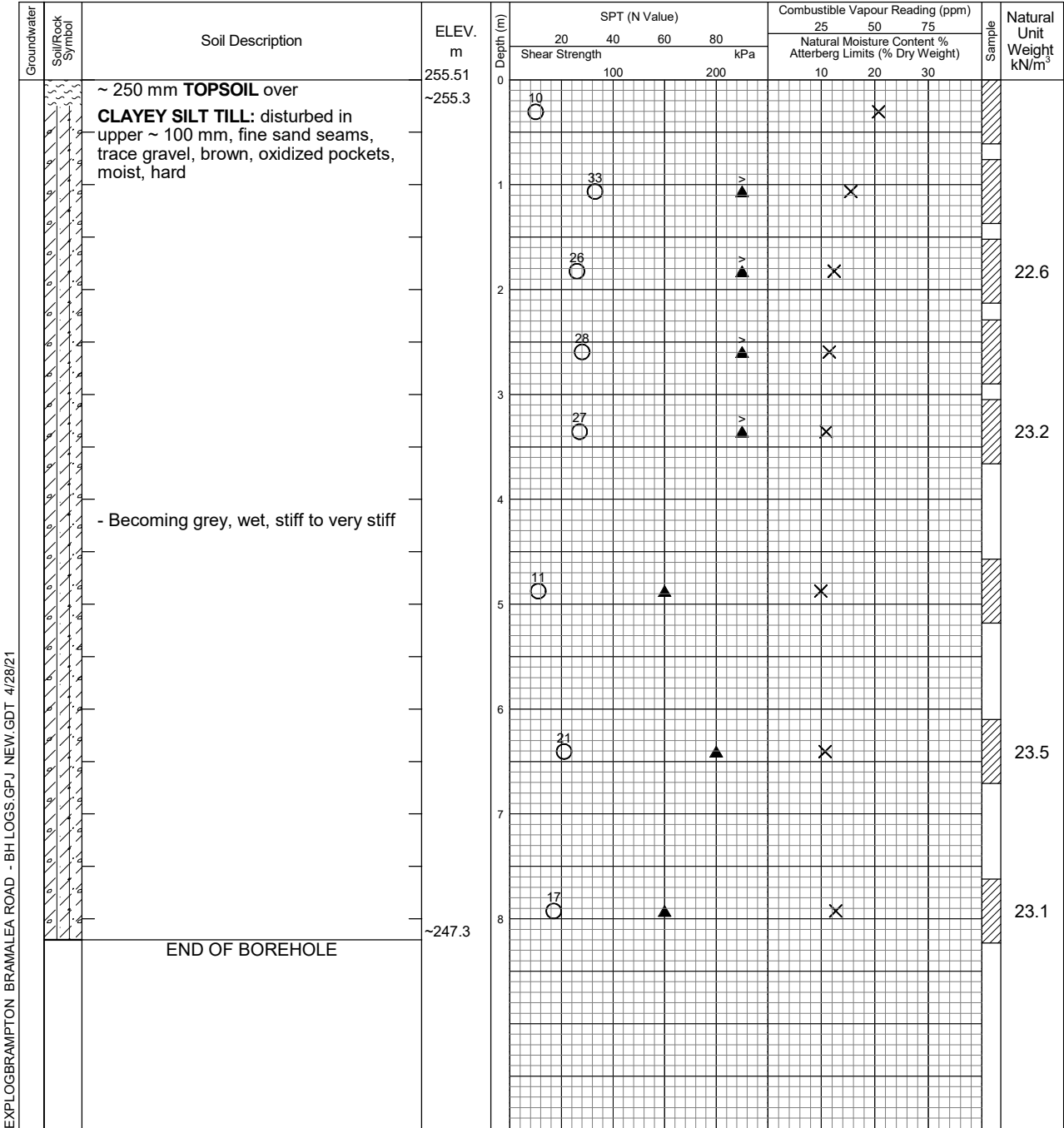
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	Open



# Log of Borehole 26

Project No. BRM-21004350-B0

Drawing No. 27

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 26, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

Datum: Geodetic

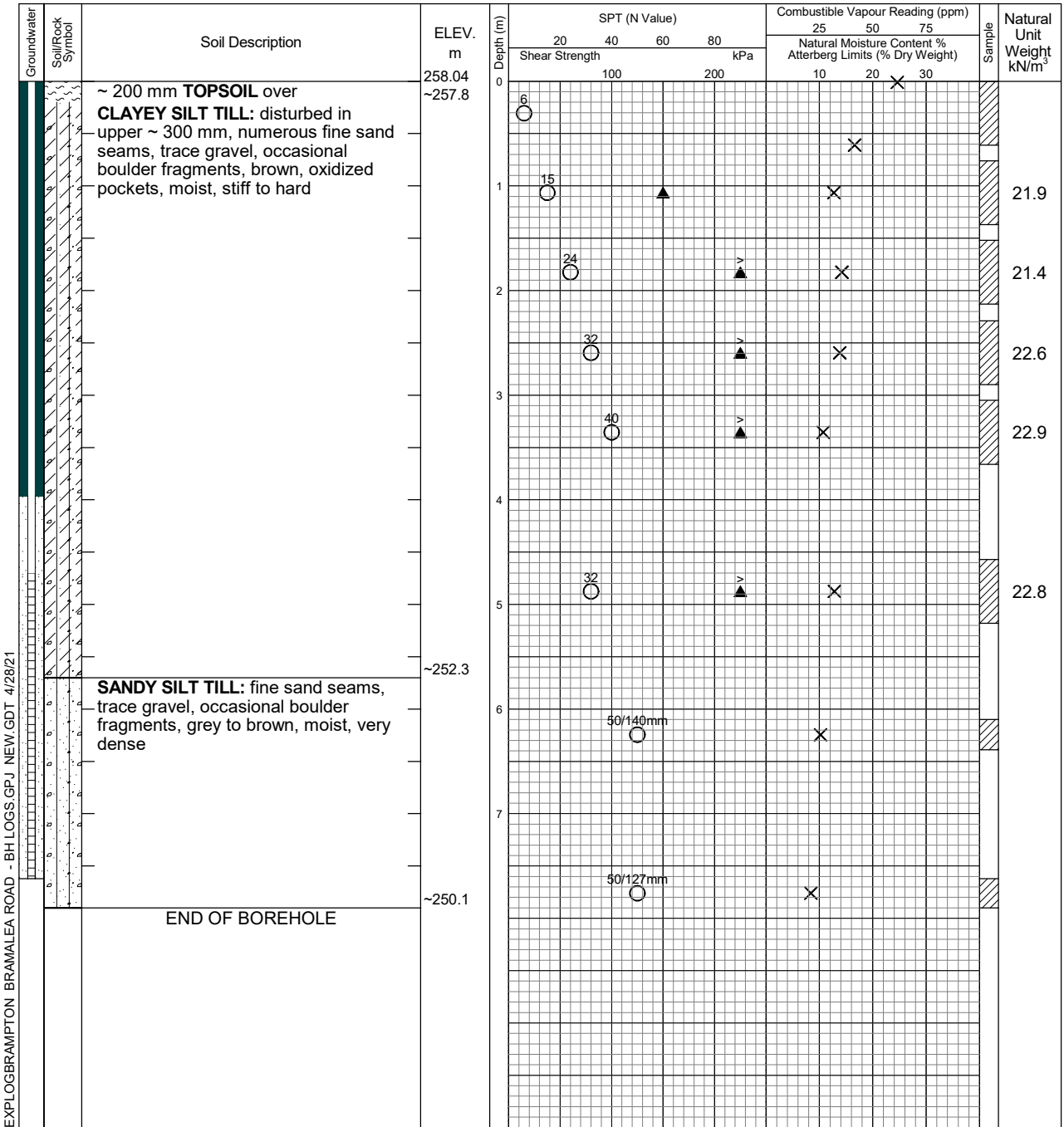
Shelby Tube

Undrained Triaxial at

Field Vane Test

% Strain at Failure

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion April 9, 2021	Dry Dry	7.62



# Log of Borehole 27

Project No. BRM-21004350-B0

Drawing No. 28

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 25, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

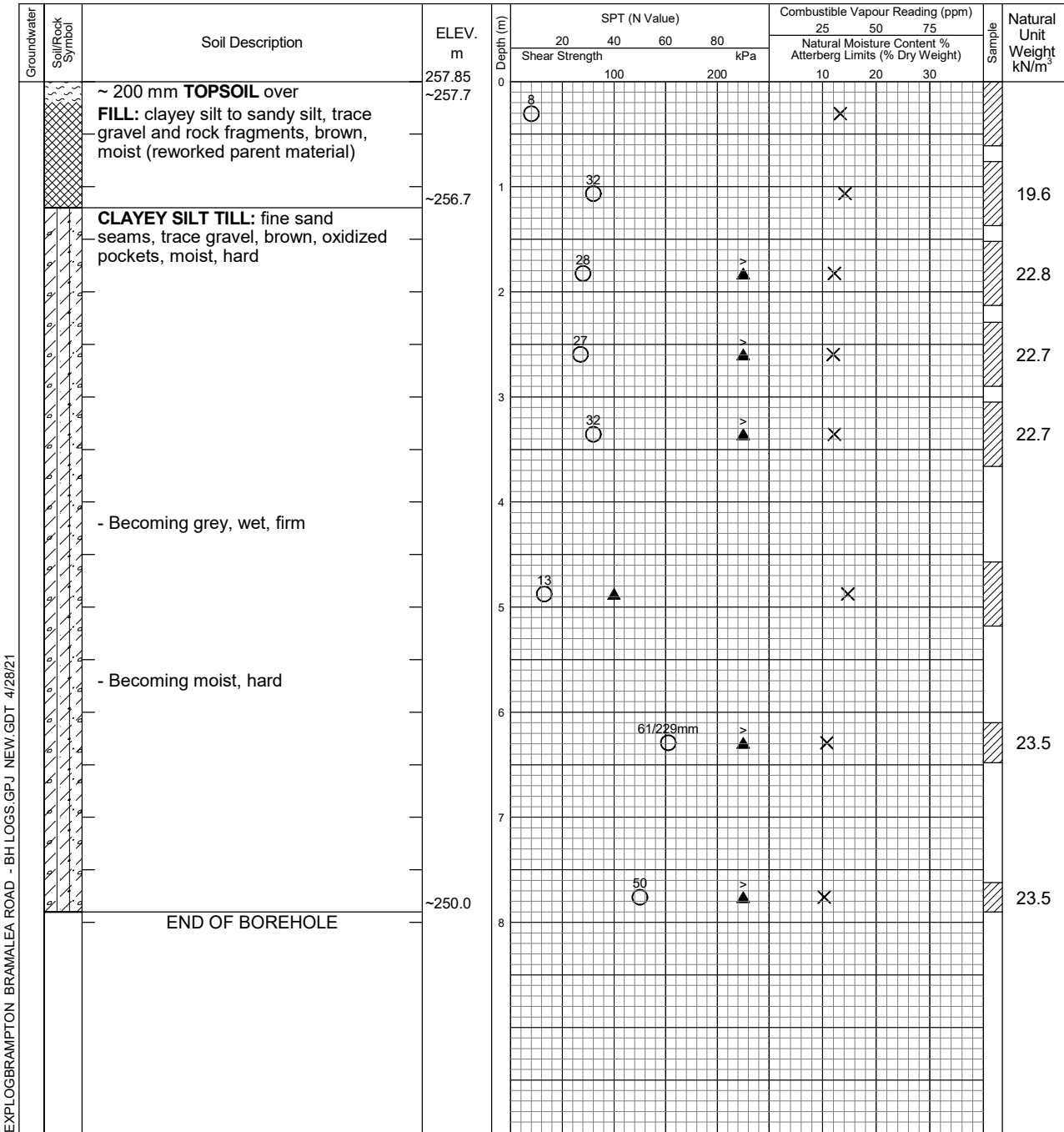
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	7.01	7.62





# Log of Borehole 28

Project No. BRM-21004350-B0

Drawing No. 29

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 24, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test \_\_\_\_\_

Plastic and Liquid Limit

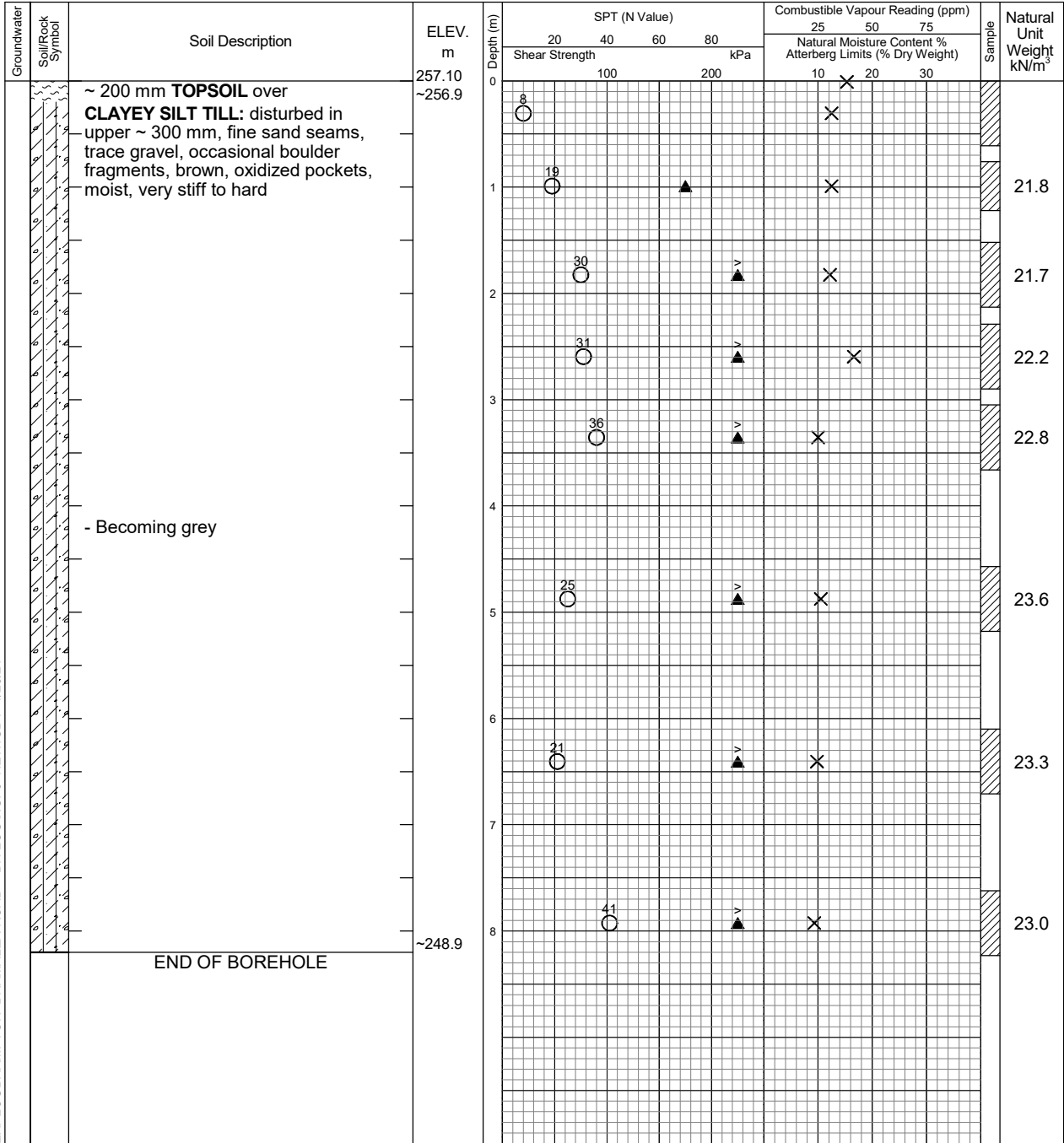
Datum: Geodetic

Shelby Tube \_\_\_\_\_

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 29

Project No. BRM-21004350-B0

Drawing No. 30

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 22, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

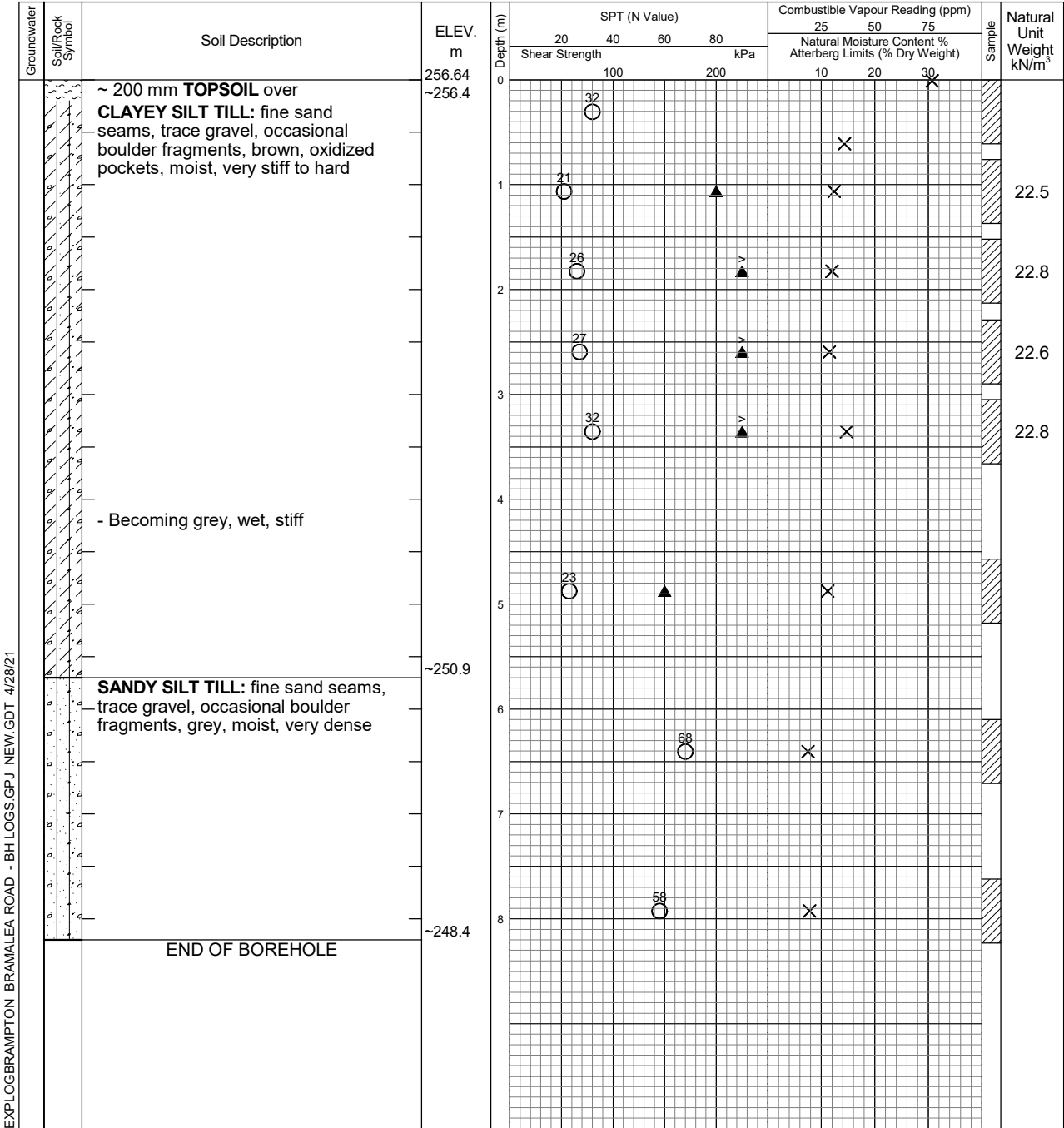
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion	7.42	7.47



# Log of Borehole 30

Project No. BRM-21004350-B0

Drawing No. 31

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12282 Bramalea Road

Date Drilled: Mar 22, 2021

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: \_\_\_\_\_

Dynamic Cone Test

Plastic and Liquid Limit

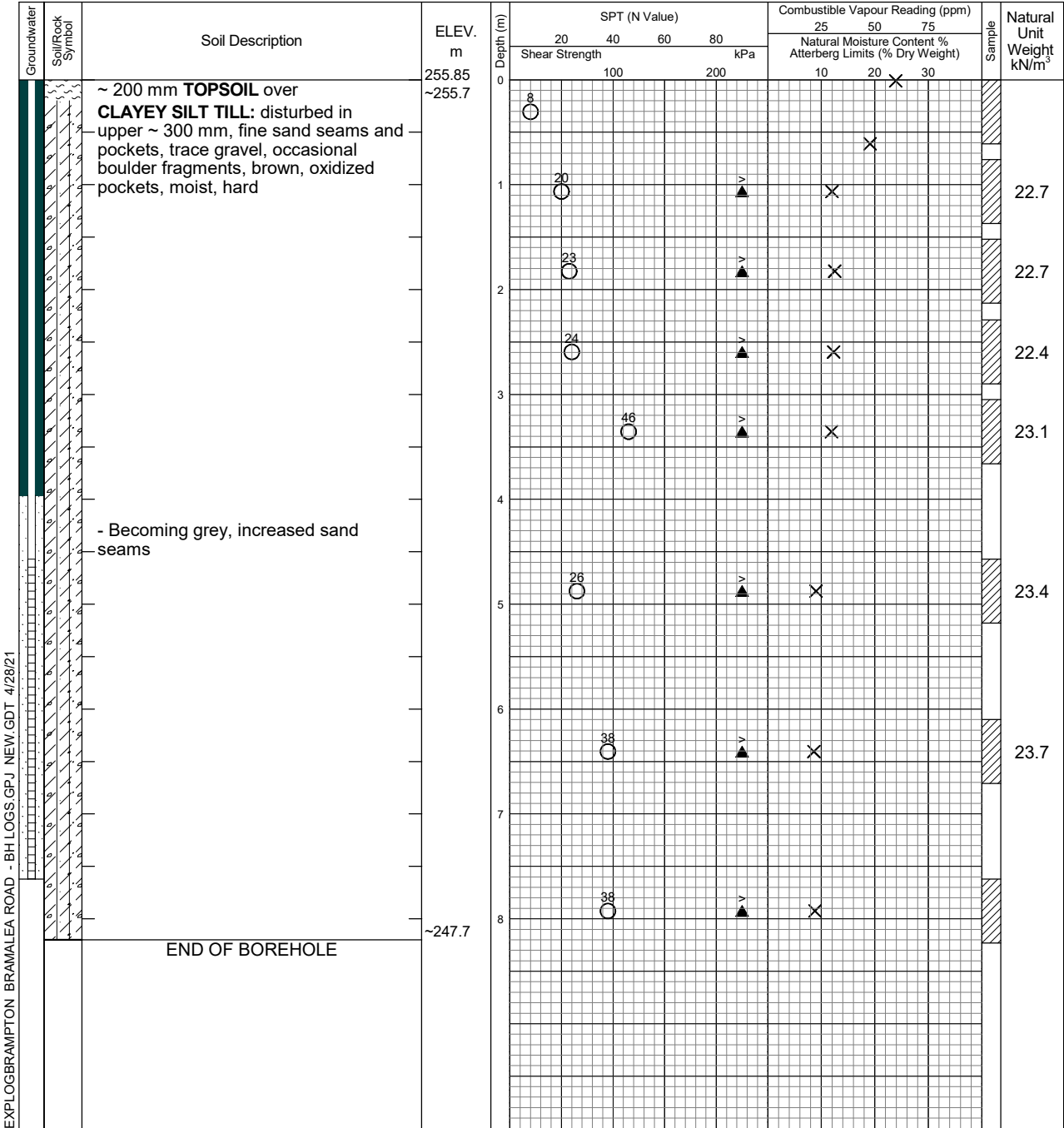
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

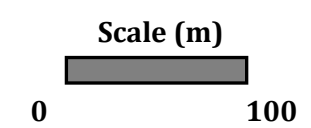
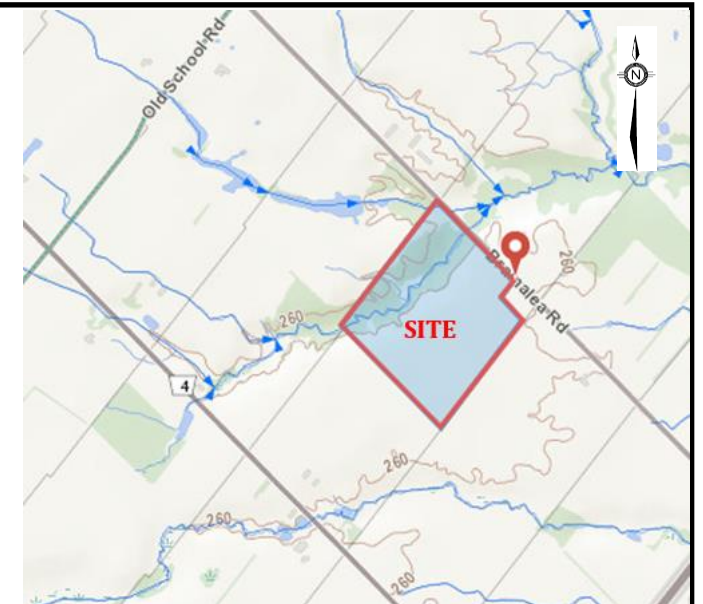
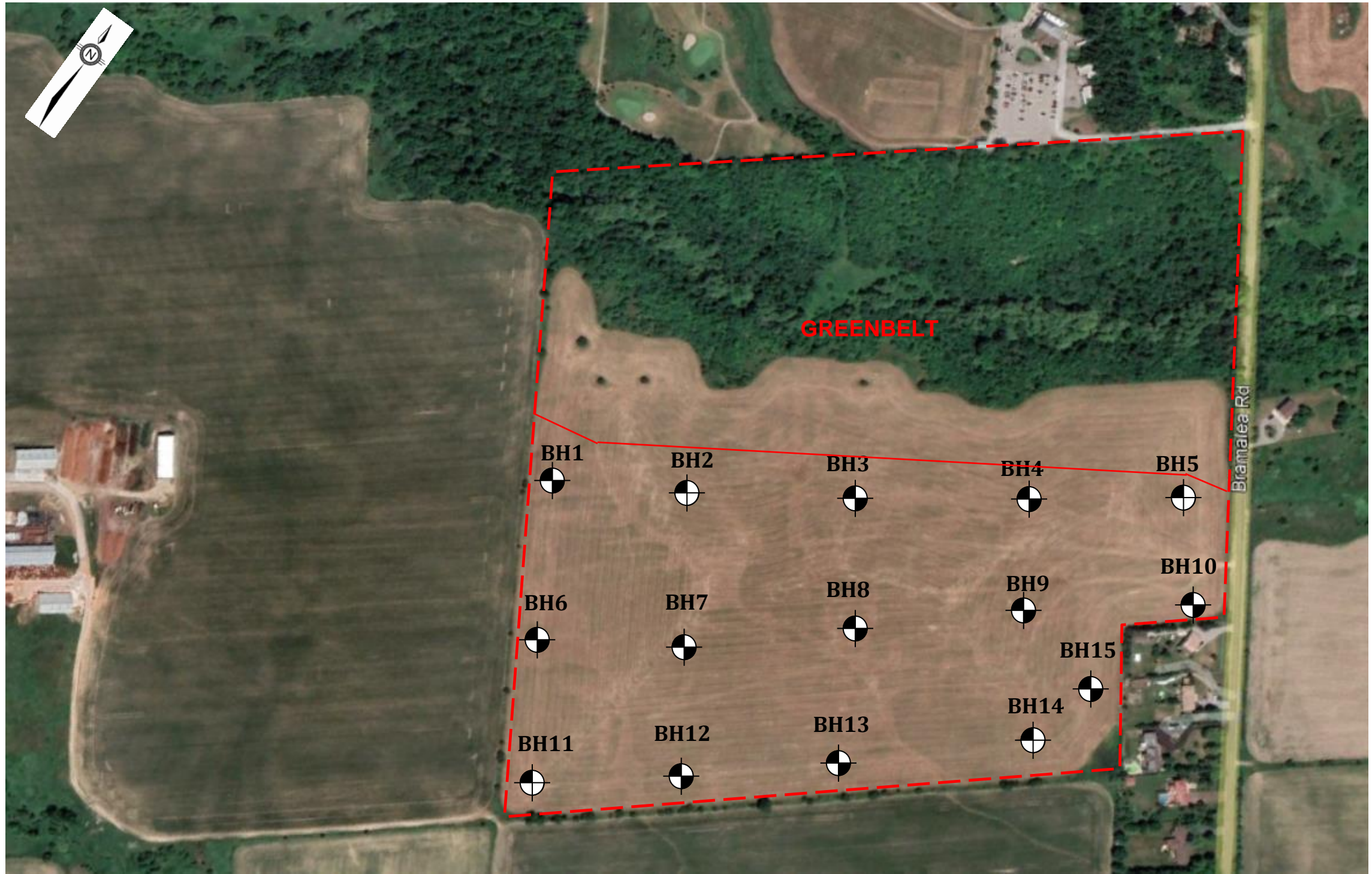
Penetrometer




EXPLOGBRAMPTON BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 4/28/21

Date	Water Level (m)	Hole Open to (m)
On Completion April 9, 2021	7.47 4.13	7.62





Legend	
	Borehole Location
	Monitoring Well Location


 EXP Services Inc.  
 1595 Clark Boulevard  
 Brampton, Ontario  
 L6T 4V1  
 Telephone: (905) 793-9800  
 Fax: (905) 793-0641

SCALE: As shown	
DATE: February 2022	
DWN.: BH	CHKD.: DD

<b>Borehole Location Plan</b> Preliminary Geotechnical Investigation 12442 Bramalea Road Caledon, Ontario	
PROJECT NO.: BRM-22002697-B0	DWG. NO.: 1



## Notes on Sample Descriptions and Soil Types

## Drawing 1A

1. All sample descriptions included in this report follow the Canadian Foundations Engineering Manual soil classification system. This system follows the standard proposed by the International Society for Soil Mechanics and Foundation Engineering. Laboratory grain size analyses provided by EXP also follow the same system. Others may use different classification systems; one such system is the Unified Soil Classification. Please note that, with the exception of those samples where a grain size analysis has been made, all samples are classified visually. Visual classification is not sufficiently accurate to provide exact grain sizing or precise differentiation between size classification systems.

### ISSMFE SOIL CLASSIFICATION

CLAY	SILT			SAND			GRAVEL			COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE		
	0.002	0.006	0.02	0.06	0.2	0.6	2.0	6.0	20	60	200
EQUIVALENT GRAIN DIAMETER IN MILLIMETERS											

CLAY (PLASTIC) TO SILT (NONPLASTIC)	SAND			GRAVEL	
	FINE	MEDIUM	COARSE	FINE	COARSE

### UNIFIED SOIL CLASSIFICATION

2. **Fill:** Where fill is designated on the borehole log it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description may therefore not be applicable as a general description of site fill materials. All fills should be expected to contain obstruction such as wood, large concrete pieces or subsurface basements, floors, tanks, etc., none of these may have been encountered in the boreholes. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. Fill at this site may have been monitored for the presence of methane gas and, if so, the results are given on the borehole logs. The monitoring process does not indicate the volume of gas that can be potentially generated nor does it pinpoint the source of the gas. These readings are to advise of the presence of gas only, and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic/hazardous waste that renders it unacceptable for deposition in any but designated land fill sites; unless specifically stated the fill on this site has not been tested for contaminants that may be considered toxic or hazardous. This testing and a potential hazard study can be undertaken if requested. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common and are generally not detected in a conventional geotechnical site investigation.
3. **Till:** The term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process the till must be considered heterogeneous in composition and as such may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (60 to 200 mm) or boulders (over 200 mm). Contractors may therefore encounter cobbles and boulders during excavation, even if they are not indicated by the borings. It should be appreciated that normal sampling equipment cannot differentiate the size or type of any obstruction. Because of the horizontal and vertical variability of

till, the sample description may be applicable to a very limited zone; caution is therefore essential when dealing with sensitive excavations or dewatering programs in till materials.

4. Excerpt from "OHSA Regulations for Construction Projects," Part III, Section 226:

- **Soil Types**

Type 1 Soil

- a) is hard, very dense and only able to be penetrated with difficulty by a small sharp object;
- b) has a low natural moisture content and a high degree of internal strength;
- c) has no signs of water seepage; and
- d) can be excavated only by mechanical equipment.

Type 2 Soil

- a) is very stiff, dense and can be penetrated with moderate difficulty by a small sharp object;
- b) has a low to medium natural moisture content and a medium degree of internal strength; and
- c) has a damp appearance after it is excavated.

Type 3 Soil

- a) is stiff to firm and compact to loose in consistency or is previously excavated soil;
- b) exhibits signs of surface cracking;
- c) exhibits signs of water seepage;
- d) if it is dry, may run easily into a well-defined conical pile; and
- e) has a low degree of internal strength.

Type 4 Soil

- a) is soft to very soft and very loose in consistency, very sensitive and upon disturbance is significantly reduced in natural strength;
- b) runs easily or flows, unless it is completely supported before excavating procedures;
- c) has almost no internal strength;
- d) is wet or muddy; and
- e) exerts substantial fluid pressure on its supporting system. O. Reg. 213/91, s. 226.

# Log of Borehole 1

Project No. BRM-22002697-B0

Drawing No. 2

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 8, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

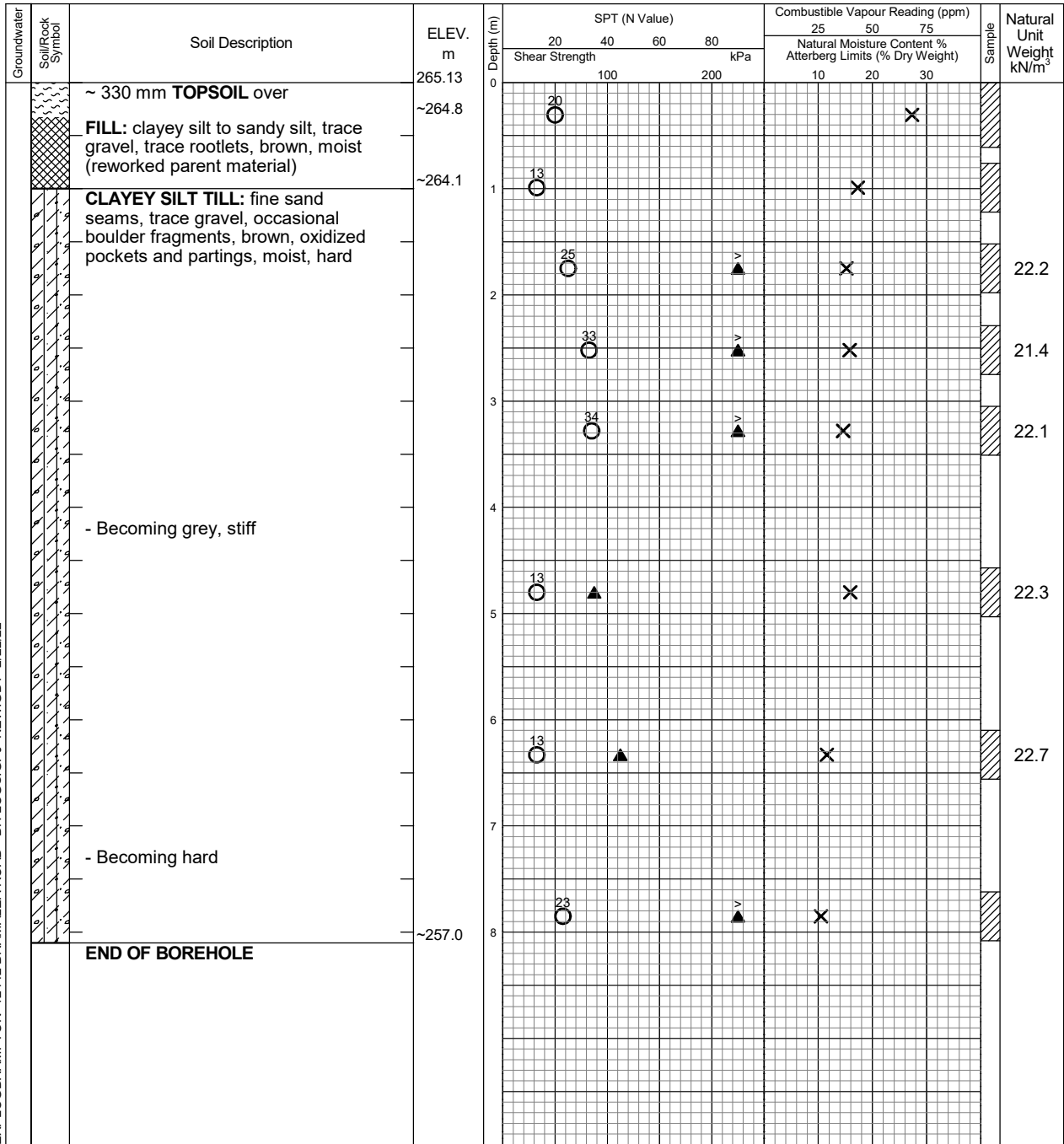
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 2

Project No. BRM-22002697-B0

Drawing No. 3

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 8, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

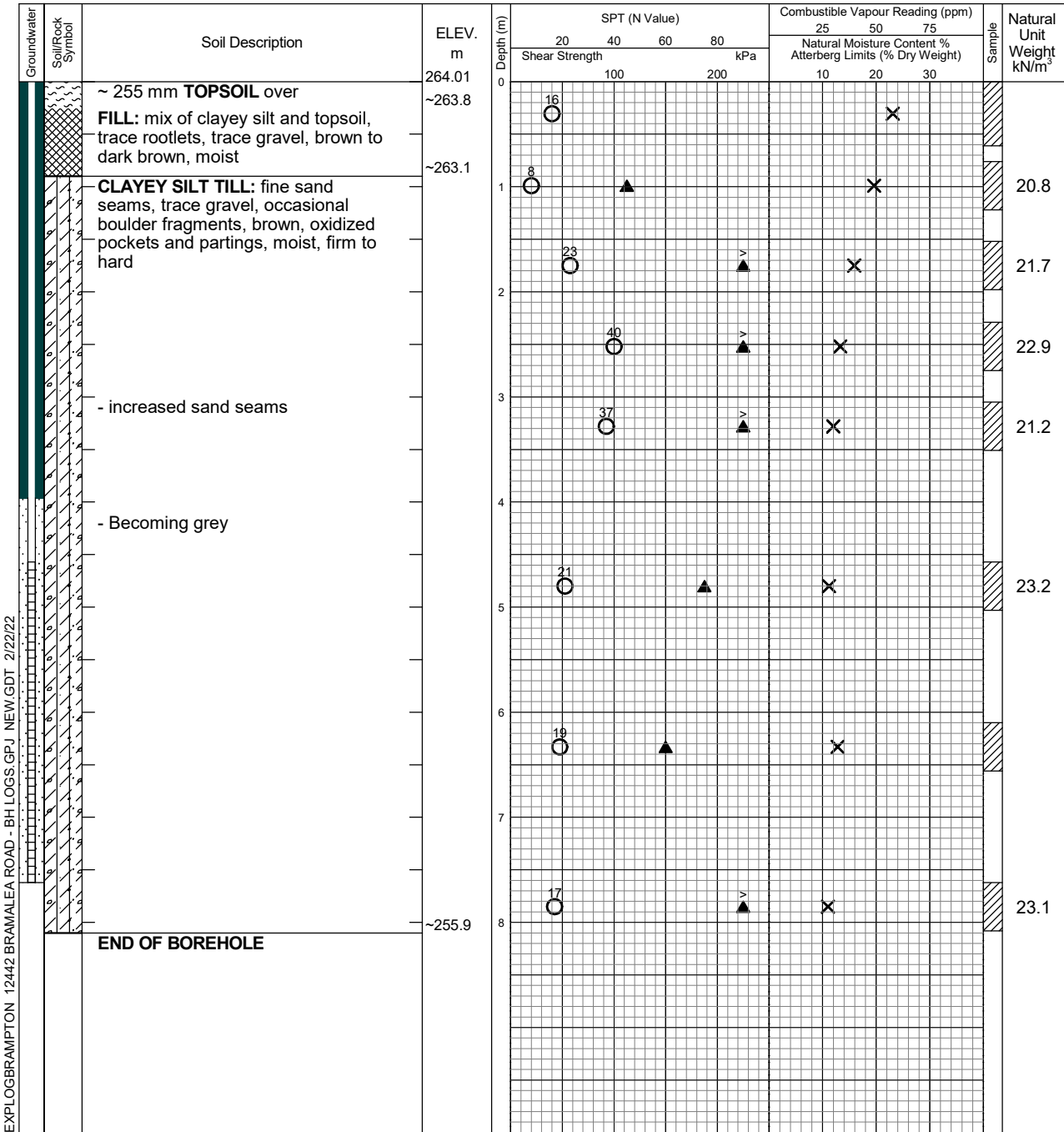
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion February 22, 2022	Dry 4.16	7.62





# Log of Borehole 3

Project No. BRM-22002697-B0

Drawing No. 4

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 7, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

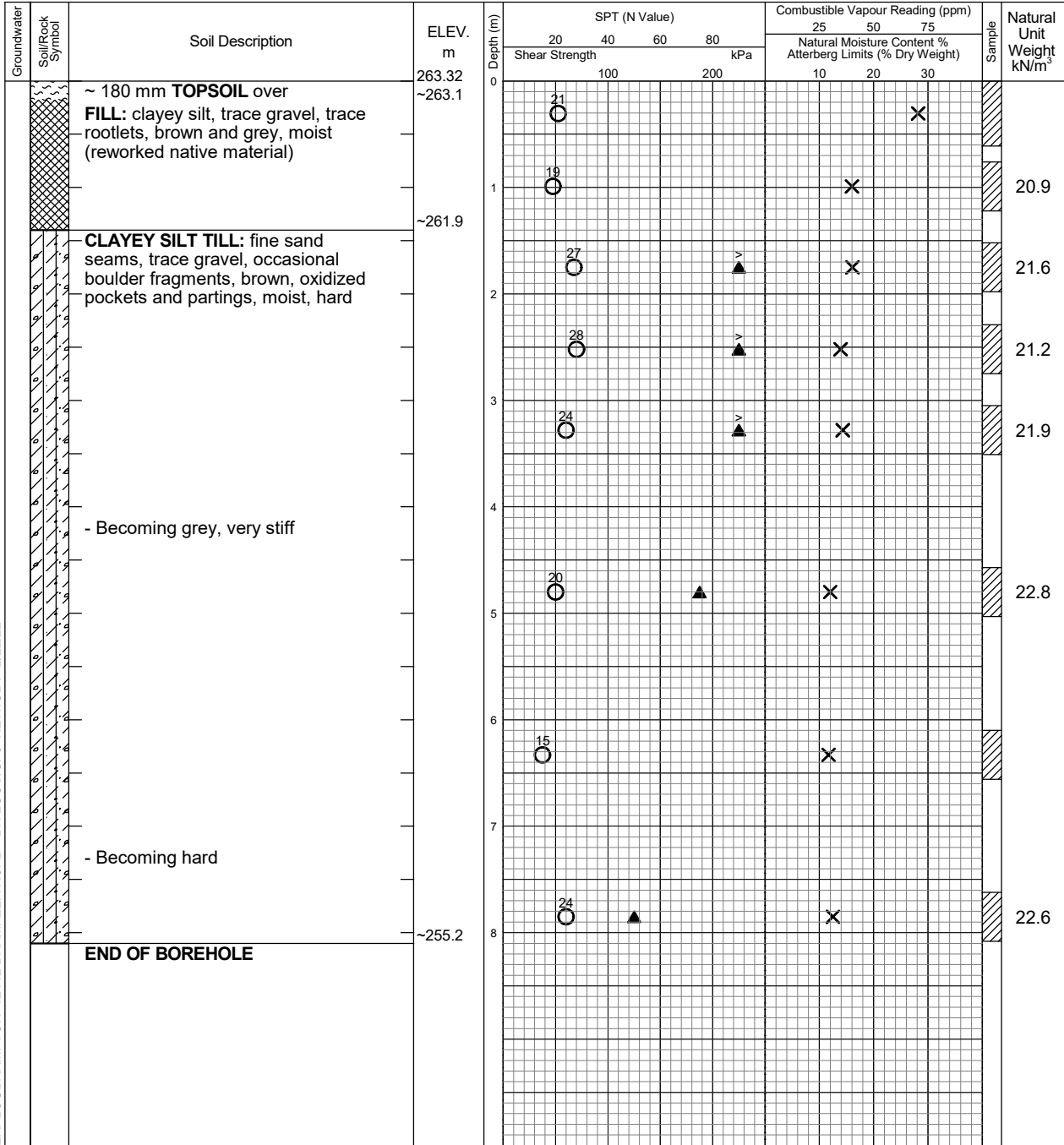
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 4

Project No. BRM-22002697-B0

Drawing No. 5

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 7, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

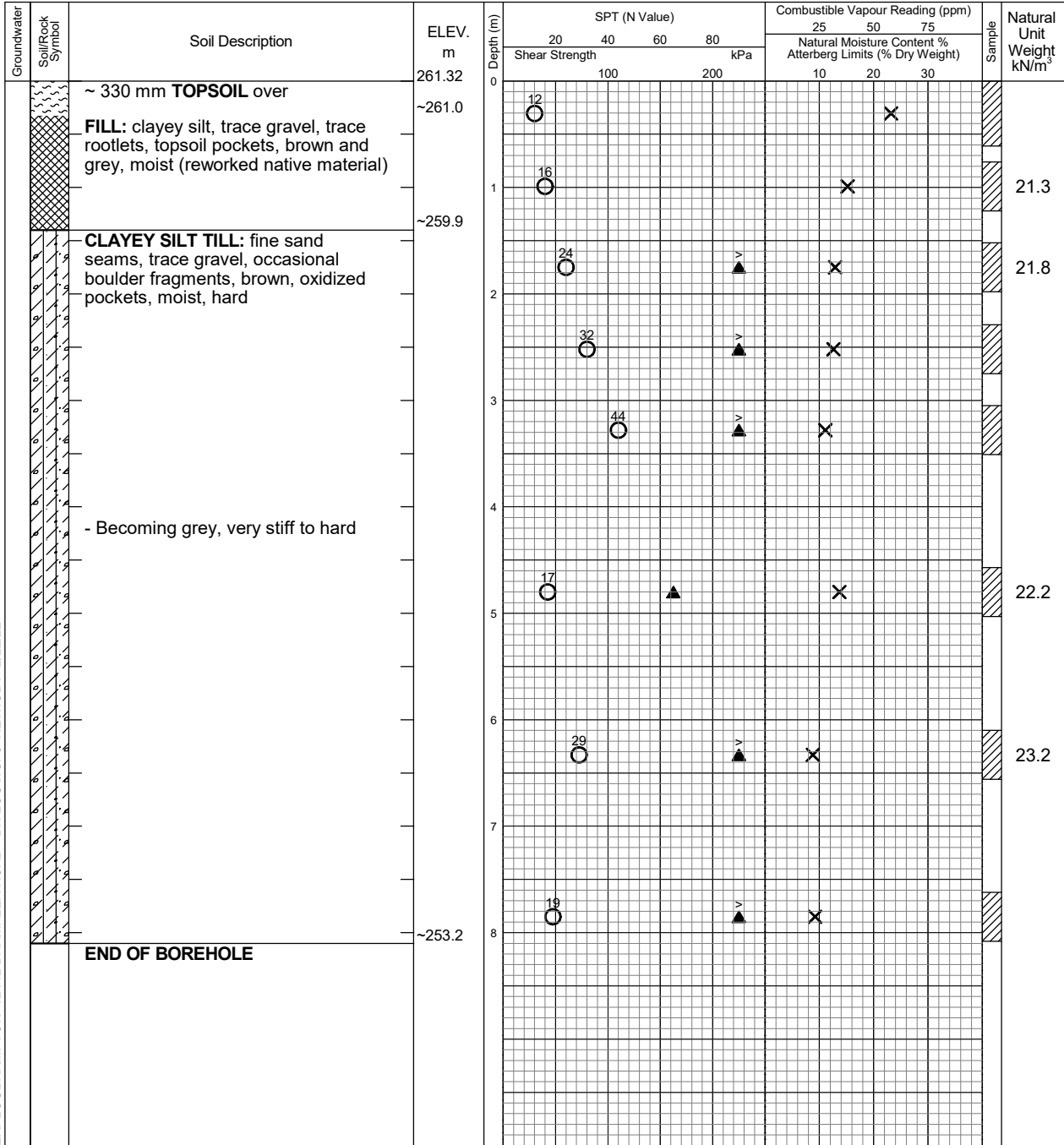
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 5

Project No. BRM-22002697-B0

Drawing No. 6

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 7, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

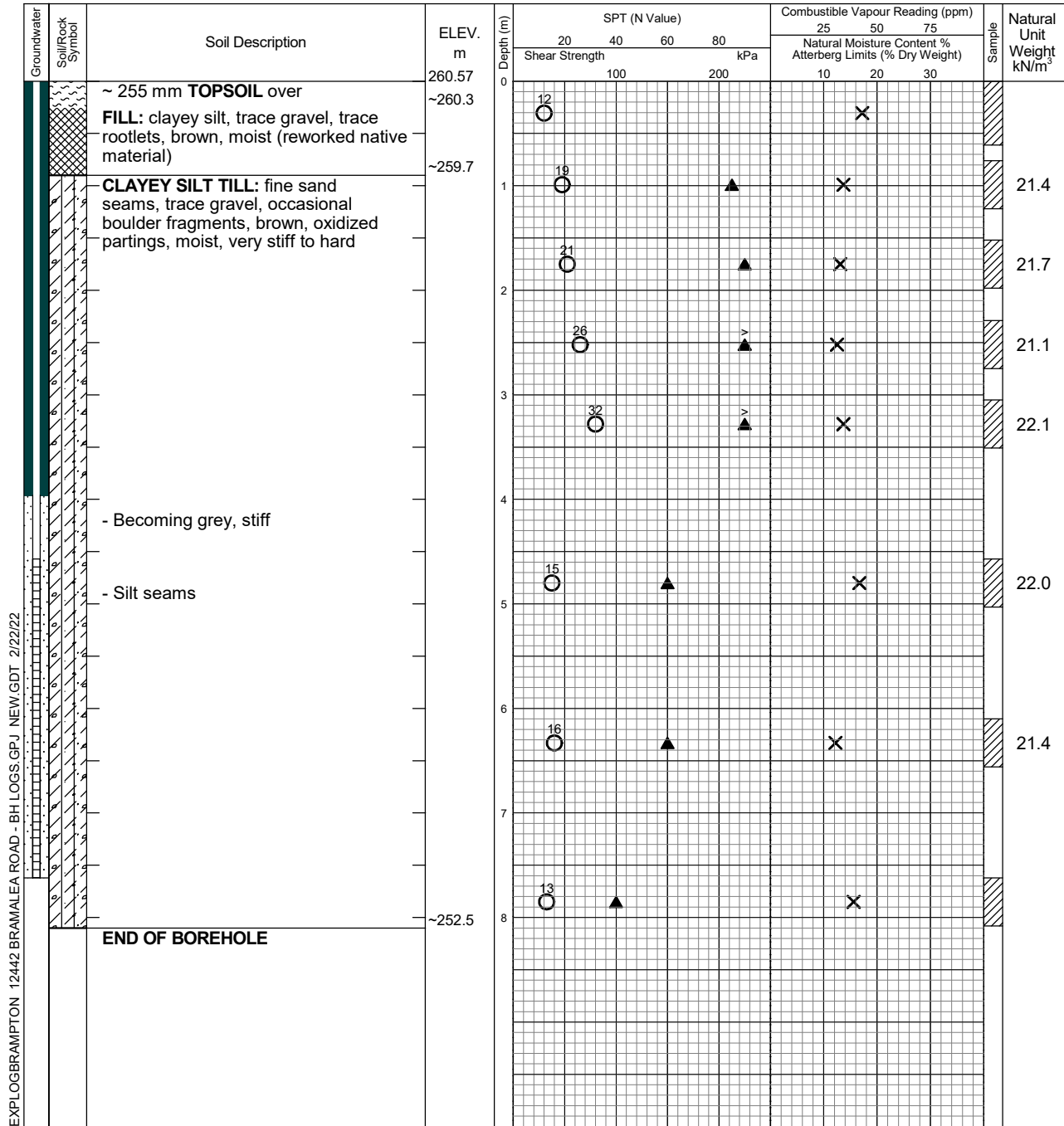
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion February 22, 2022	Dry dry	7.62



# Log of Borehole 6

Project No. BRM-22002697-B0

Drawing No. 7

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 8, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

Datum: Geodetic

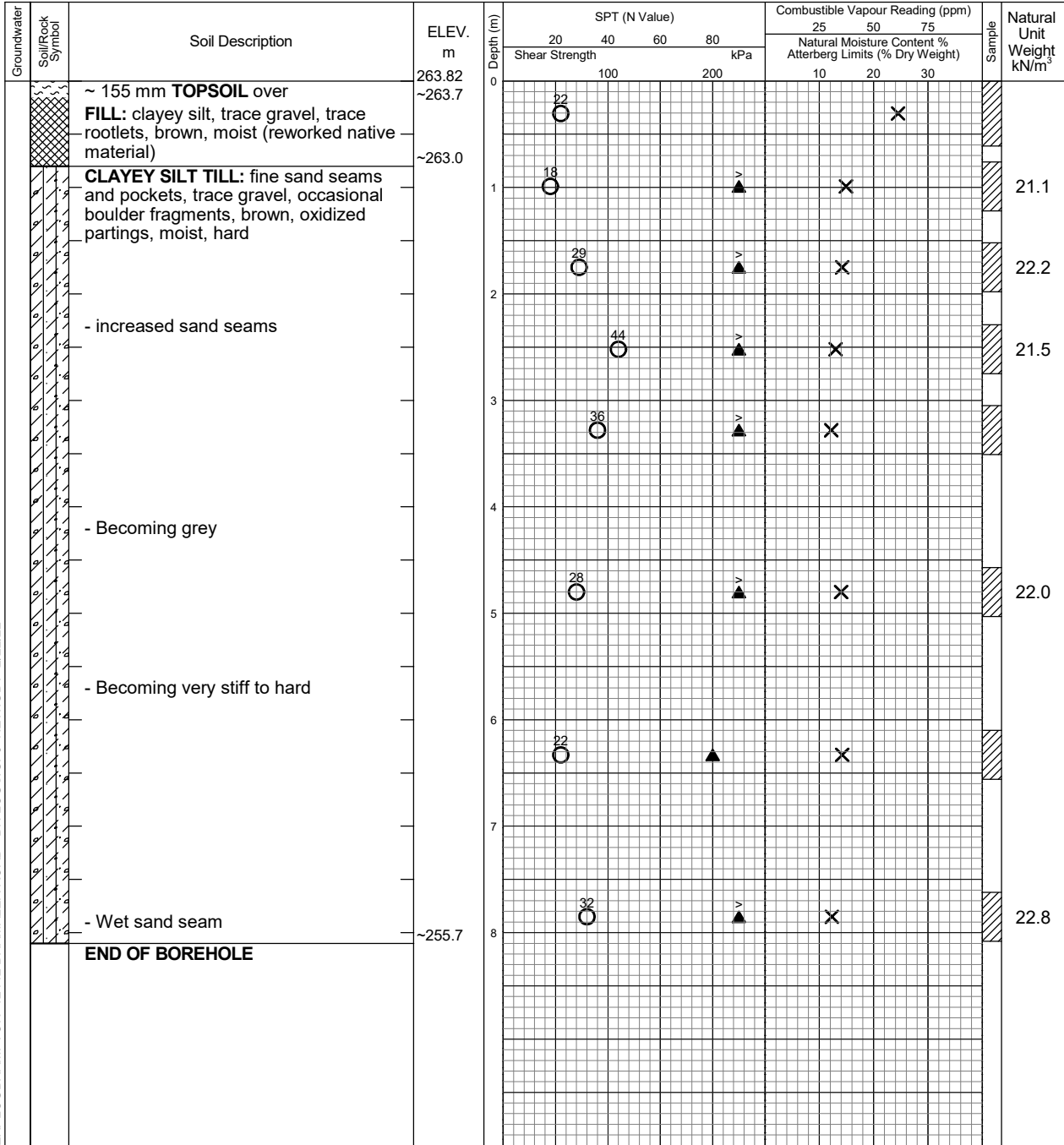
Shelby Tube

Undrained Triaxial at

Field Vane Test

% Strain at Failure

Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	6.71	7.62





# Log of Borehole 7

Project No. BRM-22002697-B0

Drawing No. 8

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 9, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

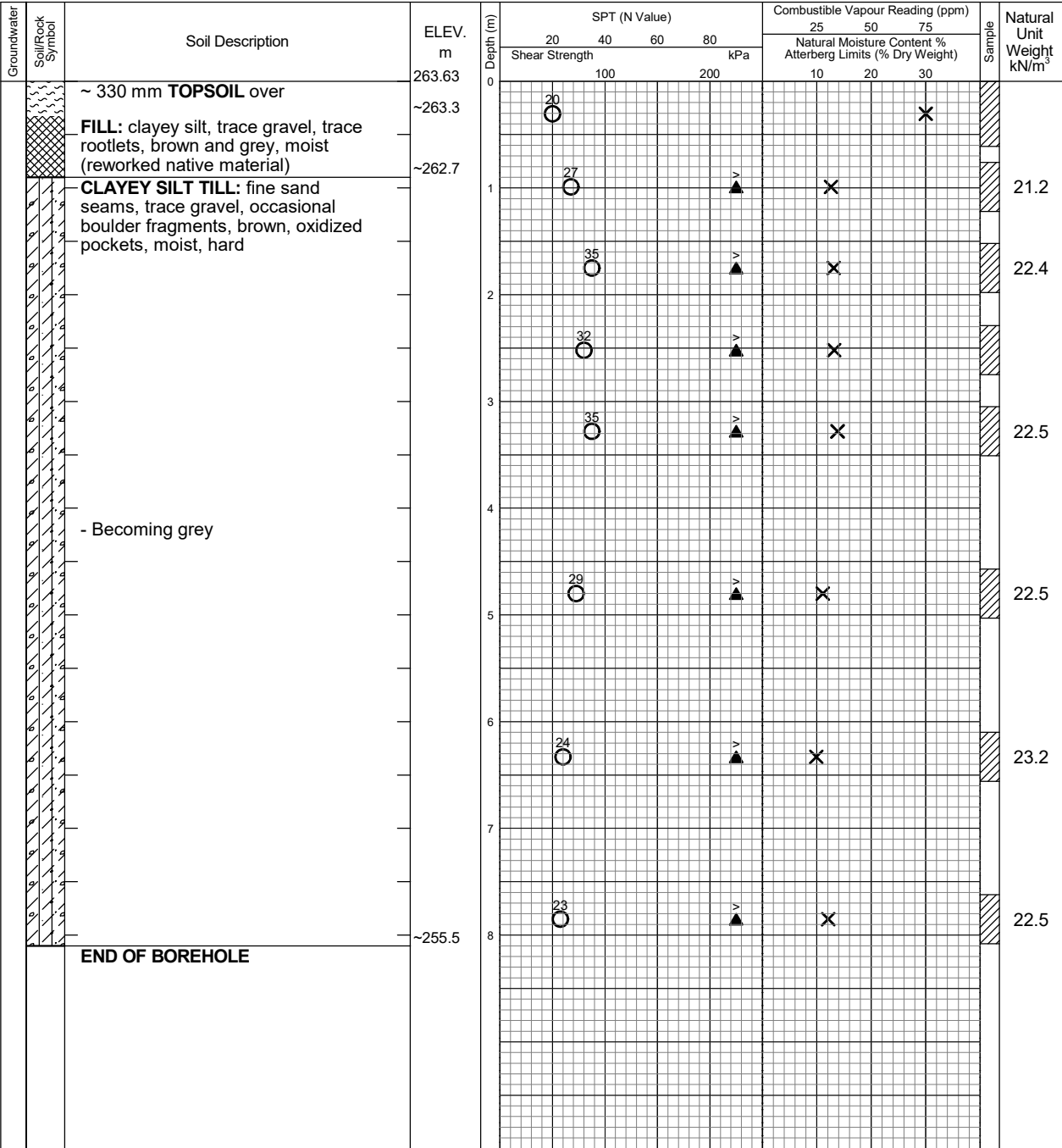
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 8

Project No. BRM-22002697-B0

Drawing No. 9

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 9, 2022

Auger Sample



Combustible Vapour Reading



SPT (N) Value



Natural Moisture



Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test



Plastic and Liquid Limit



Datum: Geodetic

Shelby Tube



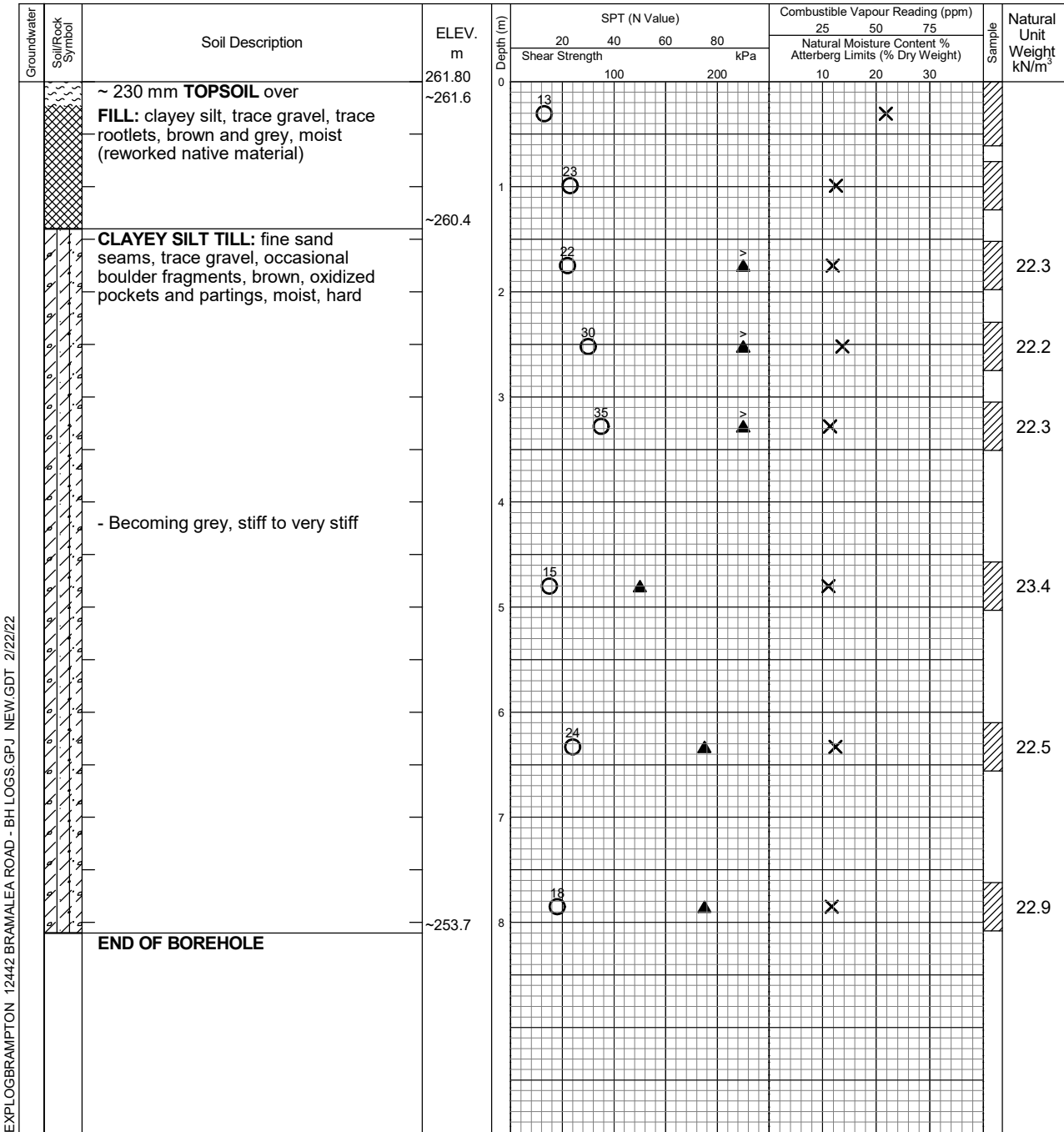
Undrained Triaxial at % Strain at Failure



Field Vane Test



Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 9

Project No. BRM-22002697-B0

Drawing No. 10

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 9, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

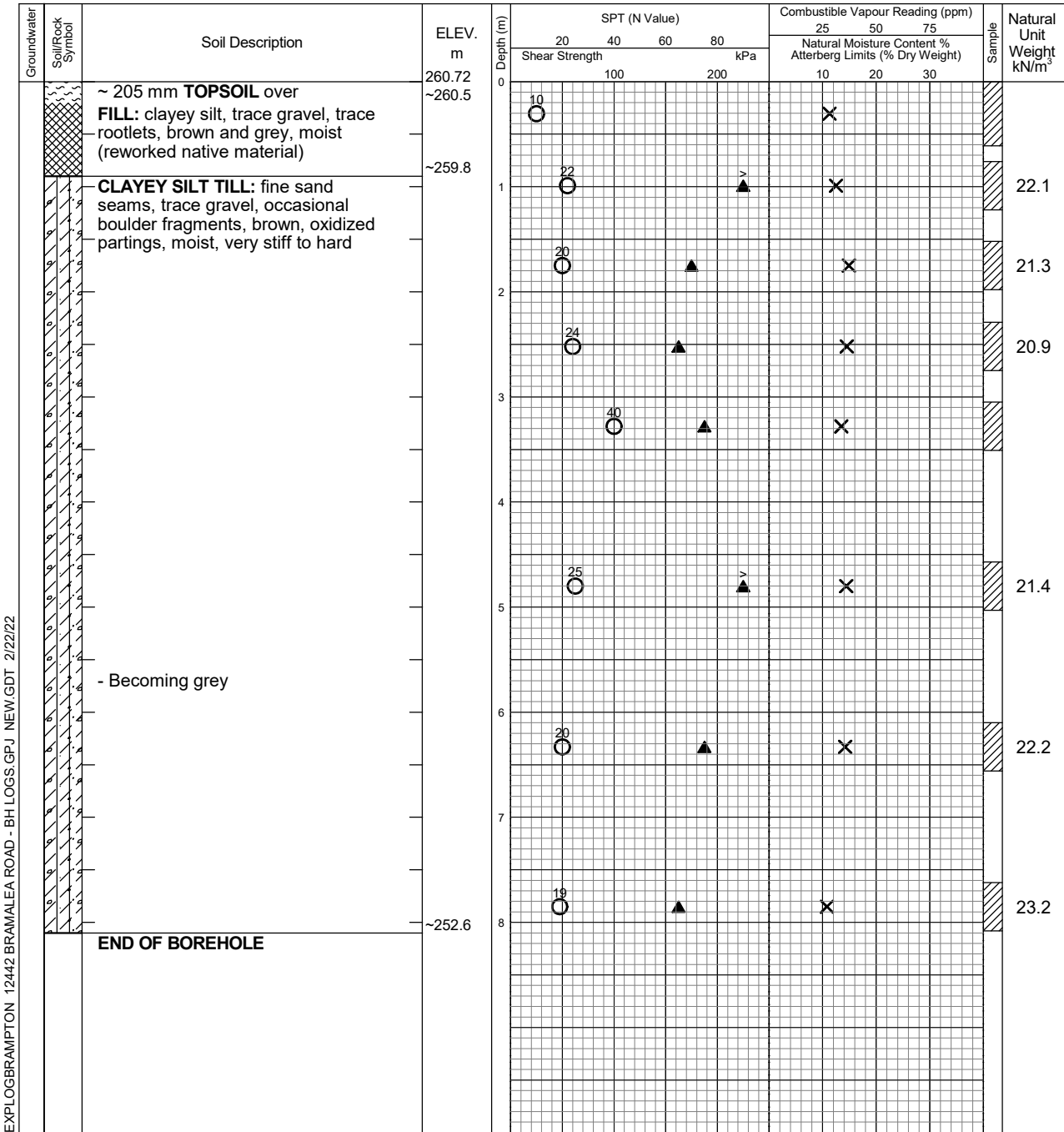
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 10

Project No. BRM-22002697-B0

Drawing No. 11

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 7, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

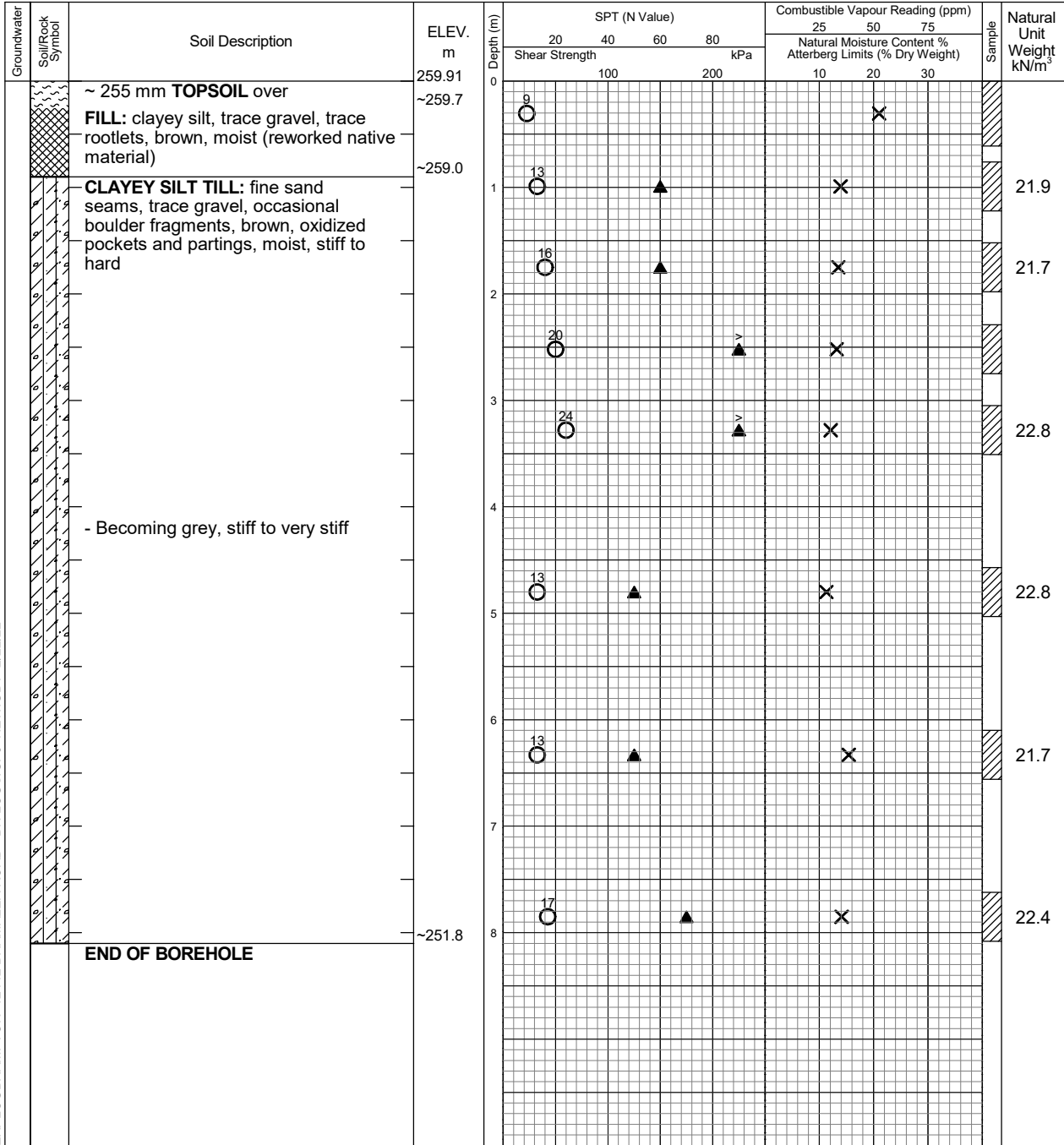
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62





# Log of Borehole 11

Project No. BRM-22002697-B0

Drawing No. 12

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 8, 2022

Auger Sample



Combustible Vapour Reading



SPT (N) Value



Natural Moisture



Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test



Plastic and Liquid Limit



Datum: Geodetic

Shelby Tube



Undrained Triaxial at



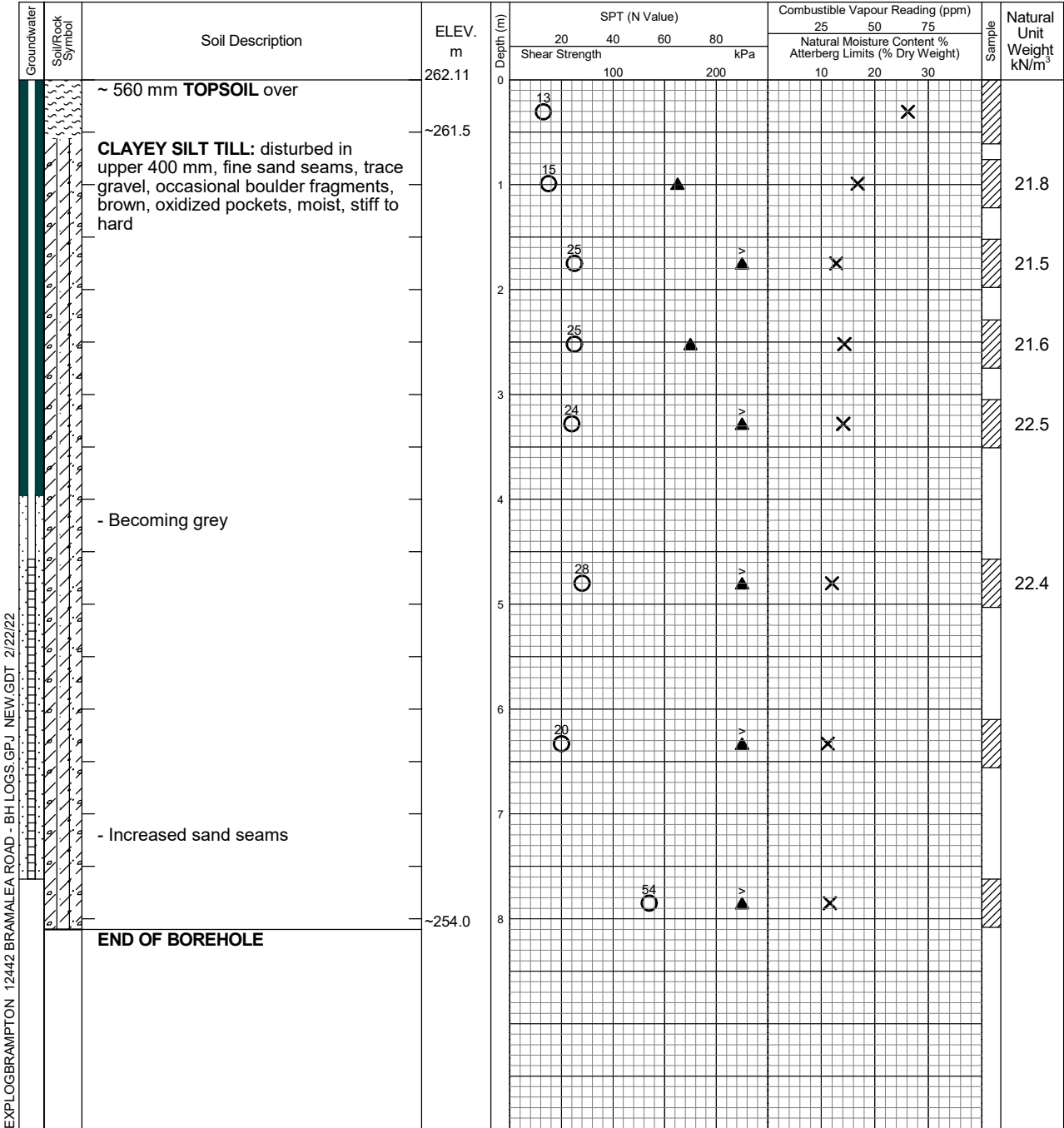
Field Vane Test



% Strain at Failure



Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion February 22, 2022	Dry 1.79	7.62



# Log of Borehole 12

Project No. BRM-22002697-B0

Drawing No. 13

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 9, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

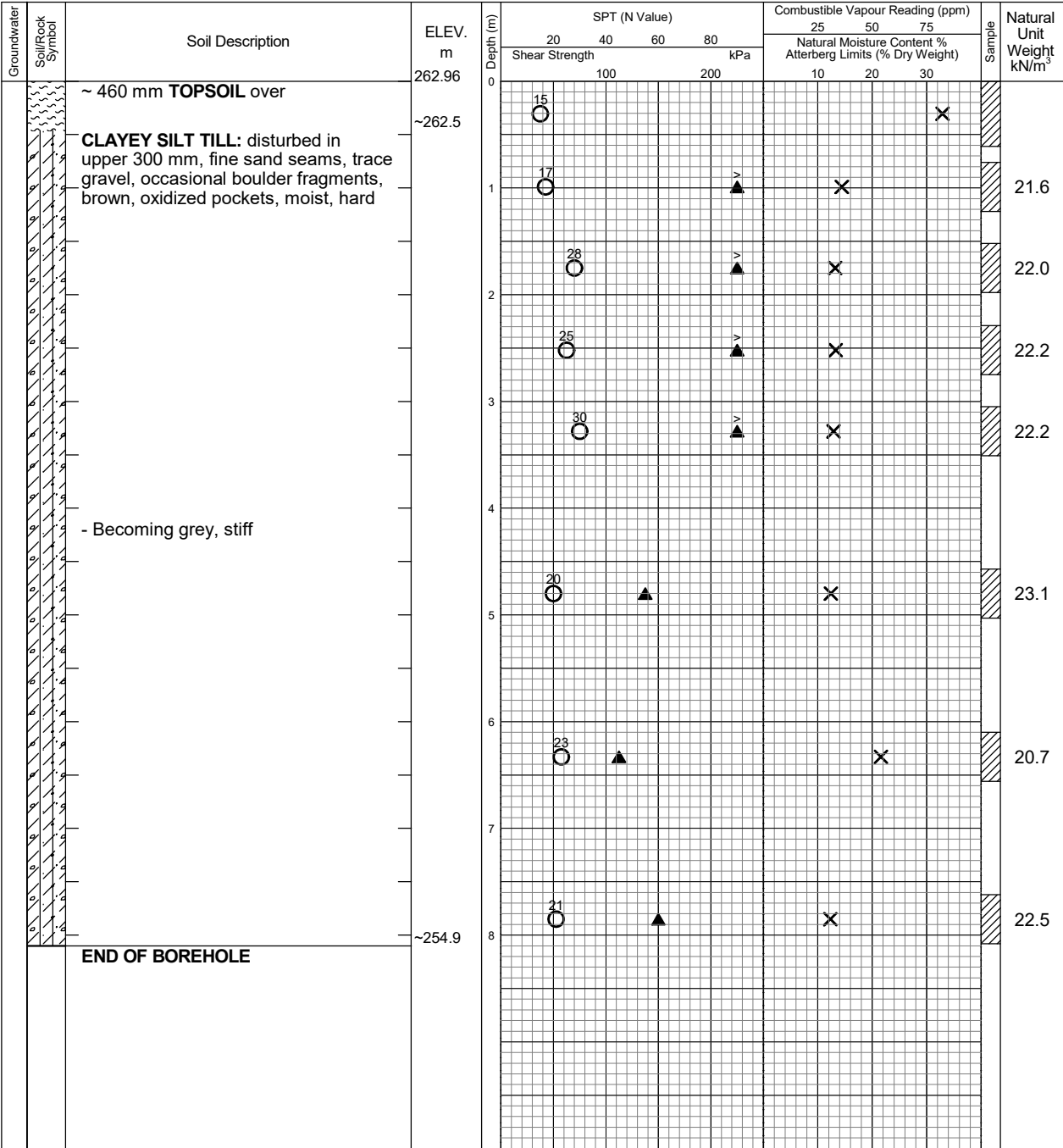
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 13

Project No. BRM-22002697-B0

Drawing No. 14

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 10, 2022

Auger Sample



Combustible Vapour Reading



SPT (N) Value



Natural Moisture



Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test



Plastic and Liquid Limit



Datum: Geodetic

Shelby Tube



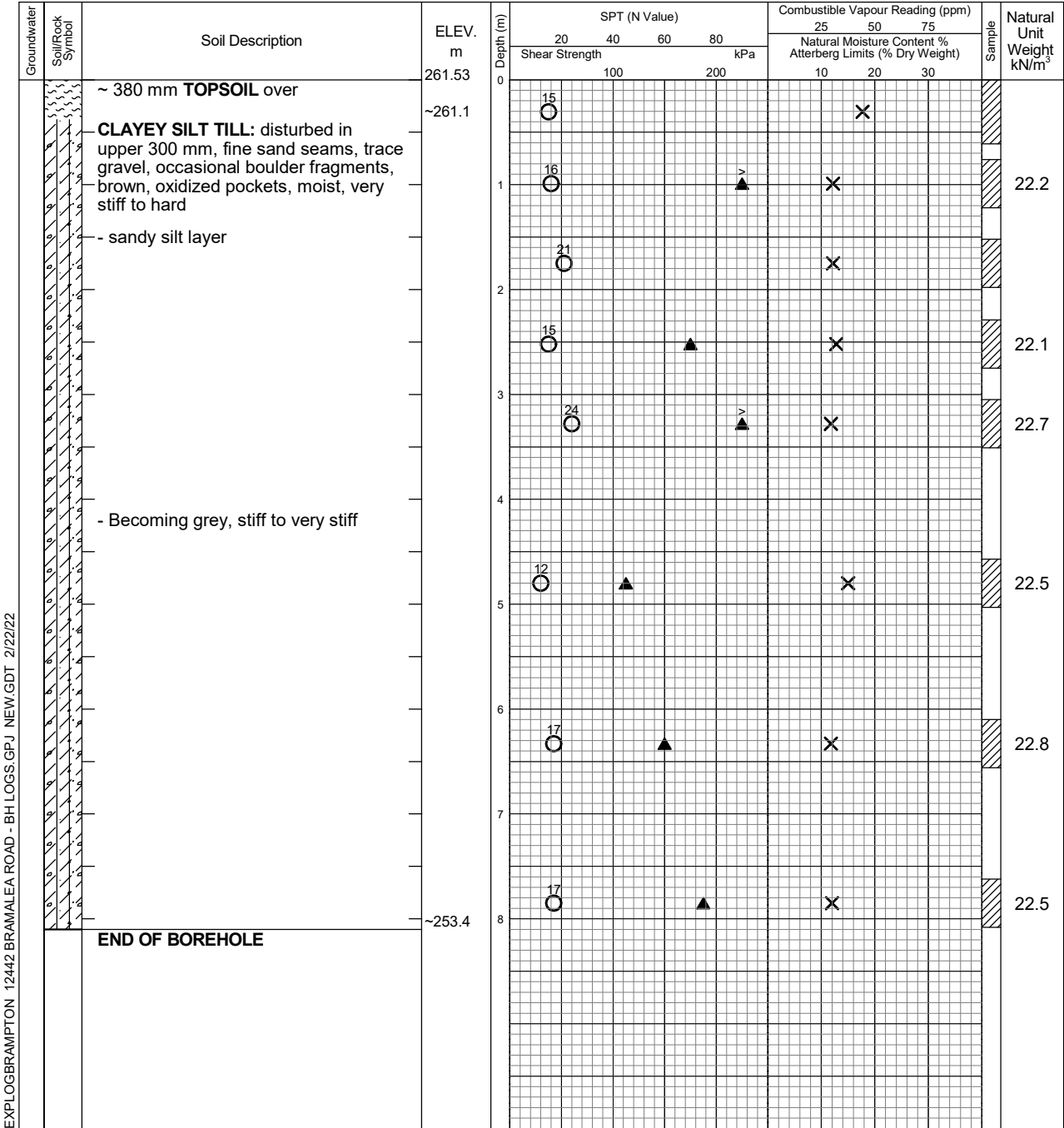
Undrained Triaxial at % Strain at Failure



Field Vane Test



Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



# Log of Borehole 14

Project No. BRM-22002697-B0

Drawing No. 15

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 10, 2022

Auger Sample



Combustible Vapour Reading



SPT (N) Value



Natural Moisture



Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test



Plastic and Liquid Limit



Datum: Geodetic

Shelby Tube



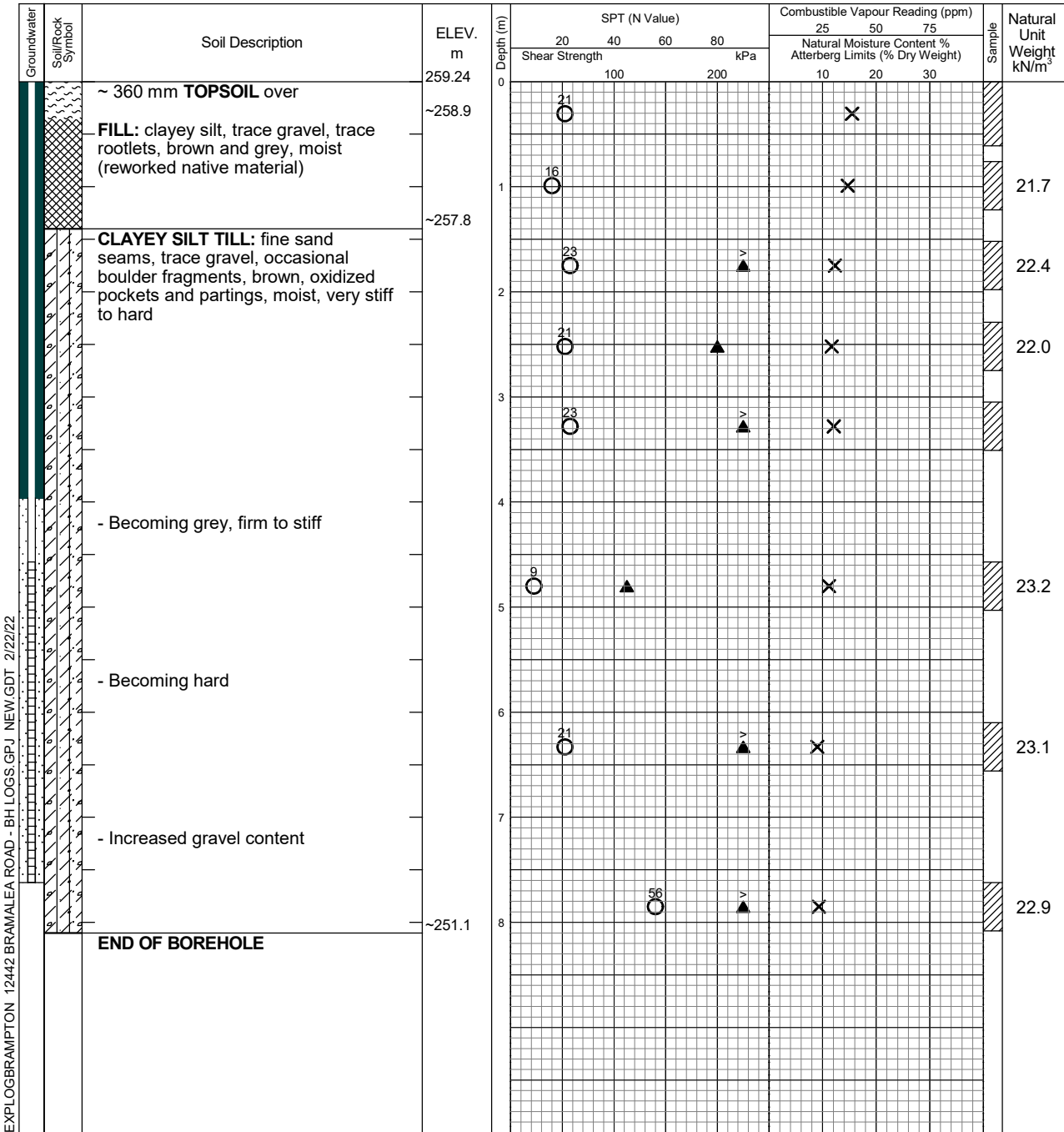
Undrained Triaxial at % Strain at Failure



Field Vane Test



Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion February 22, 2022	Dry 2.13	7.62





# Log of Borehole 15

Project No. BRM-22002697-B0

Drawing No. 16

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 12442 Bramalea Road, Caledon, Ontario

Date Drilled: Feb 10, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: D50 Solid Auger Bomb

Dynamic Cone Test

Plastic and Liquid Limit

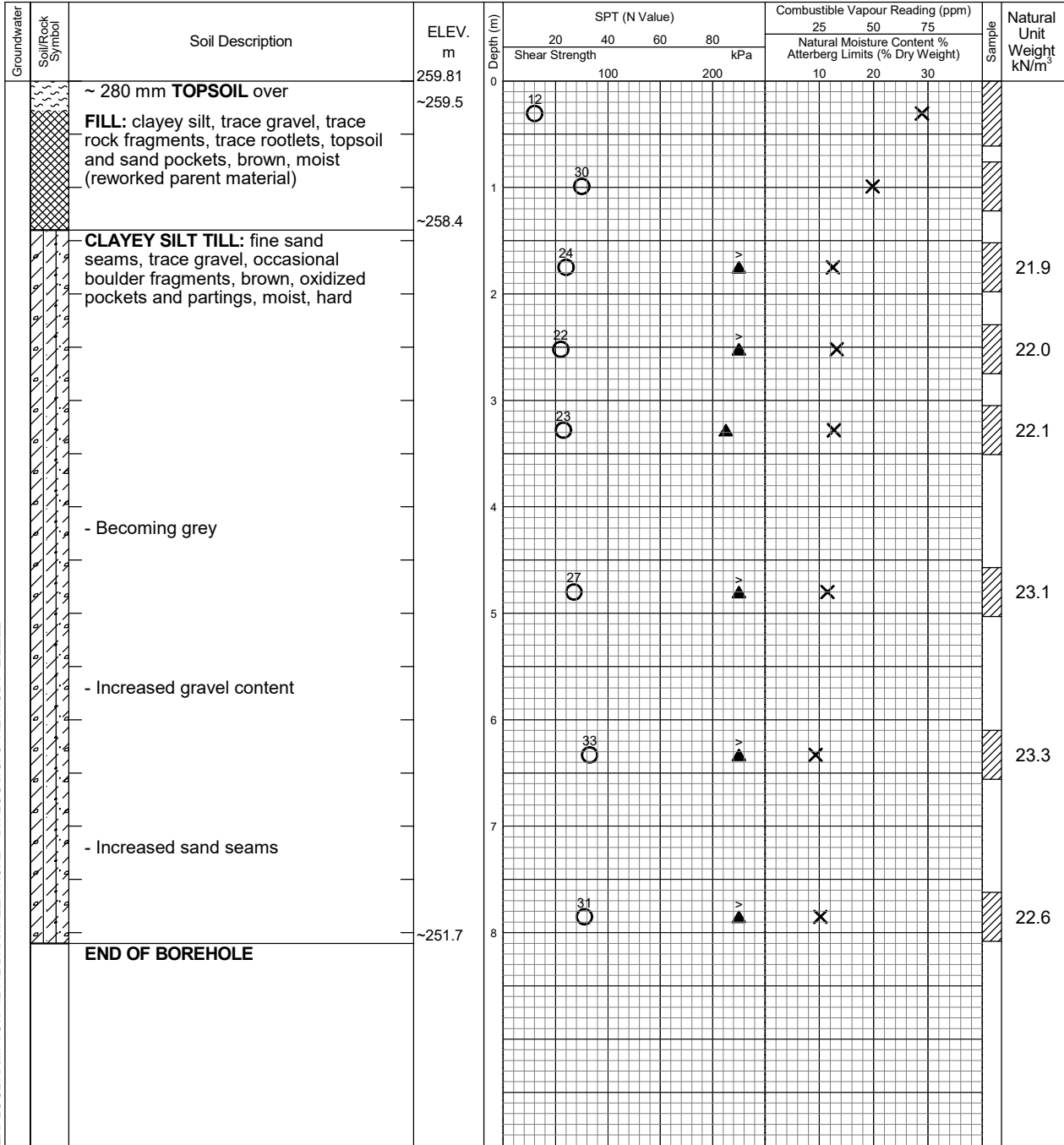
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

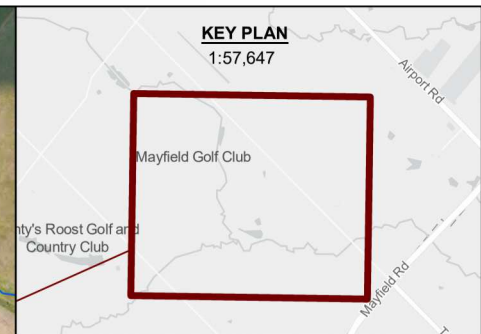
Penetrometer



EXPLOGBRAMPTON 12442 BRAMALEA ROAD - BH LOGS.GPJ NEW.GDT 2/22/22

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	7.62



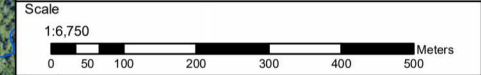


**Legend**

- BH # — BOREHOLE ID (DEEP - D; SHALLOW - S)
- ◆ APPROXIMATE BOREHOLE LOCATION
- ⊕ APPROXIMATE MONITORING WELL (MW) LOCATION
- ⊕ APPROXIMATE MONITORING WELL NEST (MW NEST) LOCATION
- ⊕ APPROXIMATE ENVIRONMENTAL (E) MONITORING WELL LOCATION
- ▲ APPROXIMATE DRIVE-POINT PIEZOMETER & STAFF GAUGE (DP/SG) LOCATION
- ◆ APPROXIMATE MONITORING WELL LOCATION (GEMTEC, 2022)
- ◆ APPROXIMATE BOREHOLE LOCATION (GEMTEC, 2022)
- ▭ APPROXIMATE MAYFIELD GOLF COURSE LANDS BOUNDARY
- ▭ APPROXIMATE SOUTH LANDS BOUNDARY

**NOTES:**

1. Coordinate system: NAD83/ UTM zone 17N.
2. Geographic dataset source: Ontario GeoHub.
3. Contains information licensed under the Open Government Licence – Ontario.
4. Parcel information obtained through the Ministry of Natural Resources and Forestry



Drawing: BOREHOLE, MONITORING WELL, STAFF GAUGE, AND DRIVE POINT PIEZOMETER LOCATION PLAN

Client: MAYFIELD GOLF COURSE INC.

Project: MAYFIELD GOLF COURSE REDEVELOPMENT  
12552 AND 12580 TORBRAM ROAD  
CALEDON, ONTARIO

Drwn By:	S.J.	Chkd By:	A.W.
Project No.	101987.001	Revision No.	0
Date	JUNE 2023	<b>FIGURE: 1</b>	

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ottawa@gemtec.ca



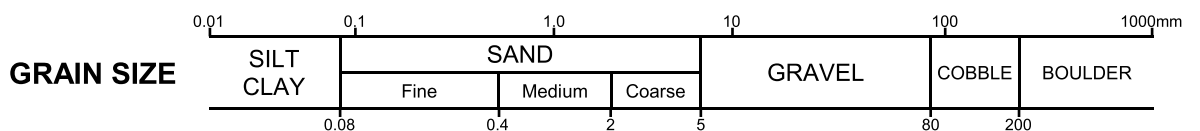
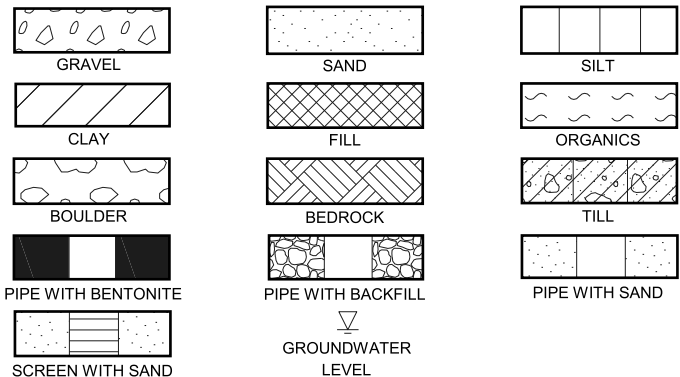
# ABBREVIATIONS AND TERMINOLOGY USED ON RECORDS OF BOREHOLES AND TEST PITS

SAMPLE TYPES	
AS	Auger sample
CA	Casing sample
CS	Chunk sample
BS	Borros piston sample
GS	Grab sample
MS	Manual sample
RC	Rock core
SS	Split spoon sampler
ST	Slotted tube
TO	Thin-walled open shelby tube
TP	Thin-walled piston shelby tube
WS	Wash sample

SOIL TESTS	
w	Water content
PL, $w_p$	Plastic limit
LL, $w_L$	Liquid limit
C	Consolidation (oedometer) test
$D_R$	Relative density
DS	Direct shear test
$G_s$	Specific gravity
M	Sieve analysis for particle size
MH	Combined sieve and hydrometer (H) analysis
MPC	Modified Proctor compaction test
SPC	Standard Proctor compaction test
OC	Organic content test
UC	Unconfined compression test
$\gamma$	Unit weight

PENETRATION RESISTANCE	
<p><b>Standard Penetration Resistance, N</b> The number of blows by a 63.5 kg (140 lb) hammer dropped 760 millimetres (30 in.) required to drive a 50 mm split spoon sampler for a distance of 300 mm (12 in.). For split spoon samples where less than 300 mm of penetration was achieved, the number of blows is reported over the sampler penetration in mm.</p>	
<p><b>Dynamic Penetration Resistance</b> The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) to drive a 50 mm (2 in.) diameter 60° cone attached to 'A' size drill rods for a distance of 300 mm (12 in.).</p>	
WH	Sampler advanced by static weight of hammer and drill rods
WR	Sampler advanced by static weight of drill rods
PH	Sampler advanced by hydraulic pressure from drill rig
PM	Sampler advanced by manual pressure

COHESIONLESS SOIL Compactness		COHESIVE SOIL Consistency	
SPT N-Values	Description	$C_u$ , kPa	Description
0-4	Very Loose	0-12	Very Soft
4-10	Loose	12-25	Soft
10-30	Compact	25-50	Firm
30-50	Dense	50-100	Stiff
>50	Very Dense	100-200	Very Stiff
		>200	Hard



## DESCRIPTIVE TERMINOLOGY

(Based on the CANFEM 4th Edition)

TRACE	SOME	ADJECTIVE	noun > 35% and main fraction
trace clay, etc	some gravel, etc.	silty, etc.	sand and gravel, etc.

# RECORD OF BOREHOLE BH23-1

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 22 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		257.98									
		TOPSOIL		257.68									
		FILL - (CL) SILTY CLAY, trace sand, trace organics; dark brown, cohesive, w>PL, firm to stiff		0.30	1	SS	356	7	●	○			
1									●	○			
		(CL) SILTY CLAY, trace sand, trace gravel; grey; cohesive, w~PL to w>PL, very stiff		1.37	2	SS	305	11					
2									○	●			
		(CL) sandy SILTY CLAY, trace gravel; brown (TILL); cohesive, w<PL to w~PL, hard		2.13	3	SS	457	20					
3									○				
4										●			
5								○		●			
6		(CL) SILTY CLAY, trace sand; grey; cohesive, w~PL to w>PL, very stiff		4.04	4	SS	457	54					
7													
		(ML) SILT, slight plasticity, trace sand; grey (TILL); non-cohesive, moist, very dense		5.56	5	SS	457	56					
8								○		●			
9													
10													
11													
12													
13													
14													
		End of Borehole		8.08	6	SS	457	87	○		●		
		Notes:											
		1. Borehole dry upon completion of drilling.											
		2. Piezometer installed as shown upon completion of drilling.											
		3. Groundwater level measured in installed monitoring well on May 18, 2023 at a height of about 0.6 m above the ground surface.											

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	-0.6	258.5



# RECORD OF BOREHOLE BH23-2

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 22 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED			WATER CONTENT, % Wp — W — Wl
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		256.42									Monument ▽	
		FILL - (CL) SILTY CLAY, some sand, trace gravel; brown and grey, organic inclusions, rootlets, oxidative staining; cohesive, w~PL, stiff			1	SS	457	10	●					
1		(CL) SILTY CLAY, some sand, trace gravel; brown; cohesive, w>PL, stiff to very stiff		255.51 0.91	2	SS	457	33	○	●				
2					3	SS	457	11	●	○				
3		(CL-ML) Sandy SILTY CLAY to CLAYEY SILT, trace to some gravel; brown to grey, rock fragments (TILL); cohesive, w<PL, hard		253.52 2.90	4	SS	457	18	●					
4					5	SS	457	45	○	●				
5					6	SS	152	98	○					MH
6		(ML) SILT, trace sand, trace plastic fines; grey; non-cohesive, wet,		250.86 5.56	7A	SS	457	76	○					
7		(SM) SILTY SAND, some gravel, trace plastic fines; grey (TILL); non-cohesive, wet, very dense		250.07 6.35	7B	SS			○	○				
8					8	SS	127	50/0.3	○					
9				9	SS	76	50/0.3	○						
10	(ML) sandy SILT, trace plastic fines; grey; non-cohesive, wet, very dense		246.48 9.94											
11				10	SS	125	50/0.3	○				MH		
12														
13														
14														

Notes:  
 1. Groundwater level measured in open borehole at approximately 10.1 m below ground surface upon completion of drilling.  
 2. Piezometer installed as shown upon completion of drilling.  
 3. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 1.2 m below ground surface.

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	1.2 ▽	255.3

GEO - BOREHOLE LOG 101987.001:20230602.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-3

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 22 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED			WATER CONTENT, % Wp   W   Wl
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		255.54										
0.5		FILL - (CL) SILTY CLAY, trace sand, trace gravel; dark brown, trace organics; cohesive, w>PL, firm			1	SS	457	5	●					
1.0		- Organics/topsoil encountered between approximately 0.9 m and 1.2 m depths.			2	SS	457	8	●	○				
1.5		(CL) SILTY CLAY, some sand to sandy, trace gravel; brown; cohesive, w<PL to w=PL, stiff to hard		253.92	3A	SS				○				
2.0				1.62	3B	SS	457	13	●	○				
2.5					4	SS	457	33		○	●			
3.0					5	SS	457	44		○	●			
4.0		(SM) SILTY SAND, some gravel to gravelly; grey; non-cohesive, moist to wet, very dense		251.50	6	SS	457	50/0.3		○				
4.04			4.04											
5.0				7	SS	254	50/0.08		○					
6.0														
7.0														
8.0		- Wet below 7.6 m depth		8	SS	457	79		○		●			
8.08		- Rock fragments between 7.6 m and 8.1 m.												
8.08		End of Borehole												
9.0		Notes:												
9.5		1. Groundwater level measured in open borehole at approximately 7.3 m below ground surface prior to backfilling.												
10.0		2. Borehole caved to approximately 7.3 m depth.												
10.5		3. Borehole backfilled with bentonite and soil cuttings upon completion of drilling.												
11.0														
12.0														
13.0														
14.0														

GEO - BOREHOLE LOG - 101987.001/2023/06/02.GPJ - GEMTEC 2018.GDT - 6/2/23




LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-4

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 20 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		258.00									Monument  Bentonite Filter sand 50mm dia. well screen
0.5		FILL - (CL) SILTY CLAY, trace to some sand, trace gravel; brown, rootlets; cohesive, w>PL, firm to stiff			1	SS	203	7	●				
1					2	SS	203	7	●	○			
1.5					3	SS	457	14	●	○			
2		(OL) ORGANIC SILTY CLAY, trace sand; dark grey; cohesive, w~PL, stiff		256.12 1.88									
2.5					4	SS	457	11	●	○			
3					5	SS	254	10	●	○			
4		(CL) SILTY CLAY, trace sand, trace gravel; brown; cohesive, w~PL, hard		253.96 4.04									
4.5				6	SS	457	51	○		●			
5				7	SS	457	38		○	●			
6				8	SS	203	29	○		●			
7		(CL-ML) SILTY CLAY to CLAYEY SILT and SAND, some gravel; grey (TILL), cohesive, w~PL, very stiff		250.91 7.09									
8			249.92 8.08										
8	End of Borehole												
9		Notes:											
10		1. Groundwater level measured in open borehole at approximately 7.6 m below ground surface upon completion of drilling.											
11		2. Piezometer installed as shown upon completion of drilling.											
12		3. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 3.8 m below ground surface.											
13													
14													

GEO - BOREHOLE LOG - 101987.001/2023/06/02.GPJ - GEMTEC, 2018.GDT - 6/2/23



LOGGED: AS  
 CHECKED: DMF

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	3.8	254.2

# RECORD OF BOREHOLE BH23-5

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 21 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	WATER CONTENT, % Wp   W   Wl	+ NATURAL ⊕ REMOULDED		
0		Ground Surface		257.83										
		FILL - (CL) SILTY CLAY, some sand; brown, organic inclusions; cohesive, w>PL, firm			1	SS	305	6	●					
1					2	SS	152	6	●	○				
2					3	SS	203	8	●	○				
		(OL) ORGANIC SILTY CLAY, trace sand; dark grey; cohesive, w~PL, stiff		255.70 2.13	4A	SS	305	15	●	○				
				254.93 2.90	4B	SS				○				
3		(CL) SILTY CLAY, some sand, trace gravel; brown; cohesive, w<PL, hard			5	SS	457	37		○	●			
4				253.79 4.04										
		(CL) sandy SILTY CLAY, some gravel; brown (TILL); cohesive, w<PL, hard			6	SS	457	55		○	●			
5					7	SS	457	49		○	●			
6														
7				250.74 7.09										
		(CL) SILTY CLAY; trace to some sand, trace to some gravel; grey; cohesive, w~PL to w<PL, hard			8	SS	457	50/0	○					
8		- Auger grinding at about 7.6 m depth												
9					9	SS	457	44		○	●			
10														
		- Inferred bedrock (highly weathered shale) at 10.7 m depth		247.13 10.70	10	SS	25	50/0	○					
11		End of Borehole												
12		Notes: 1. Borehole dry upon completion of drilling. 2. Piezometer installed as shown upon completion of drilling. 3. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 3.0 m below ground surface.												
13														
14														

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	3.0	254.9






# RECORD OF BOREHOLE BH23-6D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD28  
 BORING DATE: Mar 20 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED		
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		256.73									 <p>Monument</p> <p style="text-align: center;">▽</p> <p>Bentonite</p> <p style="text-align: center;">MH</p> <p>Filter sand</p> <p>50mm dia. well screen</p>
		TOPSOIL		0.05	1	SS	203	7	●				
		FILL - (CL) SILTY CLAY, some sand; brown, rootlets; cohesive, w>PL, firm to stiff											
1					2	SS	203	4	●	○			
2			FILL - (SM) SILTY SAND, trace gravel, trace plastic fines; dark brown to grey, organic inclusions, non-cohesive, moist, compact		254.85	3A	SS	254	12	●	○		
					1.88	3B	SS						
						4	SS	305	24	○	●		
3			(CL) SILTY CLAY, some sand, mottled; brown and grey; cohesive, w>PL to w>PL, very stiff		253.83	5	SS	457	18	●	○		
					2.90								
4			(CL) Gravelly sandy SILTY CLAY, brown to grey; rock fragments (TILL); cohesive, w<PL to w~PL, hard		252.69	6	SS	457	40	○	●		
				4.04									
5													
6													
7		- Grey below about 6.1 m depth - Silty clay seam / layer between approximately 6.1 m and 6.6 m depths			7	SS	457	49	○	●			
8					8	SS	406	65/0.25	○	—			
9		(ML) Gravelly sandy SILT, trace plastic fines; grey, rock fragments; non-cohesive, moist to wet, very dense		248.14	9	SS	254	50/0.08	○				
				8.59									
10													
11					10	SS	254	50/0.1	○				
12													
13		End of Borehole		244.26	11	SS	305	50/0.3	○				
				12.47									
14		Notes: 1. Groundwater level measured in open borehole at approximately 11.9 m below ground surface upon completion of drilling.											

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23

# RECORD OF BOREHOLE BH23-6D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD28  
 BORING DATE: Mar 20 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m		WATER CONTENT, %			
10	20			30					40	50	60	70	80	90
14														
15		2. Piezometers installed as shown upon completion of drilling. Shallow piezometer installed in second borehole drilled within approximately 2 m of initial installation.  3. Groundwater levels measured in the installed monitoring well on May 18, 2023 at a depth of about 4.0 m below ground surface.												
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	4.0	▽ 252.8

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC.2018.GDT 6/2/23



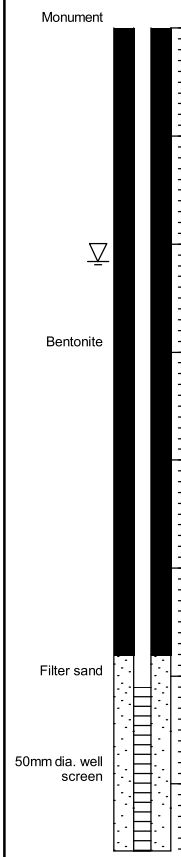
LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-6S

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 20 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0		Ground Surface		256.66									
		TOPSOIL		0.05									
		FILL - (CL) SILTY CLAY, some sand; brown, rootlets; cohesive, w>PL, firm to stiff			1	SS	203	7	●				
1					2	SS	203	4	●	○			
				254.78	3A	SS	254	12	●	○			
2		FILL - (SM) SILTY SAND, trace gravel, trace plastic fines; dark brown to grey, organic inclusions, non-cohesive, moist, compact		1.88	3B	SS				○			
					4	SS	305	24		○	●		
				253.76									
3		(CL) SILTY CLAY, some sand, mottled; brown and grey; cohesive, w~PL to w>PL, very stiff		2.90	5	SS	457	18		○	●		
4				252.62									
		(CL) Gravelly sandy SILTY CLAY, brown to grey; rock fragments (TILL); cohesive, w<PL to w~PL, hard		4.04	6	SS	457	40		○	●		
5													
6		- Grey below about 6.1 m depth			7	SS	457	49		○	●		
7		- Silty clay seam / layer between approximately 6.1 m and 6.6 m depths											
8		End of Borehole		249.04									
		Notes:		7.62									
9		1. Piezometers installed as shown upon upon completion of drilling.											
10		2. Groundwater levels measured in the installed monitoring well on May 18, 2023 at a depth of about 2.1 m below ground surface.											
11		3. Subsurface descriptions based on borehole BH23-6D.											
12													
13													
14													



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	2.1	254.5

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23




LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-7

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 10 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		251.92									 <p>Monument Concrete</p> <p>Bentonite</p> <p>Filter sand</p> <p>50mm dia. well screen</p>
		TOPSOIL		251.74									
		(CL) sandy SILTY CLAY, trace gravel; brown; cohesive, w>PL, stiff		251.31	1	SS	279	9	●	○			
1		(CL) sandy SILTY CLAY, trace gravel; brown, oxidative staining, (TILL); cohesive, w~PL to w>PL, hard		251.31	2	SS	305	35	○	●			
2				251.31	3	SS	432	39	○	●			
3				248.01	4	SS	457	23	●				
4		- Auger grinding at about 3.1 m depth		248.01	5	SS	457	30/0.0	○				
5		(SM) SILTY SAND, trace to some gravel, trace plastic fines; brown to grey; non-cohesive, moist to wet, very dense		248.01	6	SS	356	50/0.08	○				
6			245.00	7	SS	127	50/0.3	○					
7	- Gravelly and wet from approximately 6.1 m to 6.3 m depths		245.00										
8		(SP) gravelly SAND, some non-plastic fines; grey; non-cohesive, wet, very dense		244.02	8	SS	432	50/0.3	○				
8		End of Borehole		244.02									
9		Notes:											
10		1. Groundwater level measured in open borehole at approximately 4.4 m below ground surface upon completion of drilling.											
11		2. Piezometer installed as shown upon completion of drilling.											
12		3. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 1.5 m below ground surface.											
13													
14													

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: IO  
 CHECKED: DMF







GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	1.5	250.5



# RECORD OF BOREHOLE BH23-8

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 21 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	± NATURAL ⊕ REMOULDED		
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		253.06									 <p style="text-align: center;">Monument</p> <p style="text-align: center;">Bentonite</p> <p style="text-align: center;">Filter sand</p> <p style="text-align: center;">50mm dia. well screen</p>
		TOPSOIL		252.81									
		(CL) SILTY CLAY, trace to some sand, trace gravel; brown, oxidative staining; cohesive, w~PL to w>PL, firm to hard		0.25	1	SS	203	5	●				
1					2	SS	457	21	○	●			
					3	SS	457	37	○	●			
2				250.93									
			(CL) SILTY CLAY, some sand to sandy, trace gravel; brown, rock fragments (TILL); cohesive, w<PL to w~PL, hard		2.13	4	SS	457	45	○	●		
					5	SS	457	44	○	●			
4				249.02									
			(SM) SILTY SAND, some gravel, trace plastic fines; grey (TILL); non-cohesive, moist, dense		4.04	6	SS	457	38	○	●		
					7	SS	127	50/0.3	○	●			
7				245.74									
			- Inferred cobbles/boulders or bedrock at about 7.3 m depth End of Borehole		7.32								
8			Notes:										
9		1. Borehole was terminated at 7.3 m due to assumed bedrock contact.											
10		2. Borehole was dry and open upon completion of drilling.											
11		3. Piezometer installed as shown upon completion of drilling.											
12		4. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 3.4 m below ground surface.											
13													
14													

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

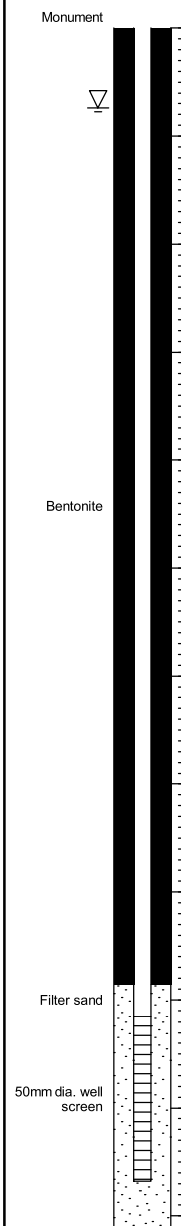
GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	3.4	249.7

# RECORD OF BOREHOLE BH23-9

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 8 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED		
0		Ground Surface		254.29									
		TOPSOIL		254.04	1A	SS	457	8	●				
		(CL) SILTY CLAY, trace sand; brown, oxidative staining; cohesive, w>PL, firm to very stiff		0.25	1B	SS			○				
1					2	SS	305	28	○	●			
		(CL) sandy SILTY CLAY, trace to some gravel; brown, oxidative staining (TILL); cohesive, w<PL to w~PL, very stiff to hard		252.92	3	SS	457	26	○	●			
2				1.37	4	SS	457	66	○		●		
3					5	SS	457	51	○		●		
4		(SM) gravelly SILTY SAND; grey, rock fragments; non-cohesive, moist, dense		250.25	6	SS	457	43	○		●		
5				4.04	7	SS	457	90	○			●	
6		(ML) SILT, slight plasticity, trace sand; grey; non-cohesive, moist to wet, compact to very dense		249.31	8	SS	457	46	○		●		
7				4.98	9	SS	457	16	○	●			
8					10	SS	457	28	○	●			
9													
10		- Wet below about 9.1 m depth											
11		End of Borehole		243.16									
12		Notes:		11.13									
13		1. Groundwater level measured in open borehole at approximately 10.8 m below ground surface upon completion of drilling.											
14		2. Piezometer installed as shown upon completion of drilling.											
		3. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 0.7 m below ground surface.											



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	0.7	253.6

GEO - BOREHOLE LOG 101987.001:20230602.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-10D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD28  
 BORING DATE: Mar 9 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED			WATER CONTENT, % W <sub>p</sub>   W   W <sub>L</sub>
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		252.82									Monument	
		TOPSOIL		252.51	1	SS	457	6	●					
1		(CL) SILTY CLAY, trace sand, trace gravel; brown, rootlets; cohesive, w>PL, firm to very stiff		250.69	2	SS	457	17	●					
2				250.69	3	SS	457	27	●					
3		(CL) sandy SILTY CLAY, some gravel; brown, oxidative staining (TILL); cohesive, w<PL to w~PL, hard		248.78	4	SS	457	38	●					
4				248.78	5	SS	457	41	●					
5		(ML) sandy SILT, some gravel; brown, oxidative staining (TILL); non-cohesive, moist, very dense		247.26	6	SS	457	82/0.28	●					
6		(ML) SILT, slight plasticity, trace sand, trace to some plastic fines; grey; non-cohesive, moist to wet, dense to very dense		247.26	7	SS	457	42	●					
7					8	SS	457	70	●					
8					9	SS	457	33	●					
9					10	SS	457	32	●					
10				11	SS	457	55	●						
11				12	SS	457	32	●						
12		(GP-GM) Sandy SILTY GRAVEL; grey, (TILL) rock fragments; non-cohesive, wet, very dense		241.16										
13		End of Borehole		240.17	11	SS	457	55	●					
14		Notes: 1. Groundwater level measured in open borehole at approximately 6.7 m below ground surface on Mar 10, 2023, prior to		12.65										

GEO - BOREHOLE LOG 101987.001/20230602.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-10D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD28  
 BORING DATE: Mar 9 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m		WATER CONTENT, %			
10	20			30					40	50	60	70	80	90
14		piezometer installation.												
15		2. Piezometers installed as shown upon completion of drilling. Shallow piezometer installed in second borehole drilled within approximately 2 m of initial installation.												
16		3. Groundwater levels measured in the installed monitoring well on May 18, 2023 at a depth of about 3.7 m below ground surface.												
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	3.7	249.1

GEO - BOREHOLE LOG 101987.001:20230602.GPJ GEMTEC.2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

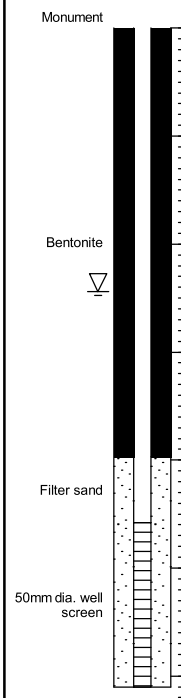


# RECORD OF BOREHOLE BH23-10S

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 9 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m		WATER CONTENT, %			
				10					20	30	40	50	60	70
0		Ground Surface TOPSOIL		252.93										
0.31		(CL) SILTY CLAY, trace sand, trace gravel; brown, rootlets; cohesive, w>PL, firm to very stiff		252.62	1	SS	457	6	●					
1				0.31	2	SS	457	17	○	●				
2				250.80	3	SS	457	27	○	●				
2.13		(CL) sandy SILTY CLAY, some gravel; brown, oxidative staining (TILL); cohesive, w<PL to w~PL, hard		250.80	4	SS	457	38	○	●				
3				248.89	5	SS	457	41	○	●				
4				248.89	6	SS	457	82/0.28	○	●				
5		(ML) sandy SILT, some gravel; brown, oxidative staining (TILL); non-cohesive, moist, very dense		248.89										
5.56		(ML) SILT, slight plasticity, trace sand, trace to some plastic fines; grey; non-cohesive, moist to wet, dense to very dense		247.37										
6		End of Borehole		246.83										
6.10		Notes: 1. Piezometers installed as shown upon completion of drilling. 2. Groundwater levels measured in the installed monitoring well on May 18, 2023 at a depth of about 2.6 m below ground surface. 3. Subsurface description based on borehole BH23-10D.		6.10										
7														
8														
9														
10														
11														
12														
13														
14														



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	2.6	250.5

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-11

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD28  
 BORING DATE: Mar 13 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED			WATER CONTENT, % Wp — W — Wl
0		Ground Surface TOPSOIL		245.98										
1	Power Auger Hollow Stem Auger (210mm OD)	(ML) SILT, trace to some sand, trace to some gravel, trace plastic fines; brown, mottling (TILL); non-cohesive, moist, compact to very dense		245.29 0.69	1	SS	203	7	●					
2							2	SS	406	21	○	●		
3				242.98 3.00										
4	Diamond Rotary Core HQ Casing	(GP/GM) sandy SILTY GRAVEL, some fines, cobbles and boulders; grey (TILL); non-cohesive, wet, very dense			RC 1	RC	1670							
5							RC 2	RC	508					
6	Power Auger Hollow Stem Auger (210mm OD)						6	SS	152	58/0.25	○			
7					7	SS	127	50/0.10	○					
8				238.18 7.80										
9	Diamond Rotary Core HQ Casing	Weathered to fresh, grey to dark grey, LIMESTONE and SHALE BEDROCK (GEORGIAN BAY FORMATION)			RC 3	RC	1499							
10							RC 4	RC	1092					
11				235.03 10.95										
12		End of Borehole  Notes: 1. Borehole started on Mar 13, 2023 and completed on Mar 14, 2023. 2. Sample 5 not shown due to 0 mm penetration. 3. Rock coring discontinued between approximately 5.2 m and 6.8 m depths due to subsurface conditions. 4. Water level not measured upon completion of drilling due to use of water during rock coring.			RC 5	RC	1600							
13														
14														

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-11

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD28  
 BORING DATE: Mar 13 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION			
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m		WATER CONTENT, %						
10	20			30					40	50	60	70	80	90			
14		5. Piezometer installed as shown upon completion of drilling.  6. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 0.5 m below ground surface.															
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28																	

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	0.5 ▽	245.5

GEO - BOREHOLE LOG - 101987.001\2023\06\02.GPJ - GEMTEC-2018.GDT - 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-12

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 15 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION														
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	NATURAL	REMOULDED			WATER CONTENT, %													
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface TOPSOIL		245.78	1	SS	152	4	●			MH															
1		(SM) SILTY SAND, some gravel to gravelly, trace plastic fines; brown to grey (TILL); non-cohesive, moist to wet, dense to very dense		245.09 0.69	2	SS	457	37	○	●																	
2		- Auger grinding at about 1.5 m and from approximately 2.1 m to 2.3 m depths			3	SS	457	43	○	●																	
3					4	SS	304	50/0.3	○																		
4					5	SS	76	50/0.3	○																		
5					6	SS	76	50/0.3	○																		
6					7	SS	101	50/0.3	○																		
7					8	SS	101	50/0.3	○																		
8	Diamond Rotary Core HQ Casing	- Rock fragments at 7.7 m depth Slightly weathered to fresh, grey, LIMESTONE BEDROCK with shale interbeds (GEORGIAN BAY FORMATION)		237.93 7.85	RC1	RC	381	TCR = 94%, SCR = 69%, RQD = 38%				MH															
9					RC2	RC	1524	TCR = 100%, SCR = 100%, RQD = 93%																			
10		End of Borehole		236.03 9.75							UCS= 74 MPa	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th colspan="3">GROUNDWATER OBSERVATIONS</th> </tr> <tr> <th>DATE</th> <th>DEPTH (m)</th> <th>ELEV. (m)</th> </tr> </thead> <tbody> <tr> <td>23/05/18</td> <td>0.1</td> <td>▽ 245.7</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	GROUNDWATER OBSERVATIONS			DATE	DEPTH (m)	ELEV. (m)	23/05/18	0.1	▽ 245.7						
GROUNDWATER OBSERVATIONS																											
DATE	DEPTH (m)	ELEV. (m)																									
23/05/18	0.1	▽ 245.7																									
11	Notes:																										
12	1. Water level not measured upon completion of drilling due to use of water during rock coring																										
13	2. Piezometer installed as shown upon completion of drilling.																										
14	3. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 0.1 m below ground surface.																										

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF



# RECORD OF BOREHOLE BH23-13

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 6 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED			WATER CONTENT, % W <sub>p</sub>   W   W <sub>L</sub>
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		253.50										
		TOPSOIL		0.08	1	SS	102	6	●					
		FILL - (CL) SILTY CLAY, some sand; brown, contains clay pockets and rootlets; cohesive, w>PL, firm to very stiff				2	SS	356	18	●	○			
				252.13										
		(CL) SILTY CLAY, some sand, trace gravel; brown to grey; cohesive, w~PL to w>PL, stiff to hard		1.37	3	SS	305	23		●	○			
						4	SS	152	42		○			
						5	SS	330	27	○	●			
						6	SS	457	25	○	●			
		- Grey below 6.1 m depth.			7	SS	457	13	●					
				246.41										
		(SM) SILTY SAND, some gravel, trace plastic fines; grey, rock fragments (TILL); non-cohesive, moist, very dense - Auger grinding at 7.3 m depth		7.09										
				245.42										
8		End of Borehole		8.08	8	SS	356	98	○					
9		Notes: 1. Borehole dry upon completion of drilling. 2. Borehole caved to approximately 7.4 m depth. 3. Borehole backfilled with bentonite and soil cuttings upon completion of drilling.												
10														
11														
12														
13														
14														

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: IO  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-14

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 6 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED	WATER CONTENT, % W <sub>p</sub>   W   W <sub>L</sub>		
0	Power Auger Hollow Stem Auger (210mm OD)			Ground Surface		254.67								
		TOPSOIL		254.64	1A	SS	0		●					
		(CL) SILTY CLAY, some sand; brown to grey; cohesive, w~PL to w>PL, stiff to hard		254.13	1B	SS	254	8	●	○				
1					2	SS	254	28		○	●			
2					3	SS	381	35		○	●			
3					4	SS	356	26			●			
4					5	SS	457	19	●	○	⊕			
5			- Sand pockets between approximately 4.6 m and 5.0 m depths  - Grey below about 4.9 m depth		6	SS	305	26		○	●			
6				7	SS	356	23		○	●				
7				8	SS	356	29		○	●				
8		(CL) sandy SILTY CLAY, trace gravel; grey, (TILL); cohesive, w>PL, very stiff		247.58										
8		End of Borehole		246.59										
9		Notes: 1. Borehole dry upon completion of drilling. 2. Borehole caved to approximately 7.5 m depth. 3. Borehole backfilled with bentonite and soil cuttings upon completion of drilling.		7.09										
10				8.08										
11														
12														
13														
14														

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: IO  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-15

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 9 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED			WATER CONTENT, % Wp   W   Wl
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface TOPSOIL		253.31									 Monument 50mm dia. well screen	
		(CL) SILTY CLAY, some sand, trace gravel; brown; cohesive, w-PL to w>PL, very stiff		252.75 0.56	1A	SS	406	6	●					
1					1B	SS								
			(CL) sandy SILTY CLAY, trace to some gravel; brown to grey, oxidative staining, (TILL); cohesive, w-PL to w>PL, very stiff to hard		251.94 1.37	2	SS	457	21	○	●			
2					3	SS	457	32						
					4	SS	457	29	○	●				
3					5A	SS	457	24	○	●				
			- Grey at about 3.5 m depth		5B	SS								
4			(CL) SILTY CLAY, trace sand; grey; cohesive, w-PL to w>PL, stiff		249.27 4.04	6	SS	305	11	●	○			
5					7	SS	203	30	○	●				
6			(SM) gravelly SILTY SAND; grey, rock fragments, (TILL); non-cohesive, moist, dense		247.75 5.56	8	SS	457	46		●			
7														
8			- Auger grinding at 7.0 m depth (ML) SILT, trace sand, trace gravel; grey, rock fragments; non-cohesive, wet, dense		246.22 7.09									
8			End of Borehole		245.23 8.08									
9		Notes: 1. Borehole was dry upon completion of drilling. 2. Piezometer installed as shown upon completion of drilling. 3. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 0.8 m below ground surface.												
10														
11														
12														
13														
14														

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	0.8	252.5

# RECORD OF BOREHOLE BH23-16

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 16 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0		Ground Surface TOPSOIL		251.96									
1		(CL) SILTY CLAY, some sand; brown, organic inclusions; cohesive, w-PL to w>PL, very stiff		251.29 0.67	1	SS	305	6	●				
2		(CL) sandy SILTY CLAY, trace to some gravel; brown to grey, oxidative staining, rock fragments (TILL); cohesive, w-PL to w>PL, very stiff to hard		250.59 1.37	2	SS	406	20	●				
3					3	SS	406	26	○				
4					4	SS	178	31	○				
5					5	SS	457	37	○				
6		- Grey below about 4.7 m depth			6	SS	406	19	○ ●				
7		- Contains sand seams between approximately 6.1 m and 6.6 m depths			7	SS	381	40	○ ●				
8		(SM) SILTY SAND, some gravel; grey; non-cohesive, moist, very dense		244.87 7.09	8	SS	305	50/0.	○				
9		End of Borehole		244.06 7.90									
10		Notes: 1. Groundwater level measured in open borehole at approximately 7.3 m below ground surface prior to backfilling. 2. Borehole caved to approximately 7.6 m upon completion. 3. Borehole backfilled with soil cuttings upon completion of drilling.											

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF



# RECORD OF BOREHOLE BH23-17D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 27 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPa		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0		Ground Surface TOPSOIL		253.04									
0.46		(CL) SILTY CLAY, trace to some sand, trace gravel; brown, oxidative staining; cohesive, w~PL to w>PL, very stiff		252.58	1	SS	51	5	●				
1					2	SS	305	19		●	○		
2					3	SS	457	17		●	○		
3					4	SS	457	24	○	●			
4					5	SS	457	20		●			
4.04		(CL-ML) sandy SILTY CLAY to CLAYEY SILT, trace to some gravel; brown to grey (TILL); cohesive, w~PL, stiff to hard		249.00									
5		- Auger grinding at about 5.2 m depth			6	SS	457	56	○		●		
6													
7		- Grey below about 6.1 m depth			7	SS	457	14		●	○		
8					8	SS	457	31	○		●		
9													
10		- Auger grinding at about 9.8 m and from approximately 10.1 m to 10.7 m depths		242.91									
10.13		(GM/GP) Sandy SILTY GRAVEL, some plastic fines; grey (TILL); non-cohesive, wet, very dense			9	SS	457	38	○		●		
11		- Auger grinding from approximately 10.7 m to 12.2 m depths			10	SS	76	50/0.08	○				
12													
13		- Gravel and shale fragments between approximately 2.2 m and 12.5 m depths			11	SS	254	50/0.10	○				
13.31		Slightly weathered to fresh, fine grained, grey LIMESTONE BEDROCK with interbedded shale (GEORGIAN BAY FORMATION)		239.73									
14				13.31	RC1	RC	1055	TCR = 97%, SCR = 90%, RQD = 52%					

GEO - BOREHOLE LOG 101987.001/20230602.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-17D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 27 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m		WATER CONTENT, %			
10	20								30	40	50	60	70	80
14	Diamond Rotary Core HQ Casing													50mm dia., well screen
15					RC2	RC	1600	TCR	100%	SCR = 95%	RQD = 89%			
16		End of Borehole		237.04 16.00										
17		Notes:												
18		1. Water level not measured upon completion of drilling due to use of water during rock coring.												
19		2. Piezometers installed as shown upon completion of drilling. Shallow piezometer installed in second borehole drilled within approximately 2 m of initial installation.												
20		3. Groundwater level measured in the installed monitoring well on May 18, 2023 at a depth of about 1.5 m below ground surface.												
21														
22														
23														
24														
25														
26														
27														
28														

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	1.5	▽ 251.6

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC.2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-17S

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 27 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPa		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED		
0		Ground Surface TOPSOIL		253.03									
0.46		(CL) SILTY CLAY, trace to some sand, trace gravel; brown, oxidative staining; cohesive, w-PL to w>PL, very stiff		252.57	1	SS	51	5	●				
1					2	SS	305	19		●	○		
2					3	SS	457	17		●	○		
3					4	SS	457	24	○	●			
4					5	SS	457	20		●			
4.04		(CL-ML) sandy SILTY CLAY to CLAYEY SILT, trace to some gravel; brown to grey (TILL); cohesive, w-PL, stiff to hard		248.99									
5		- Auger grinding at about 5.2 m depth			6	SS	457	56	○		●		
6		- Grey below about 6.1 m depth			7	SS	457	14		●	—		
7													
8					8	SS	457	31	○		●		
9													
10		- Auger grinding at about 9.8 m and from approximately 10.1 m to 10.7 m depths			9	SS	457	38	○		●		
10.13		(GM/GP) Sandy SILTY GRAVEL, some plastic fines; grey (TILL); non-cohesive, wet, very dense		242.90									
11		- Auger grinding from approximately 10.7 m to 12.2 m depths			10	SS	76	50/0.08	○				
12		- Gravel and shale fragments between approximately 12.2 m and 12.5 m depths			11	SS	254	50/0.10	○				
12.95		End of Borehole		240.08									
13		Notes: 1. Piezometers installed as shown upon completion of drilling.		12.95									

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-17S

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 27 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m		WATER CONTENT, %			
10	20								30	40	50	60	70	80
14														
		2. Groundwater level measured in the installed monitoring well on May 18, 2023 at a depth of about 1.2 m below ground surface.												
15		3. Subsurface conditions based on borehole BH23-17D.												
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	1.2 ▽	251.8

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC.2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF



# RECORD OF BOREHOLE BH23-18

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 6 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0		Ground Surface		254.41									
		TOPSOIL		254.28	1A	SS							
		(CL) SILTY CLAY, trace to some sand, trace gravel; brown to grey, oxidative staining; cohesive, w~PL to w>PL, firm to hard		254.13	1B	SS	229	6	●	○			
1					2	SS	279	25		○	●		
2					3	SS	229	27		○	●		
		- Sand pockets between approximately 2.3 m and 2.7 m depths			4	SS	381	27	○		●		
3					5	SS	457	37		○	●		
4					6	SS	432	16		●	○		
5		- Grey below about 4.6 m depth			7	SS	254	13	●	○			
6					8	SS	330	15		●	○		
7					9	SS	102	50/0.3					
		(SM/ML) Gravelly SILTY SAND to SILT and SAND, trace plastic fines, grey (TILL), non-cohesive, wet, very dense		245.80									
9		- Auger grinding and possible cobbles/ boulders at 9.4 m depth		8.61	9	SS	102	50/0.3					
10					10	SS	51	50/0.3					
11					11	SS	254	50/0.3		○			
12		- Water encountered during drilling at about 11.3 m depth			12	SS	279	50/0.3		○			
13					13	SS	76	50/0.3		○			
14		- Auger grinding from approximately											

GEO - BOREHOLE LOG 101987.001:2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: IO/AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-18

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 6 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	+	⊕ REMOULDED	WATER CONTENT, % W <sub>p</sub> — W — W <sub>L</sub>			
14				13.7 m to 14.6 m and from approximately 15.2 m to 16.2 m depths											M
15		- Gravelly between approximately 15.2 m and 15.5 m depths			14	SS	152	50/0.0							
16		Highly weathered grey SHALE BEDROCK (GEORGIAN BAY FORMATION)		238.26 16.15											
17		End of Borehole		237.60 16.81	15	SS	51	50/0.45	○						
18		Notes: 1. Auger refusal was reached at 10 m on Feb 6, 2023. Borehole was moved approximately 2 m west and resumed to final depth of 16.8 m on Feb 21, 2023. 2. Water level not measured upon completion of drilling due to use of water during drilling. 3. Piezometer installed as shown upon completion of drilling. 4. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 2.1 m below ground surface.													
19															
20															
21															
22															
23															
24															
25															
26															
27															
28															

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	2.1 ▽	252.3

GEO - BOREHOLE LOG - 101987.001\2023\06\02.GPJ - GEMTEC-2018.GDT - 6/2/23



LOGGED: IO/AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-19

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 24 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION			
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED			WATER CONTENT, % W <sub>p</sub>   W   W <sub>L</sub>		
0		Ground Surface TOPSOIL		250.43									Monument			
1	Power Auger Hollow Stem Auger (210mm OD)	(CL) sandy SILTY CLAY, some gravel; brown, oxidative staining (TILL); cohesive, w~PL to w>PL, very stiff to hard		249.74 0.69	1	SS	254	8		●						
2				2	SS	457	15		●							
3				3	SS	457	44		○		●					
4				4	SS	457	42		○		●					
5				5	SS	457	45		○		●					
6		- Difficult augering between approximately 5.2 m and 5.5 m depths (CL) SILTY CLAY, trace to some sand, trace to some gravel; grey; cohesive, w~PL to w>PL, very stiff to hard		244.87 5.56	6	SS	152	27		○	●					
7																
8																
9		(SM) Gravelly SILTY SAND, trace plastic fines; grey; non-cohesive, moist, very dense		242.40 8.03	8	SS	457	48		○	●					
10		- Auger grinding between approximately 9.5 m and 10.8 m depths														
11		End of Borehole		239.63 10.80	10	SS	127	50/0.3		○						
		Notes: 1. Borehole was dry upon completion of drilling. 2. Piezometer installed as shown upon completion of drilling. 3. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 3.6 m below ground surface.														
12																
13																
14																

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	3.6	246.8

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23






LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-20

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 24 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED			WATER CONTENT, % Wp — W — Wl
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		253.12										
		TOPSOIL		252.97										
		(CL) SILTY CLAY, trace to some sand; brown, oxidative staining; cohesive, w~PL to w>PL, firm to very stiff		0.15	1	SS	305	7	●					
1					2	SS	432	19		●	⊕			
2					3	SS	457	27		○	●			
3					4	SS	457	21		●	⊕	—		
4					5	SS	457	17		●	○			
5					6	SS	457	20		○	●			
6			(CL) sandy SILTY CLAY, trace to some gravel; grey (TILL); cohesive, w~PL to w>PL, very stiff		247.56									
				5.56	7	SS	457	26		○	●	—		
8				8	SS	457	24		○	●				
9				9	SS	457	29		○	●				
10		(SM) SILTY SAND, trace gravel; grey (TILL); non-cohesive, moist, very dense		242.99										
		- Auger grinding between approximately 10.1 m and 10.4 m depths		242.17										
11		End of Borehole		10.95	10	SS	279	50/0.3	○					
12		Notes: 1. Borehole was dry upon completion of drilling. 2. Borehole did not cave upon completion of drilling. 3. Borehole backfilled with soil cuttings upon completion of drilling.												
13														
14														

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



# RECORD OF BOREHOLE BH23-21D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 22 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	●	WATER CONTENT, % Wp — W — Wl			⊕ NATURAL ⊕ REMOULDED
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		249.28									MH	Monument           Bentonite          Filter sand 50mm dia. well screen 
		TOPSOIL		248.98	1	SS	305	5	●					
1		(CL) sandy SILTY CLAY, trace gravel; brown, oxidative staining, rock fragments (TILL); cohesive, w-PL to w>PL, very stiff to hard		0.30	2	SS	457	35	○	●				
2					3	SS	457	40	○	●				
3					4	SS	457	32	○	●				
4					5	SS	457	33	○	●				
5					6	SS	457	17	○	●				
6		(ML) SILT, trace to some sand, trace plastic fines; grey; non-cohesive, moist to wet, very dense		243.72	7	SS	457	69	○	●				
7				5.56										
8		- Wet below about 7.6 m depth			8	SS	457	79	○	●				
9	(SM) SILTY SAND, some gravel, trace plastic fines; grey (TILL); non-cohesive, moist to wet, very dense		240.67	9	SS	457	77/0.28	○						
10			8.61											
11	End of Borehole		238.51	10	SS	76	50/0.10	○						
12	Notes:		10.77											
13	1. Groundwater level measured in open borehole at approximately 7.6 m below ground surface upon completion of drilling.													
14	2. Piezometer installed as shown upon completion of drilling. Shallow piezometer installed in second borehole drilled within approximately 2 metres of initial installation.													
	3. Groundwater level measured in the installed monitoring well on May 18, 2023 at a depth of about 0.4 m below													

GEO - BOREHOLE LOG 101987.001:20230602.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-21D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 22 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m		WATER CONTENT, %			
10	20								30	40	50	60	70	80
14		ground surface.												
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	0.4 ▽	248.9

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC.2018.GDT 6/2/23



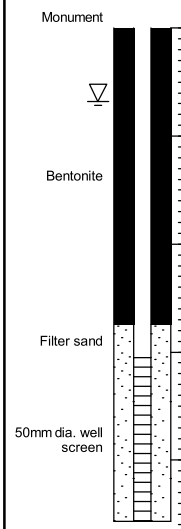
LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-21S

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 22 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m		WATER CONTENT, %			
10	20			30					40	50	60	70	80	90
0		Ground Surface TOPSOIL		249.24										
		(CL) sandy SILTY CLAY, trace gravel; brown, oxidative staining, rock fragments (TILL); cohesive, w~PL to w>PL, very stiff to hard		248.94 0.30	1	SS	305	5	●					
1					2	SS	457	35	○	●				
2					3	SS	457	40	○	●				
3					4	SS	457	32	○	●				
4					5	SS	457	33	○	●				
5		End of Borehole		244.67 4.57										
5		Notes: 1. Piezometers installed as shown upon completion of drilling. 2. Groundwater level measured in the installed monitoring well on May 18, 2023 at a depth of about 0.6 m below ground surface. 3. Subsurface conditions based on borehole BH23-21D.												
6														
7														
8														
9														
10														
11														
12														
13														
14														



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	0.6	248.6

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC.2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-22

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 17 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0		Ground Surface		252.92									
		TOPSOIL		252.72	1A								
		(CL) SILTY CLAY, trace sand; brown; cohesive, w~PL to w>PL, stiff to very stiff		0.20	1B	SS	254	9	●	○			
1					2	SS	305	24		○			
		(CL) sandy SILTY CLAY, trace to some gravel; grey, oxidative staining (TILL); cohesive, w~PL, hard		251.55									
				1.37	3	SS	457	33		○			
2					4A	SS	457	44		○			
					4B					○			
3					5	SS	457	32		○			
		- Sand pockets between approximately 3.1 m and 3.5 m depths											
4				248.88									
		(CL) Sandy SILTY CLAY, some gravel; grey; cohesive, w~PL to w>PL, stiff to very stiff		4.04	6	SS	457	15		●			
5													
6					7	SS	457	19		○			
7													
8				244.84	8	SS	457	19		○			
		End of Borehole		8.08									
9		Notes:											
		1. Borehole was dry upon completion of drilling.											
		2. Piezometer installed as shown upon completion of drilling.											
		3. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 0.8 m below ground surface.											
10													
11													
12													
13													
14													



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	0.8	252.2

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF



# RECORD OF BOREHOLE BH23-23D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 14 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	●	WATER CONTENT, % W <sub>p</sub>   W   W <sub>L</sub>			⊕ NATURAL ⊕ REMOULDED
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface TOPSOIL		249.95										
		(CL) SILTY CLAY, some sand, trace gravel; brown, organic inclusions; cohesive, w~PL to w>PL, very stiff		249.49 0.46	1A	SS	305	7	●					
1					1B					○				
					2	SS	457	25		○	●			
2			(CL) sandy SILTY CLAY, trace to some gravel; brown to grey (TILL); cohesive, w~PL to w>PL, very stiff to hard		248.58 1.37									
					3	SS	457	40		○	●			
					4	SS	457	42		○	●			
					5	SS	457	40		○	●			
4			- Auger grinding at about 4.0 m and from approximately 6.4 m to 7.0 m depths											
					6A	SS	305	34		○	●			
5					6B					○				
					7	SS	356	34		○	●			MH
6			- Grey below approximately 6.1 m depth											
					8	SS	457	28		○	●			
9		(SM/ML) Gravelly SAND and SILT, trace plastic fines; grey (TILL), rock fragments; non-cohesive, moist to wet, very dense		241.34 8.61										
				9	SS	76	50/0.08		○				MH	
10														
				10	SS	76	50/0.08		○					
11														
				11	SS	76	50/0.08		○					
12														
				12	SS	76	50/0.08		○					
13														
14		- Wet below about 13.7 m depth												

GEO - BOREHOLE LOG 101987.001:20230602.GPJ GEMTEC 2018.GDT 6/2/23

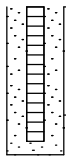


LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-23D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 14 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				● PENETRATION RESISTANCE (N), BLOWS/0.3m ▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	SHEAR STRENGTH (Cu), kPA + NATURAL ⊕ REMOULDED  WATER CONTENT, % W <sub>p</sub> — W — W <sub>L</sub>	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m				
14			235.51									Filter sand  50mm dia. well screen 
15		Highly weathered grey SHALE BEDROCK (GEORGIAN BAY FROMATION)	14.44									
15		End of Borehole	234.58	13	SS	76	50/0.3	3				
16		Notes:	15.37									
17		1. Original Borehole reached practical auger refusal at about 4 m on Feb 14, 2023 and was moved approximately 2 m NE where it was advanced to termination on Feb 15, 2023.										
18		2. Groundwater level measured in open borehole at approximately 15.2 m below ground surface upon completion of drilling.										
19		3. Piezometers installed as shown upon completion of drilling. Shallow piezometer installed in second borehole drilled within approximately 2 metres of initial installation.										
20		4. Groundwater level measured in the installed monitoring well on May 18, 2023 at a depth of about 5.0 m below ground surface.										
21												
22												
23												
24												
25												
26												
27												
28												

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	5.0 ▽	244.9

GEO - BOREHOLE LOG 101987.001:20230602.GPJ GEMTEC.2018.GDT 6/2/23



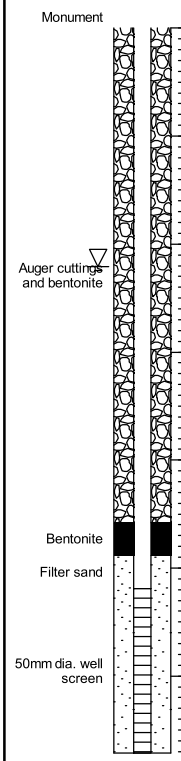
LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-23S

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 14 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0		Ground Surface TOPSOIL		249.89									
		(CL) SILTY CLAY, some sand, trace gravel; brown, organic inclusions; cohesive, w~PL to w>PL, very stiff		249.43 0.46	1A	SS	305	7	●				
					1B					○			
1					2	SS	457	25		○	●		
		(CL) sandy SILTY CLAY, trace to some gravel; brown to grey (TILL); cohesive, w~PL to w>PL, very stiff to hard		248.52 1.37						○	●		
2					3	SS	457	40		○	●		
					4	SS	457	42		○	●		
3					5	SS	457	40		○	●		
4		- Auger grinding at about 4.0 m and from approximately 6.4 m to 7.0 m depths											
					6A	SS	305	34		○	●		
5					6B					○			
6													
		- Grey below approximately 6.1 m depth											
					7	SS	356	34		○	●		
7		End of Borehole		243.18 6.71									
8		Notes:											
9		1. Piezometers installed as shown upon completion of drilling.											
10		2. Groundwater level measured in the installed monitoring well on May 18, 2023 at a depth of about 2.2 m below ground surface.											
11		3. Subsurface description based on borehole BH23-23D.											
12													
13													
14													



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	2.2	247.7

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23



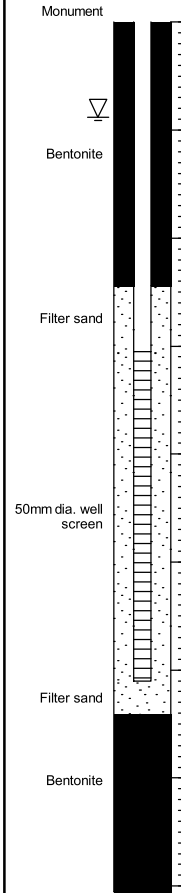
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# RECORD OF BOREHOLE BH23-24

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 13 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED		
0		Ground Surface TOPSOIL		249.09									
0.51		(CL) SILTY CLAY, some sand, trace gravel; brown; cohesive, w~PL to w>PL, very stiff to hard		248.58	1A	SS	457	7	●				
1				0.51	1B				○				
2					2	SS	457	31	○	●			
3					3	SS	457	35	○	●			
4					4	SS	457	27	○	●			
5					5	SS	457	21	○	●			
5.2 - 6.1	Power Auger Hollow Stem Auger (210mm OD)	(CL) sandy SILTY CLAY, trace gravel; grey (TILL); cohesive, w~PL to w>PL, very stiff		245.43									
6				3.66	6	SS	457	23	○	●			
7					7	SS	457	20	○	●			
8		- Auger grinding between approximately 5.2 m and 6.1 m depth			8	SS	457	29	○	●			
7.09		(CL) SILTY CLAY, some sand; grey; cohesive, w~PL, hard		242.00									
8.05		End of Borehole		241.04	9	SS	457	81/0.28	○				
9		Notes: 1. Borehole started on Feb 13, 2023 and completed on Feb 14, 2023. 2. Water level measured at about 5.9 m depth upon completion of drilling. 3. Piezometer installed as shown upon completion of drilling. 4. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 0.9 m below ground surface.											



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	0.9	248.2

GEO - BOREHOLE LOG 101987.001:20230602.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF



# RECORD OF BOREHOLE BH23-25

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 13 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● NATURAL ⊕ REMOULDED	WATER CONTENT, % W <sub>p</sub> — W — W <sub>L</sub>		
0		Ground Surface		248.82									
		TOPSOIL		248.57									
		(CL) SILTY CLAY, trace to some sand; brown; cohesive, w~PL to w>PL, soft to very stiff		248.25	1	SS	610	3	●				
1					2	SS	457	29		○			
		(CL) SILTY CLAY, some sand, trace gravel; brown to grey, oxidative stains (TILL); cohesive, w~PL to w>PL, very stiff to hard		247.45	3	SS	457	28		○			
2					4	SS	457	41		○			
3					5A	SS	457	26		○			
		- Grey below about 3.3 m depth			5B					○			
4	Power Auger												
	Hollow Stem Auger (210mm OD)				6	SS	457	18		○			
5													
					7	SS	457	26		○			
6													
7													
		(CL) SILTY CLAY, trace sand; grey; cohesive, w~PL, hard		241.73									
				7.09									
8		End of Borehole		240.92	8	SS	280	50/0.	3	○			
				7.90									
9		Notes:											
		1. Borehole was dry upon completion of drilling.											
		2. Borehole did not cave upon completion of drilling.											
		3. Borehole backfilled with soil cuttings and bentonite upon completion of drilling.											
10													
11													
12													
13													
14													

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-26

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 16 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED		
0		Ground Surface TOPSOIL		248.75									
0.69		(CL) SILTY CLAY, trace sand; brown; cohesive, w~PL to w>PL, firm		248.24	1A	SS	457	5	●				
1		(CL) sandy SILTY CLAY, trace to some gravel; brown to grey, oxidative staining (TILL); cohesive, w~PL to w>PL, very stiff to hard		248.56	1B				○				
2					2	SS	457	26	○	●			
3					3	SS	457	30	○	●			
4					4	SS	457	35	○	●			
5		- Grey below about 4.6 m depth			5	SS	457	44	○	●			
6					6	SS	457	61	○	●			
7					7	SS	305	37	○	●			
8					8	SS	457	26	○	●			
8.61		(CL) SILTY CLAY, some sand; grey; cohesive, w~PL, hard		240.14									
9					9	SS	127	50/0.3	○				
9.97		(SM/ML) SAND and SILT, some gravel, trace plastic fines; grey, rock fragments; non-cohesive, moist to wet, very dense		238.78									
10					10	SS	127	50/0.3	○				
11		- Auger grinding at about 11 m depth											
12		- Hard augering from approximately 12.2 m to 13.7 m depths			11	SS	102	50/0.3	○				
13													
14		- Wet below about 13.7 m depth							○	●			

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



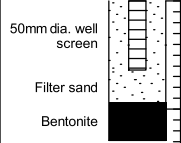
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# RECORD OF BOREHOLE BH23-26

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD28  
 BORING DATE: Feb 16 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				● PENETRATION RESISTANCE (N), BLOWS/0.3m ▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	SHEAR STRENGTH (Cu), kPA + NATURAL ⊕ REMOULDED WATER CONTENT, % W <sub>p</sub> — W — W <sub>L</sub>	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m				
14					12	SS	457	81				
15				233.46 15.29	13	SS	51	50/0.45	○			
16		End of Borehole  Notes: 1. Groundwater level measured in open borehole at approximately 13.7 m below ground surface upon completion of drilling. 2. Piezometer installed as shown upon completion of drilling. 3. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 6.9 m below ground surface.										
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	6.9 ▽	241.8

GEO - BOREHOLE LOG - 101987.001-20230602.GPJ - GEMTEC-2018.GDT - 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-27

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 13 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED			WATER CONTENT, % Wp   W   Wl
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		246.47										
		TOPSOIL		246.17										
		(CL) SILTY CLAY, some sand, trace gravel; brown to grey; cohesive, w~PL to w>PL, very stiff to hard		0.30	1	SS	406	7	●					
1					2	SS	432	36		○				
2					3	SS	457	35		○				
3			- Sand pocket / lenses from approximately 2.5 m to 2.6 m depths		4	SS	457	45		○				
4					5	SS	457	20		○	●			
5			(CL) sandy SILTY CLAY, trace gravel; grey, (TILL); cohesive, w~PL to w>PL, stiff to very stiff		242.43									
				6	SS	457	12	●	○					
6				7	SS	457	19			●				
7														
		(SM) SILTY SAND, trace gravel; grey, rock fragments; non-cohesive, moist, very dense		239.38										
				8	SS	381	95/0.23	○						
8		End of Borehole		238.47										
9		Notes: 1. Groundwater level measured in open borehole at approximately 7.9 m below ground surface prior to backfilling. 2. Borehole did not cave upon completion of drilling. 3. Borehole backfilled with soil cuttings and bentonite upon completion of drilling.		8.00										
10														
11														
12														
13														
14														

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF



# RECORD OF BOREHOLE BH23-28D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD28  
 BORING DATE: Mar 1 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	NATURAL	REMOULDED			WATER CONTENT, %
								10 20 30 40 50 60 70 80 90	+	⊕	Wp   W   Wl			
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		255.21									Monument	
		TOPSOIL		0.08	1A									
		(CL) SILTY CLAY, some sand, trace gravel; brown; cohesive, w~PL to w>PL, stiff		254.52	1B	SS	457	9	●	○				
1		(CL) sandy SILTY CLAY, trace gravel; brown (TILL); cohesive, w~PL to w>PL, hard		0.69	2	SS	305	36	○		●			
		(SM) SILTY SAND, some gravel; brown, oxidative staining (TILL); non-cohesive, moist, dense		253.84	3	SS	457	43	○		●			
2		- Silt seams between approximately 2.3 m and 2.7 m depths		1.37	4	SS	305	46	○		●			
		(CL) SILTY CLAY, trace sand; grey; cohesive, w~PL to w>PL, very stiff to hard		252.31	5	SS	457	42	○		●			
3				2.90	6	SS	457	29		○	●			
4					7	SS	457	95/0.28		○				
5		(SM) SILTY SAND, some gravel; grey, rock fragments (TILL); non-cohesive, moist, very dense		249.65	8	SS	457	25		○	●			
6		- Auger grinding at about 5.8 m depth		5.56	9	SS	76	50/0.08		○				
7		(ML) sandy SILT, trace plastic fines; grey; non-cohesive, wet, compact to very dense		248.12	10	SS	457	78		○				
8			7.09	11	SS	457	58		○					
9	(SM/GM) SILTY SAND and GRAVEL, trace plastic fines; grey, rock fragments; non-cohesive, moist to wet, very dense		245.27	12	SS	254	50/0.3		○					
10			9.94											
11	- Auger grinding from approximately 11.3 m to 12.2 m depths													
12														
13														
14														

GEO - BOREHOLE LOG 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



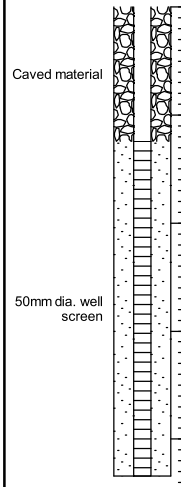
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# RECORD OF BOREHOLE BH23-28D

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD28  
 BORING DATE: Mar 1 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	+	NATURAL	⊕ REMOULDED		
14														
15														
16					13	SS	254	50/0.3	3	○				
17					14	SS	102	50/0.3	0	○				
18		(CL) SILTY CLAY, trace sand; grey, shale fragments; cohesive, w~PL to w>PL, hard		237.63 17.58										
19		End of Borehole		236.87 18.34	15	SS	51	50/0.3	0	○				
20		Notes:												
21		1. Borehole started on Mar 1, 2023 and completed on Mar 2, 2023.												
22		2. Groundwater encountered at about 7.6 m depth during drilling.												
23		3. Inferred bedrock contact at 18.3 m depth based on spoon refusal.												
24		4. Groundwater observed flowing above surface on March 2, 2023 prior to resuming drilling.												
25		5. Initial hole backfilled with grout prior to drilling additional boreholes within approximately 2 m of original location for well installations.												
26		6. Piezometer installed as shown upon completion of drilling.												
27		7. The groundwater was observed flowing out of the top of the monitoring well on May 18, 2023. The top of the well casing is located about 1 m above ground surface.												
28														



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	-1.0	256.2

GEO - BOREHOLE LOG - 101987.001\2023\06\02.GPJ - GEMTEC-2018.GDT - 6/2/23



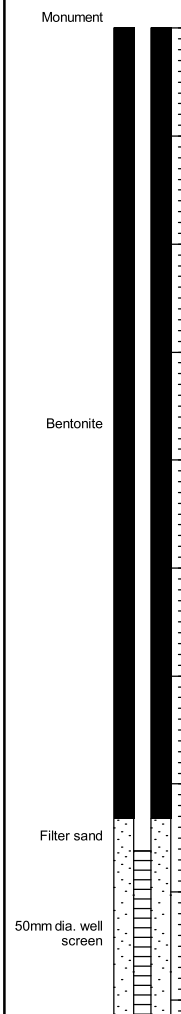
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 CHECKED: DMF

# RECORD OF BOREHOLE BH23-28S

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Mar 1 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	⊕ NATURAL ⊕ REMOULDED		
0		Ground Surface		255.32									
		TOPSOIL		0.08	1A								
		(CL) SILTY CLAY, some sand, trace gravel; brown; cohesive, w~PL to w>PL, stiff		254.63	1B	SS	457	9	●	○			
1		(CL) sandy SILTY CLAY, trace gravel; brown (TILL); cohesive, w~PL to w>PL, hard		253.95	2	SS	305	36	○	●			
2		(SM) SILTY SAND, some gravel; brown, oxidative staining (TILL); non-cohesive, moist, dense		252.42	3	SS	457	43	○	●			
		- Silt seams between approximately 2.3 m and 2.7 m depths			4	SS	305	46	○	●			
3		(CL) SILTY CLAY, trace sand; grey; cohesive, w~PL to w>PL, very stiff to hard		249.76	5	SS	457	42	○	●			
4					6	SS	457	29	○	●			
5		(SM) SILTY SAND, some gravel; grey, rock fragments (TILL); non-cohesive, moist, very dense		248.23	7	SS	457	95/0.28	○	●			
6		- Auger grinding at about 5.8 m depth			8	SS	457	25	○	●			
7		(ML) sandy SILT, trace plastic fines; grey; non-cohesive, wet, compact to very dense		246.18									
8		End of Borehole		9.14									
9		Notes:											
10		1. Piezometer installed as shown upon completion of drilling.											
11		2. The groundwater was observed flowing out of the top of the monitoring well on May 18, 2023. The top of the well casing is located about 1 m above ground surface.											
12		3. Subsurface conditions based on borehole BH23-28D.											
13													
14													



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
23/05/18	-1.0	256.3

GEO - BOREHOLE LOG - 101987.001/2023/06/02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: AS  
 CHECKED: DMF

# RECORD OF BOREHOLE BH23-E1

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 8 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED			WATER CONTENT, % Wp   W   Wl
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface CONCRETE		254.51									Flush Mount Concrete	
0.33		(CL) SILTY CLAY, trace to some sand, trace gravel; brown; cohesive, w~PL to w>PL, stiff to very stiff		254.18	1	SS	127	9	●					Combustible Gas Readings: 5 ppm 5 ppm 0 ppm 0 ppm 0 ppm 5 ppm 5 ppm 0 ppm
1		- Organic inclusions above about 0.6 m			2	SS	203	17	●	○				
2					3	SS	305	15	●	○				
3		- Contains silty sand seams from approximately 2.3 m to 2.7 m depths			4	SS	610	20	●	○				
4					5	SS	254	19	●					
5		(CL) sandy SILTY CLAY, trace gravel; grey (TILL); cohesive, w~PL to w>PL, very stiff		250.40	6	SS	610	20	○	●				
6		(CL) SILTY CLAY, some sand; grey; cohesive, w~PL to w>PL, very stiff		248.87	7	SS	610	17	●	○				
7														
8	(ML) sandy SILT, trace gravel; grey (TILL); non-cohesive, moist, very dense		247.35	8	SS	381	86	○			●			
8.23														
9		End of Borehole												
10		Notes:												
11		1. Borehole Started Feb 8, 2023 and completed on Feb 10, 2023.												
12		2. Borehole dry upon completion of drilling.												
13		3. Piezometer installed as shown upon completing of drilling.												
14		4. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 1.1 m below ground surface.												

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEV (m)
23/05/18	1.1	253.4

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: IO  
 CHECKED: DMF



# RECORD OF BOREHOLE BH23-E2

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course - Detailed Investigation  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD28  
 BORING DATE: Feb 7 2023

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0	Power Auger Hollow Stem Auger (210mm OD)	Ground Surface		254.01								Combustible Gas Readings: 5 ppm 0 ppm 0 ppm 0 ppm 0 ppm 0 ppm 3 ppm 0 ppm	
		FILL - (GP) sandy GRAVEL, trace non-plastic fines; brown; non-cohesive, moist, compact			1	SS	178	17	20	20			
1		(CL) SILTY CLAY, trace to some sand, trace gravel; brown; cohesive, w~PL to w>PL, firm to hard		253.32 0.69		2	SS	203	7	10	80		
		- Organic inclusions between approximately 0.8 m and 1.4 m depths				3	SS	356	20	20	20		
2						4	SS	508	29	30	40		
3						5	SS	610	36	40	60		
4						6	SS	610	22	20	20		
5						7	SS	356	13	20	20		
6					8	SS	432	44	40	40			
7		(ML) SILT, slight plasticity, some sand, trace gravel; grey (TILL); non-cohesive, moist, dense		246.85 7.16									
8		End of Borehole		245.78 8.23									
9		Notes:											
10		1. Borehole started on Feb 7, 2023 and completed on Feb 8, 2023.											
11		2. Groundwater level measured in open borehole at approximately 5.0 m below ground surface prior to well construction.											
12		3. Borehole caved to approximately 6.7 m depth.											
13		4. Piezometer installed as shown upon completion of drilling.											
14		5. Groundwater level measured in installed monitoring well on May 18, 2023 at a depth of about 1.4 m below ground surface.											

GEO - BOREHOLE LOG 101987.001\2023\06\02.GPJ GEMTEC 2018.GDT 6/2/23



LOGGED: IO  
 CHECKED: DMF

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV (m)
23/05/18	1.4	252.6



# RECORD OF BOREHOLE 22-1

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course Redevelopment, Caledon, Ontario  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD2013  
 BORING DATE: Jul 12 2022

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED			WATER CONTENT, % Wp — W — Wl
0	Power Auger Hollow Stem Auger (152mm OD)	Ground Surface		257.70										
		FILL - (CL) SILTY CLAY, some sand; brown, rootlets, cohesive, w<PL to w-PL, firm.				1	SS	228	5	●	○			
1			(CL) sandy SILTY CLAY, trace to some gravel; brown to grey, oxidation staining (TILL); cohesive, w<PL to w>PL, stiff to hard		256.63		2A	SS	127	5	●	○		
					1.07		2B							
2						3	SS	305	25	○	●			
3						4	SS	457	40	○	●			
4			- grey below approximately 3.0 m depth - oxidation staining to approximately 3.1 m depth			5	SS	457	30	○	●			
5						6	SS	457	18	○	●			
6			(ML) sandy SILT, trace gravel; grey (TILL), non-cohesive, moist, compact		252.14		7	SS	457	27	○	●		
					5.56									
7		(ML) SILT, some sand, grey; non-cohesive, moist, compact		250.61		8	SS	457	25	○	●			
				7.09										
8		End of Borehole		249.62										
		Notes: 1. Borehole was open and dry upon completion of drilling. 2. Borehole backfilled with bentonite upon completion of drilling.		8.08										
9														
10														

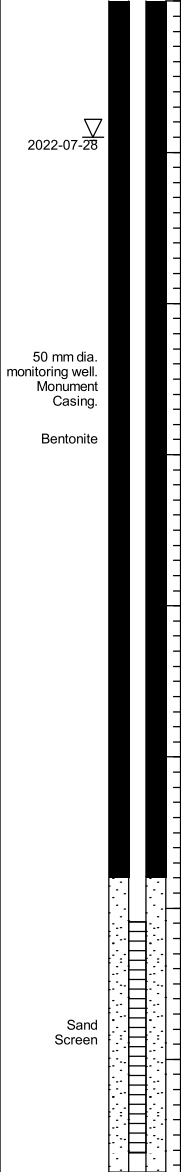
GEO - BOREHOLE LOG - 101987.001.GPJ - GEMTEC 2018.GDT - 9/5/22

# RECORD OF BOREHOLE 22-2

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course Redevelopment, Caledon, Ontario  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD2013  
 BORING DATE: Jul 12 2022

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED			WATER CONTENT, % W <sub>p</sub>   W   W <sub>L</sub>
0	Power Auger Hollow Stem Auger (203mm OD)	Ground Surface		256.30										
		FILL - (CL) SILTY CLAY, some sand to sandy, trace gravel; brown, rootlets, grey, cohesive, w<PL to w~PL, firm.			1	SS	457	5	●					
1					2	SS	76	7	●	○				
		(CL) SILTY CLAY, some sand; grey, rootlets; cohesive, w~PL, stiff to very stiff			254.93									
				1.37										
2					3	SS	457	18		●				
		(CL) sandy SILTY CLAY, trace gravel, grey, (TILL); cohesive, w<PL to w>PL, stiff to very stiff			254.17									
				2.13		4A								
				253.63		4B	SS	406	25	○	●			
		- inferred cobbles/boulders from auger grinding at approximately 2.6 m depth		253.63										
		(ML) SILT, slight plasticity, trace sand, grey; non-cohesive, moist to wet, compact			5	SS	381	19		●				
3														
4														
5					6	SS	406	21		●				
6		(SM) SILTY SAND, some gravel, grey, (possible TILL); non-cohesive, wet, very dense			7	SS	432	56	○		●			
		- inferred cobbles/boulders from auger grinding between approximately 5.5 m and 5.6 m depth												
					8	SS	381	55	○		●			
7														
8		End of Borehole		248.55	9	SS	127	50/0.13	○					
		Notes:		7.75										
9		1. Water level measured at approximately 3.4 m bgs upon completion of drilling.												
		2. Groundwater level monitoring well installed upon completion of drilling.												
		3. Water level measured in installed monitoring well at approximately 0.9 m bgs on July 28, 2022.												
10														



GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
22/07/28	0.9	255.4

GEO - BOREHOLE LOG 101987.001.GPJ GEMTEC 2018.GDT 9/5/22



LOGGED: TO  
 CHECKED: DMF



# RECORD OF BOREHOLE 22-3

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course Redevelopment, Caledon, Ontario  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD2013  
 BORING DATE: Jul 12 2022

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED	WATER CONTENT, % Wp   W   Wl		
0	Power Auger Hollow Stem Auger (152mm OD)	Ground Surface		256.50										
		TOPSOIL (75 mm)		256.42										
		FILL - (CL) SILTY CLAY, some sand to sandy; brown to grey; cohesive, w<PL to w~PL, firm to stiff		256.08	1	SS	381	10	●					
1		-contains rootlets between approximately 0.1 m and 0.5 m depth			2	SS	406	10	●	○				
					3	SS	406	14	●					
2					4	SS	457	11	●	○				
					5	SS	457	8	●	○				
3														
4														
4		(CL) sandy SILTY CLAY, trace gravel; brown, oxidation staining, (TILL); cohesive, w<PL to w>PL, very stiff to hard		252.46										
				4.04										
5				6	SS	457	43	○	●					
6		- inferred cobbles/boulders from auger grinding at approximately 5.8 m depth												
				7	SS	457	48		●					
7		- grey at approximately 6.4 m depth												
8		- inferred cobbles/boulders from auger grinding at approximately 7.6 m depth		248.83										
		(ML) sandy SILT, trace gravel, grey, non-cohesive, moist		248.86	8A	SS	203	50/0.05	○					
		End of Borehole		248.86	8B									
				7.82										
9		Notes												
		1. Borehole caved at approximately 7.5 m depth.												
		2. Borehole dry upon completion of drilling.												
		3. Borehole backfilled with bentonite and soil cuttings upon completion of drilling.												
10														

GEO - BOREHOLE LOG\_101987.001.GPJ\_GEMTEC 2018.GDT\_9/5/22



LOGGED: TO  
 CHECKED: DMF

# RECORD OF BOREHOLE 22-4

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course Redevelopment, Caledon, Ontario  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD2013  
 BORING DATE: Jul 13 2022

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED			WATER CONTENT, % Wp — W — Wl	
0	Power Auger Hollow Stem Auger (152mm OD)	Ground Surface		251.70											
		FILL- (GP) GRAVEL; grey; non-cohesive, dry (CL) SILTY CLAY, trace to some sand; brown, oxidation staining; cohesive, w<PL to w~PL, firm to stiff -rootlets to approximately 0.5 m depth		250.68	1	SS	457	7	●						
1				250.33	2	SS	457	13	●	○					
		(CL) sandy SILTY CLAY, trace to some gravel; brown, oxidation staining, (TILL); cohesive, w<PL to w>PL, stiff to hard		1.37	3	SS	457	14	●						
2					4	SS	457	33	○	●					
3					5	SS	457	23	○	●					
4			(CL) SILTY CLAY, trace sand; grey, cohesive, w~PL to w>PL, stiff		247.66	6	SS	457	11	●	○				
5				4.04											
6		(CL) SILTY CLAY, trace to some sand, trace gravel; grey, (TILL); cohesive, w~PL, very stiff		246.14	7	SS	457	17	○	●					
			5.56												
7		(ML) sandy SILT, trace to some gravel, grey, (TILL), non-cohesive, moist, dense		244.61	8	SS	457	44	○						
			7.09												
8		End of Borehole		243.62											
			8.08												
9		Notes: 1. Borehole was open and dry upon completion of drilling. 2. Borehole backfilled with bentonite and soil cuttings upon completion of drilling.													
10															

GEO - BOREHOLE LOG, 101987.001.GPJ, GEMTEC 2018.GDT, 9/5/22



LOGGED: TO  
 CHECKED: DMF

# RECORD OF BOREHOLE 22-5

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course Redevelopment, Caledon, Ontario  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 1  
 DATUM: CGVD2013  
 BORING DATE: Jul 13 2022

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0	Power Auger Hollow Stem Auger (203mm OD)	Ground Surface		251.20								MH	50 mm dia. monitoring well. Monument Casing.  Bentonite
		TOPSOIL (50 mm)		250.08	1	SS	457	6	●				
		(CL) sandy SILTY CLAY; brown, rootlets, cohesive, w<PL, firm		250.59									
1		(CL) sandy SILTY CLAY, trace gravel; brown, oxidation staining, (TILL); cohesive, w<PL to w>PL, stiff to very stiff		0.61	2	SS	457	27	○ ●				
2		- inferred cobbles/boulders from auger grinding at approximately 1.9 m depth			3	SS	457	26	○ ●				
3					4	SS	457	26	○ ●				
4					5	SS	457	29	○ ●				
5					6	SS	406	24	○ ●				
6	(ML) SILT, slight plasticity, trace sand, trace gravel; grey, non-cohesive, moist to wet, dense to very dense		245.64										2022-07-28
			5.56	7	SS	457	54	○ ●					
7													
8				8	SS	457	43	○ ●					
8	End of Borehole			243.12									
			8.08										
9	Notes: 1. Borehole dry upon completion of drilling. 2. Groundwater level monitoring well installed upon completion of drilling 3. Water level measured in installed monitoring well at 5.5 m bgs on July 28, 2022.												
10													

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
22/07/28	5.5	245.7

GEO - BOREHOLE LOG 101987.001.GPJ GEMTEC 2018.GDT 9/5/22



LOGGED: TO  
 CHECKED: DMF

# RECORD OF BOREHOLE 22-6

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course Redevelopment, Caledon, Ontario  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 1 OF 2  
 DATUM: CGVD2013  
 BORING DATE: Jul 13 2022

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE		SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	▲ DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m	● PENETRATION RESISTANCE (N), BLOWS/0.3m	+ NATURAL ⊕ REMOULDED		
0	Power Auger Hollow Stem Auger (203mm OD)	Ground Surface		253.50								MH	50 mm dia. monitoring well. Monument Casing.
		TOPSOIL (125 mm)		253.37									
		(CL) SILTY CLAY, trace sand, trace to some gravel; brown to grey, oxidation stains; cohesive, w<PL to w>PL. firm to stiff - rootlets to approximately 0.5 m depth		0.13	1	SS	457	6	●				
1					2	SS	279	11	●	⊕			
					3	SS	457	13	●		—		
2					4	SS	457	13	●	⊕			
					5	SS	457	14	●				
3			- grey below approximately 2.9 m depth		6	SS	457	9	●	⊕			
4				7	SS	406	8	●	⊕				
5				8									
6				8A	SS	457	26	⊕	●				
7		(CL) SILTY CLAY, trace to some sand; grey, oxidation staining, (TILL); cohesive, w<PL to w~PL, stiff to very stiff		246.42									
				7.08									
8		(ML) sandy SILT, trace gravel, grey (TILL); non-cohesive, moist		245.58									
				245.32									
		End of Borehole		8.08									
9		Notes: 1. Wet conditions encountered at approximately 6.1 m depth during drilling. 2. Borehole dry upon completion of drilling. 3. Groundwater level monitoring well installed upon drilling completion											
10													

Bentonite  
  
 2022-07-28

Screen Sand

GEO - BOREHOLE LOG 101987.001.GPJ GEMTEC 2018.GDT 9/5/22



LOGGED: TO  
 CHECKED: DMF



# RECORD OF BOREHOLE 22-6

CLIENT: Mayfield Golf Course Inc.  
 PROJECT: Mayfield Golf Course Redevelopment, Caledon, Ontario  
 JOB#: 101987.001  
 LOCATION: See Borehole Location Plan

SHEET: 2 OF 2  
 DATUM: CGVD2013  
 BORING DATE: Jul 13 2022

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES				PENETRATION RESISTANCE (N), BLOWS/0.3m		SHEAR STRENGTH (Cu), kPA		ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	RECOVERY, mm	BLOWS/0.3m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m		WATER CONTENT, %			
10	20			30					40	50	60	70	80	90
10		4. Water level measured in installed monitoring well at 2.9 m bgs on July 28, 2022.												
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														

GROUNDWATER OBSERVATIONS		
DATE	DEPTH (m)	ELEV. (m)
22/07/28	2.9 ▽	250.6

GEO - BOREHOLE LOG 101987.001.GPJ GEMTEC 2018.GDT 9/5/22



LOGGED: TO  
 CHECKED: DMF



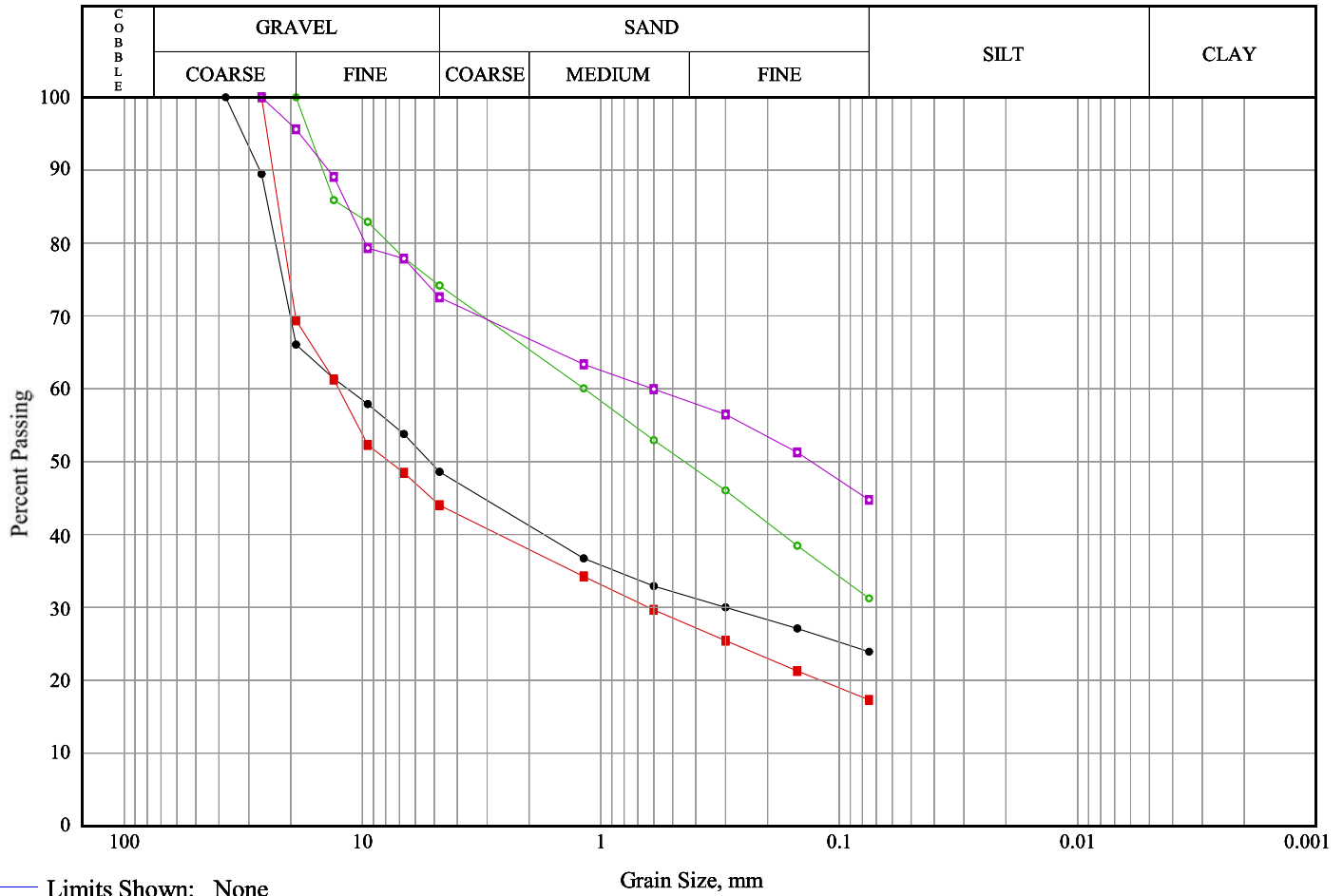
## **APPENDIX D**

### **Geotechnical Laboratory Testing Results**

Grain Size Distribution Testing (Sieve and Hydrometer)

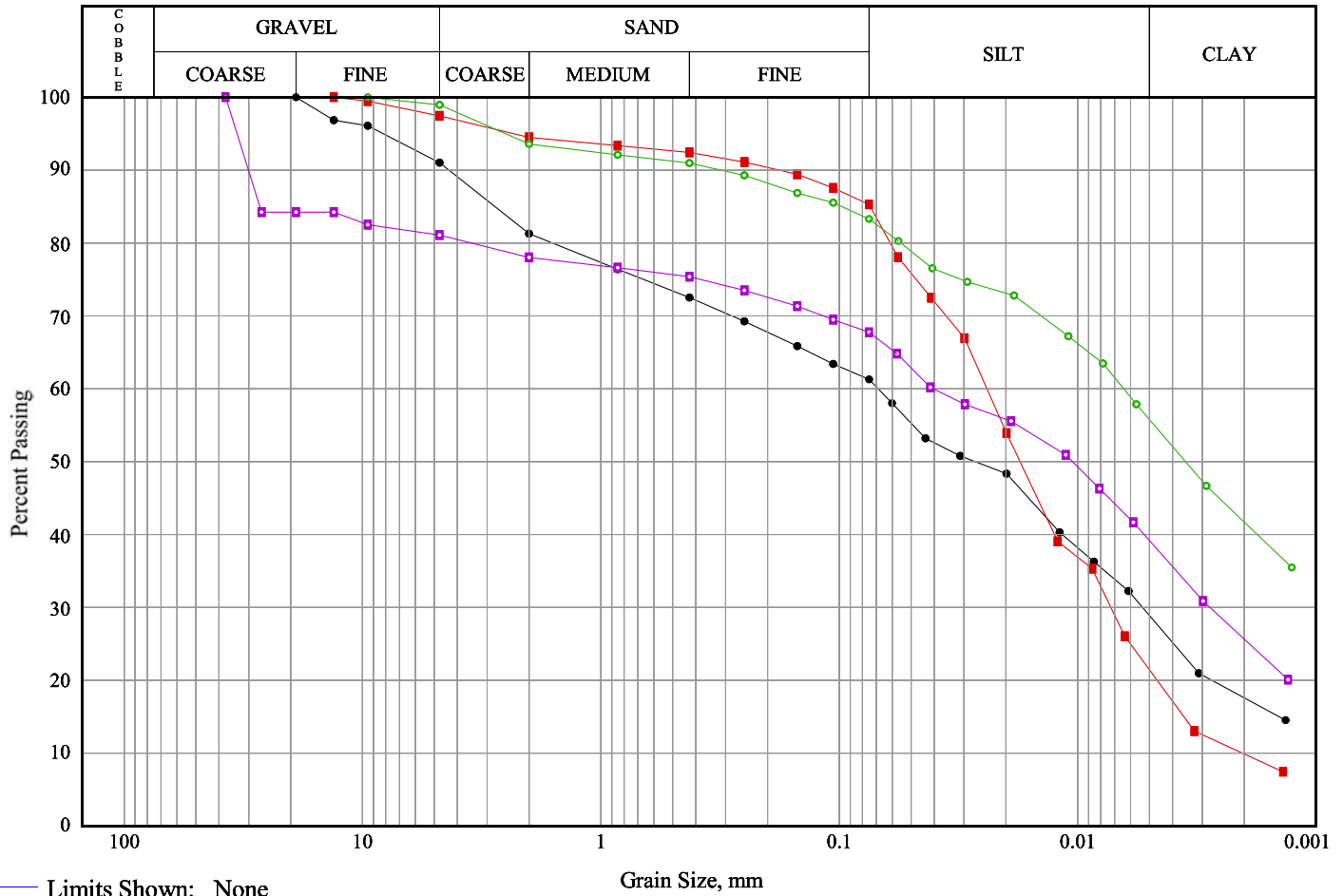
Atterberg Limits Testing

Rock Core Testing



Line Symbol	Sample	Borehole/ Test Pit	Sample Number	Depth	% Cob.+ Gravel	% Sand	% Silt	% Clay
—●—	(GP-GM) Sandy SILTY GRAVEL TILL	BH23-10D	SA-11	12.2-12.7	51.4	24.7	23.9	
—■—	(GP-GM) Sandy SILTY GRAVEL TILL	BH23-11	SA-06	5.2-5.6	56.0	26.7	17.3	
—○—	(SM) Gravelly SILTY SAND	BH23-18	SA-09	9.1-9.5	25.8	42.9	31.2	
—□—	(SM/ML) Gravelly SILT and SAND	BH23-18	SA-14	15.2-15.5	27.5	27.8	44.7	

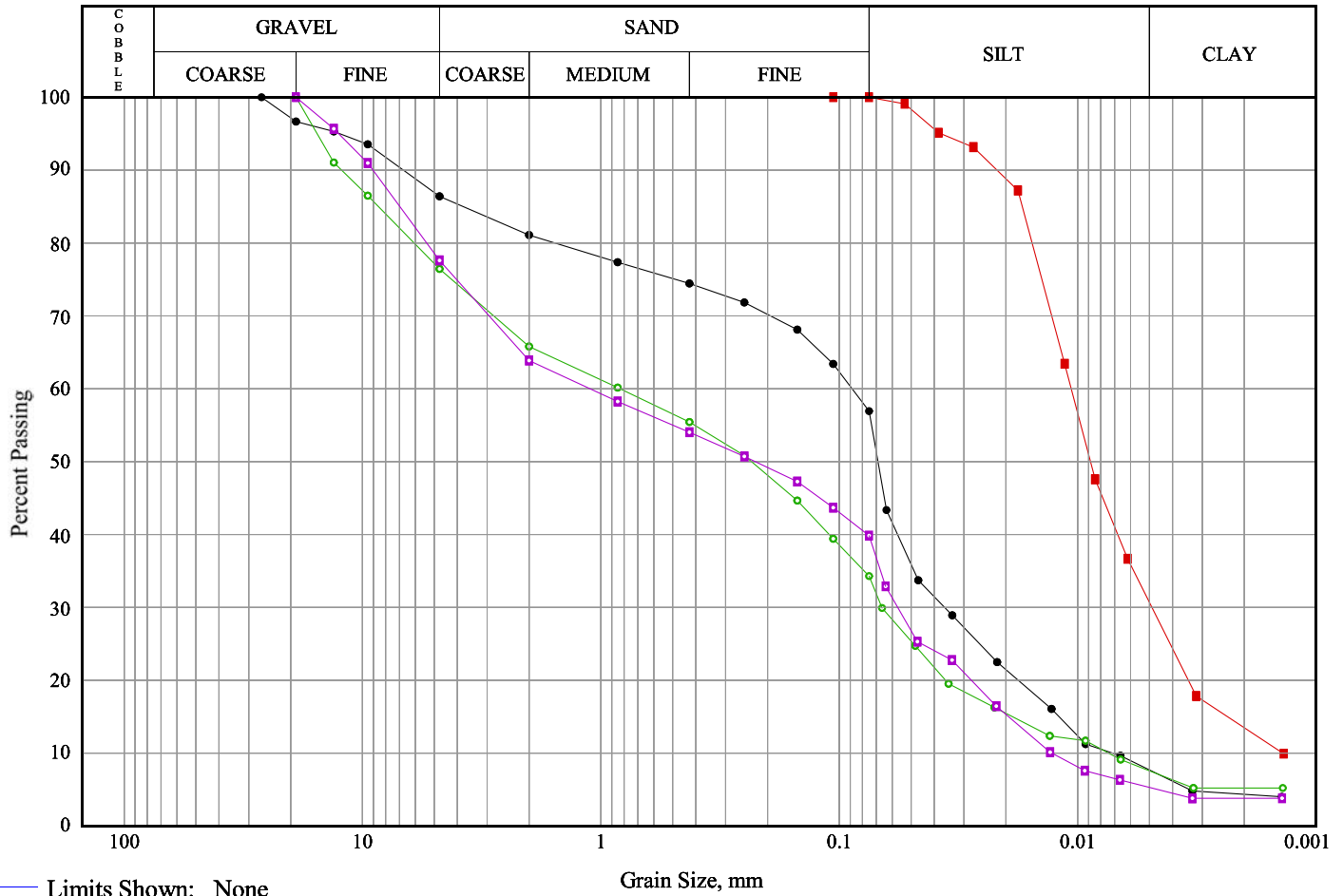
Line Symbol	CanFEM Classification	USCS Symbol	D <sub>10</sub>	D <sub>15</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>85</sub>	% 5-75µm
—●—	Sandy silty gravel	N/A	---	---	0.30	5.21	11.57	24.87	---
—■—	Sandy gravel , some silt	N/A	---	---	0.63	7.71	12.60	22.51	---
—○—	Gravelly silty sand	N/A	---	---	---	0.45	1.17	11.98	---
—□—	Gravelly sandy silt	N/A	---	---	---	0.13	0.61	11.51	---



Line Symbol	Sample	Borehole/ Test Pit	Sample Number	Depth	% Cob.+ Gravel	% Sand	% Silt	% Clay
—●—	(CL-ML) Sandy SILTY CLAY to CLAYEY SILT TILL	BH23-02	SA-06	4.6-5.0	9.0	29.7	32.4	28.9
—■—	(ML) Sandy SILT	BH23-02	SA-10	10.7-10.8	2.5	12.2	63.9	21.4
—○—	(CL) SILTY CLAY	BH23-05	SA-08	7.6-8.1	1.0	15.7	27.5	55.8
—□—	(CL) Gravelly sandy SILTY CLAY TILL	BH23-06D	SA-08	7.6-8.0	18.9	13.3	28.6	39.2

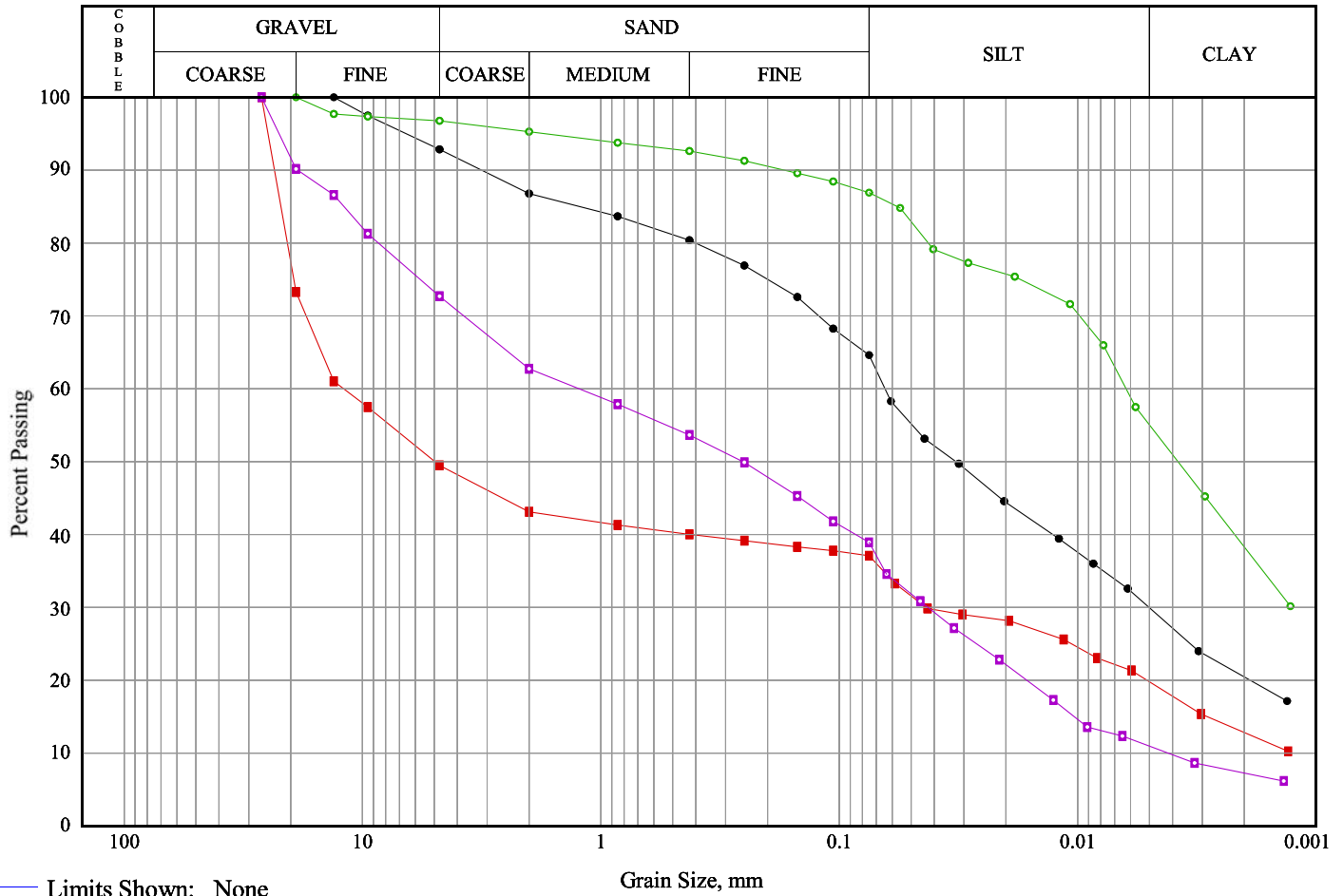
Line Symbol	CanFEM Classification	USCS Symbol	D <sub>10</sub>	D <sub>15</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>85</sub>	% 5-75µm
—●—	Clayey sand and silt, trace gravel	N/A	---	0.00	0.01	0.03	0.07	2.78	32.4
—■—	Clayey silt, some sand, trace gravel	N/A	0.00	0.00	0.01	0.02	0.02	0.07	63.9
—○—	Silty clay, some sand, trace gravel	N/A	---	---	---	0.00	0.01	0.10	27.5
—□—	Silty clay, some gravel, some sand	CL	---	---	0.00	0.01	0.04	26.95	28.6





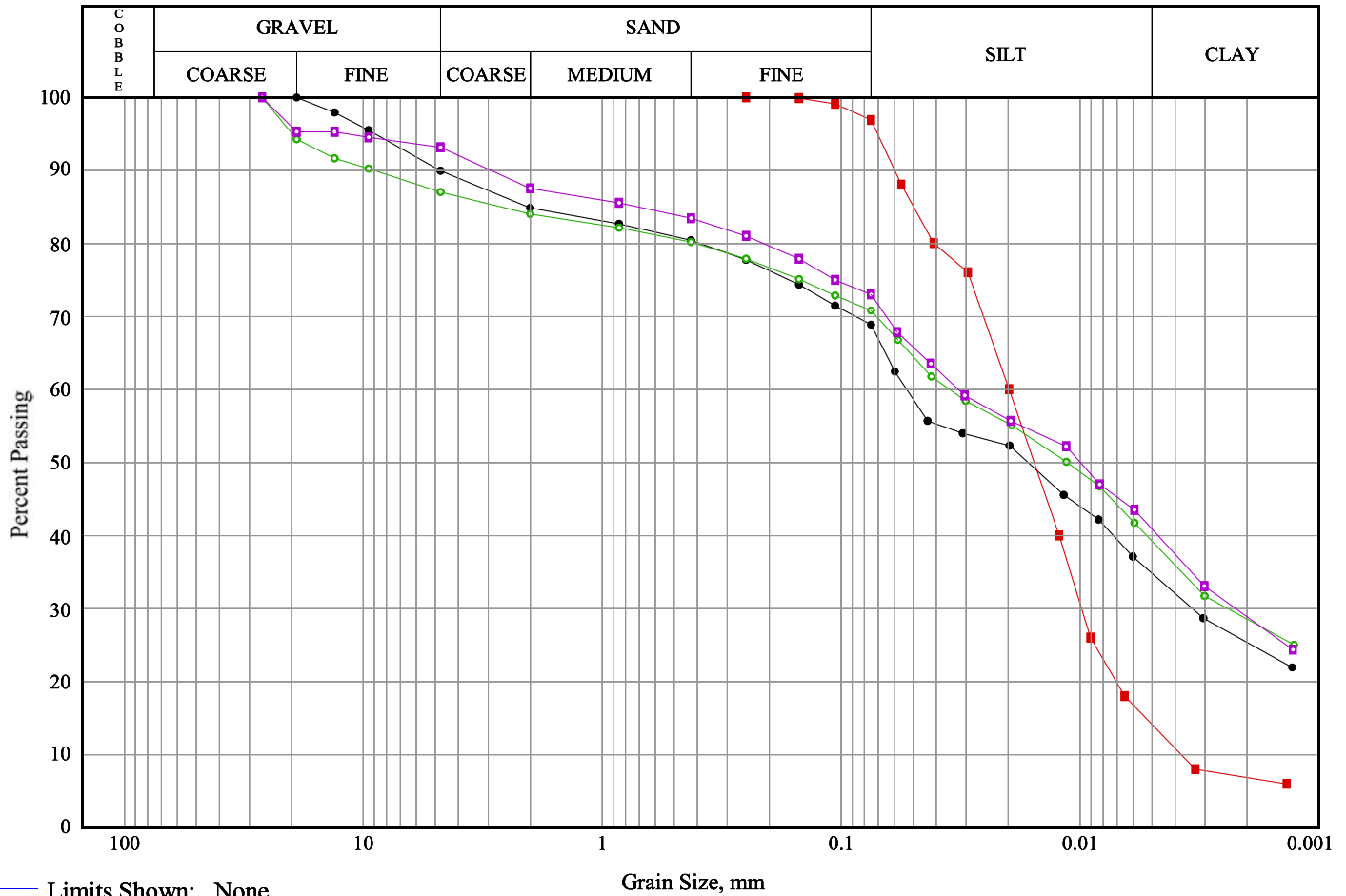
Line Symbol	Sample	Borehole/ Test Pit	Sample Number	Depth	% Cob.+ Gravel	% Sand	% Silt	% Clay
—●—	(ML) Gravelly Sandy SILT	BH23-06D	SA-11	12.2-12.5	13.6	29.5	49.2	7.7
—■—	(ML) SILT	BH23-10D	SA-08	7.6-8.1	0.0	0.0	69.3	30.7
—○—	(SM) Gravelly SILTY SAND	BH23-12	SA-04	2.3-2.6	23.6	42.2	26.7	7.6
—□—	(SM) Gravelly SILTY SAND	BH23-12	SA-07	6.1-6.2	22.4	37.8	34.6	5.3

Line Symbol	CanFEM Classification	USCS Symbol	D <sub>10</sub>	D <sub>15</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>85</sub>	% 5-75µm
—●—	Sandy silt, some gravel , trace clay	N/A	0.01	0.01	0.04	0.07	0.09	3.78	49.2
—■—	Clayey silt, trace sand	N/A	0.00	0.00	0.00	0.01	0.01	0.02	69.3
—○—	Gravelly silty sand, trace clay	N/A	0.01	0.02	0.07	0.23	0.83	8.57	26.7
—□—	Gravelly silty sand, trace clay	N/A	0.01	0.02	0.06	0.23	1.11	6.97	34.6



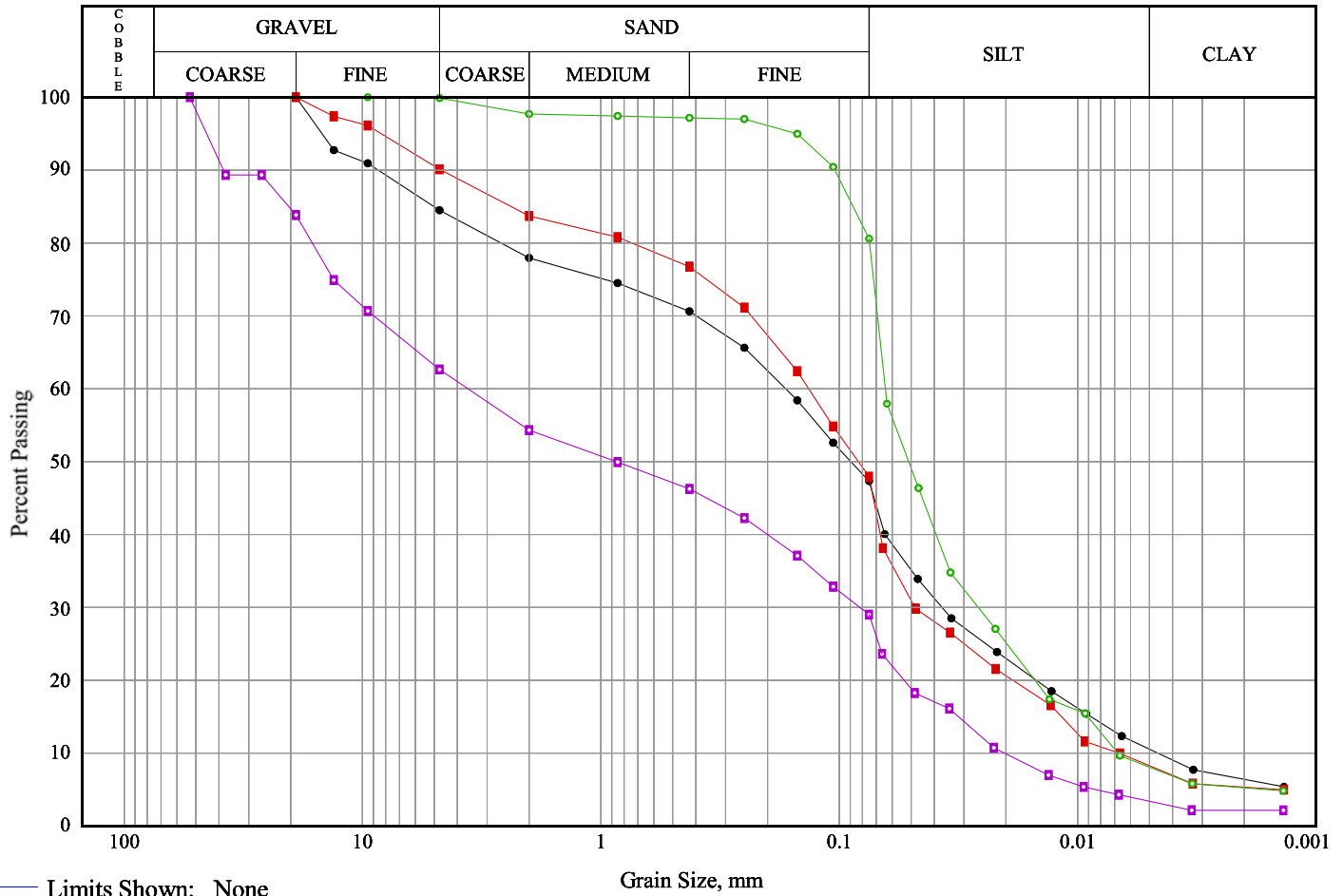
Line Symbol	Sample	Borehole/ Test Pit	Sample Number	Depth	% Cob.+ Gravel	% Sand	% Silt	% Clay
—●—	(CL-ML) Sandy SILTY CLAY to CLAYEY SILT TILL	BH23-17D/S	SA-07	6.1-6.6	7.2	28.2	34.7	30.0
—■—	(GM/GP) Sandy SILTY GRAVEL TILL	BH23-17D/S	SA-11	12.2-12.4	50.5	12.4	17.3	19.8
—○—	(CL) SILTY CLAY	BH23-19	SA-07	6.1-6.6	3.2	9.8	31.9	55.1
—□—	(SM) Gravelly SILTY SAND	BH23-19	SA-09	9.1-9.4	27.3	33.8	28.0	11.0

Line Symbol	CanFEM Classification	USCS Symbol	D <sub>10</sub>	D <sub>15</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>85</sub>	% 5-75µm
—●—	Clayey sand and silt, trace gravel	CL-ML	---	---	0.01	0.03	0.06	1.23	34.7
—■—	Gravel, some sand, some silt, some clay	N/A	---	0.00	0.04	4.97	12.01	21.98	17.3
—○—	Silty clay, trace gravel, trace sand	CL	---	---	---	0.00	0.01	0.06	31.9
—□—	Gravel and sand and silt, some clay	N/A	0.00	0.01	0.04	0.25	1.23	11.96	28.0



Line Symbol	Sample	Borehole/ Test Pit	Sample Number	Depth	% Cob.+ Gravel	% Sand	% Silt	% Clay
—●—	(CL) Sandy SILTY CLAY TILL	BH23-20	SA-07	6.1-6.6	10.0	21.1	34.1	34.8
—■—	(ML) SILT	BH23-21D	SA-08	7.6-8.1	0.0	3.1	82.8	14.1
—○—	(CL) Sandy SILTY CLAY	BH23-22D/S	SA-07	6.1-6.6	12.9	16.2	31.6	39.2
—□—	(CL) Sandy SILTY CLAY TILL	BH23-23D/S	SA-07	6.1-6.6	6.8	20.2	32.1	40.9

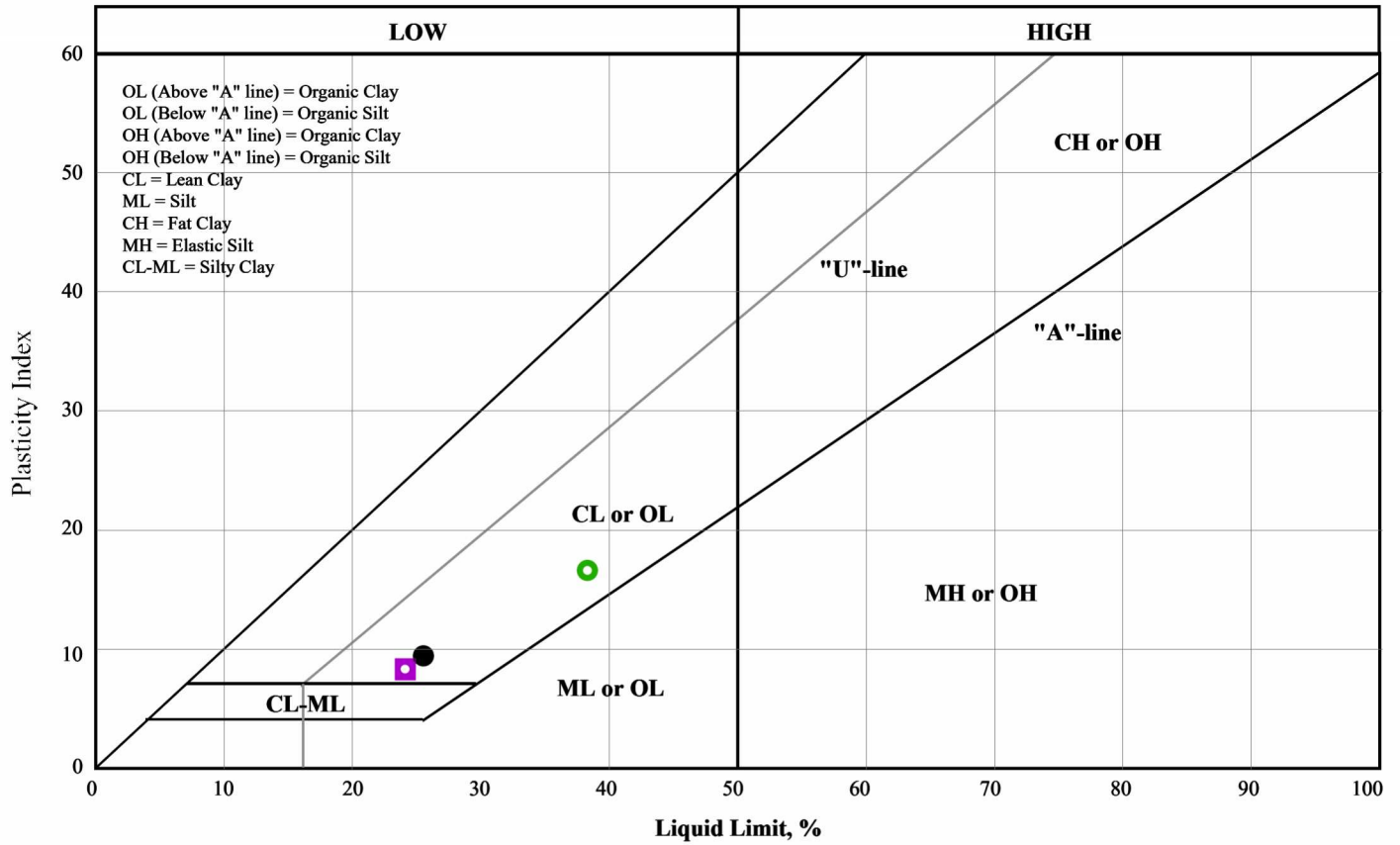
Line Symbol	CanFEM Classification	USCS Symbol	D <sub>10</sub>	D <sub>15</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>85</sub>	% 5-75µm
—●—	Clayey sand and silt, some gravel	CL	---	---	0.00	0.02	0.05	2.04	34.1
—■—	Silt, some clay, trace sand	N/A	0.00	0.01	0.01	0.02	0.02	0.05	82.8
—○—	Silty clay, some gravel, some sand	N/A	---	---	0.00	0.01	0.04	2.63	31.6
—□—	Sandy silty clay, trace gravel	CL	---	---	0.00	0.01	0.03	0.70	32.1



Line Symbol	Sample	Borehole/ Test Pit	Sample Number	Depth	% Cob.+ Gravel	% Sand	% Silt	% Clay
—●—	(SM/ML) Gravelly SAND and SILT	BH23-23D	SA-09	9.1-9.2	15.5	37.2	36.8	10.5
—■—	(SM/ML) SAND and SILT	BH23-26	SA-10	10.7-10.8	9.9	42.2	39.7	8.3
—○—	(ML) Sandy SILT	BH23-28D/S	SA-08	7.6-8.1	0.1	19.3	72.5	8.1
—□—	(SM/GM) SILTY SAND and GRAVEL	BH23-28D	SA-11	12.2-12.7	37.4	33.6	25.6	3.4

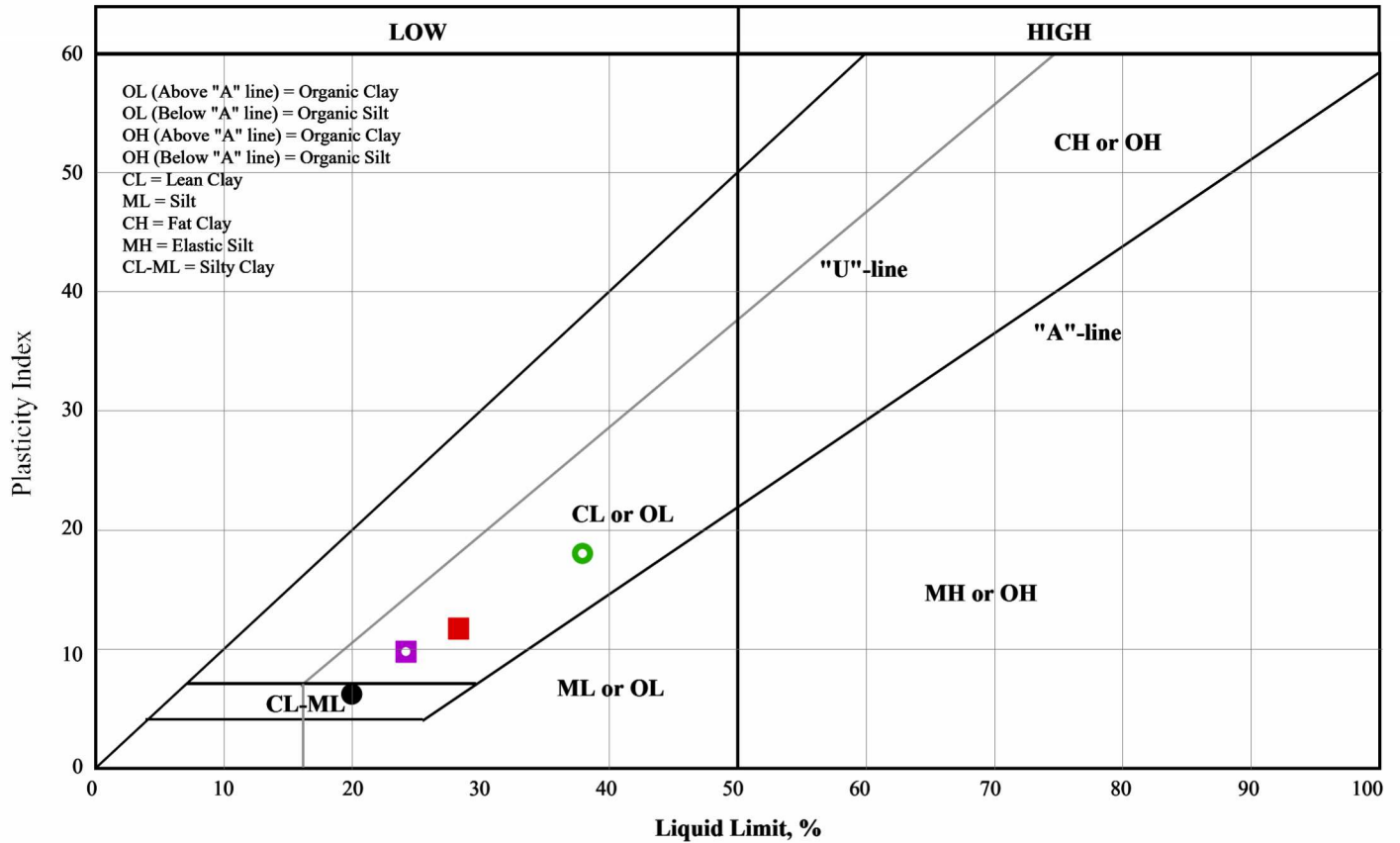
Line Symbol	CanFEM Classification	USCS Symbol	D <sub>10</sub>	D <sub>15</sub>	D <sub>30</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>85</sub>	% 5-75µm
—●—	Sand and silt, some gravel, some clay	N/A	0.00	0.01	0.04	0.09	0.17	5.02	36.8
—■—	Sand and silt, trace gravel, trace clay	N/A	0.01	0.01	0.05	0.08	0.13	2.38	39.7
—○—	Silt, some sand, trace gravel, trace clay	N/A	0.01	0.01	0.03	0.05	0.06	0.09	72.5
—□—	Sandy silty gravel, trace clay	N/A	0.02	0.03	0.08	0.86	3.61	20.38	25.6



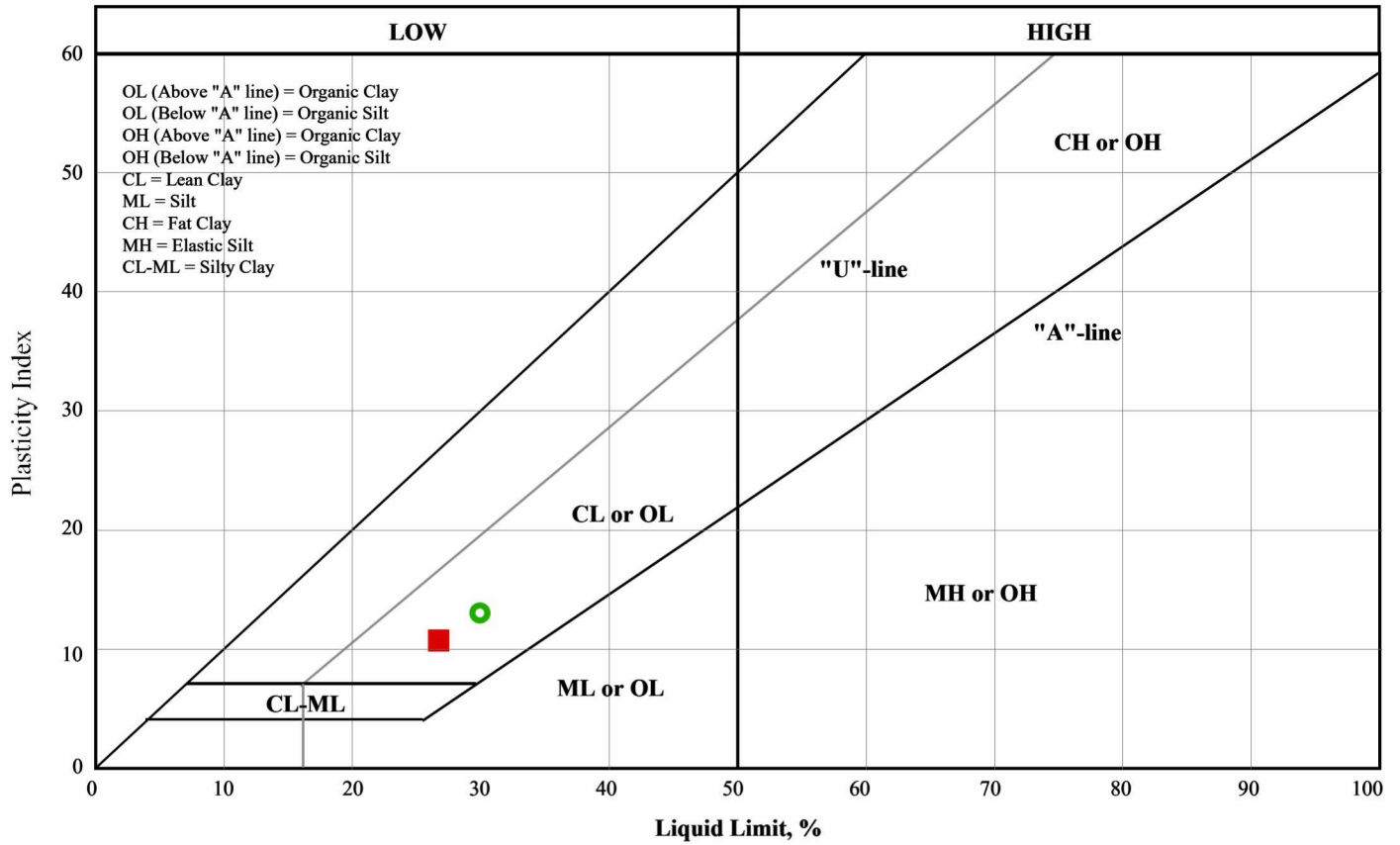


Symbol	Borehole /Test Pit	Sample Number	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Non-Plastic	Moisture Content, %
●	BH23-06D	SA-08	7.6-8.0	25.5	16.1	9.4	<input type="checkbox"/>	7.7
■	BH23-10	SA-08	7.6-8.1				<input checked="" type="checkbox"/>	18.3
○	BH23-14	SA-05	3.1-3.5	38.3	21.7	16.6	<input type="checkbox"/>	22.5
◻	BH23-16	SA-06	4.6-5.0	24.1	15.8	8.3	<input type="checkbox"/>	14.5

Note: More information available upon request



Symbol	Borehole /Test Pit	Sample Number	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Non-Plastic	Moisture Content, %
●	BH23-17D/S	SA-07	6.1-6.6	20.0	13.7	6.2	<input type="checkbox"/>	13.7
■	BH23-19	SA-07	6.1-6.6	28.3	16.5	11.7	<input type="checkbox"/>	16.1
○	BH23-20	SA-04	2.3-2.7	37.9	19.9	18.0	<input type="checkbox"/>	25.9
◻	BH23-20	SA-07	6.1-6.6	24.2	14.4	9.8	<input type="checkbox"/>	11.8



Symbol	Borehole /Test Pit	Sample Number	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Non-Plastic	Moisture Content, %
●	BH23-21D	SA-08	7.6-8.1				<input checked="" type="checkbox"/>	18.3
■	BH23-23D/S	SA-07	6.1-6.6	26.7	16.0	10.7	<input type="checkbox"/>	12.9
○	BH23-27	SA-05	3.1-3.5	29.9	16.9	13.0	<input type="checkbox"/>	13.7







## **APPENDIX E**

### **Rock Core Photos**

Rock Core Photographs for BH23-11,  
BH23-12 and BH23-17

**BOREHOLE:** BH23-11

**BORING DATE:** March 13, 2023

**DEPTH:** 6.8 m to 11.0 m bgs

6.8 m



8.5 m

8.7 m



RC23-11



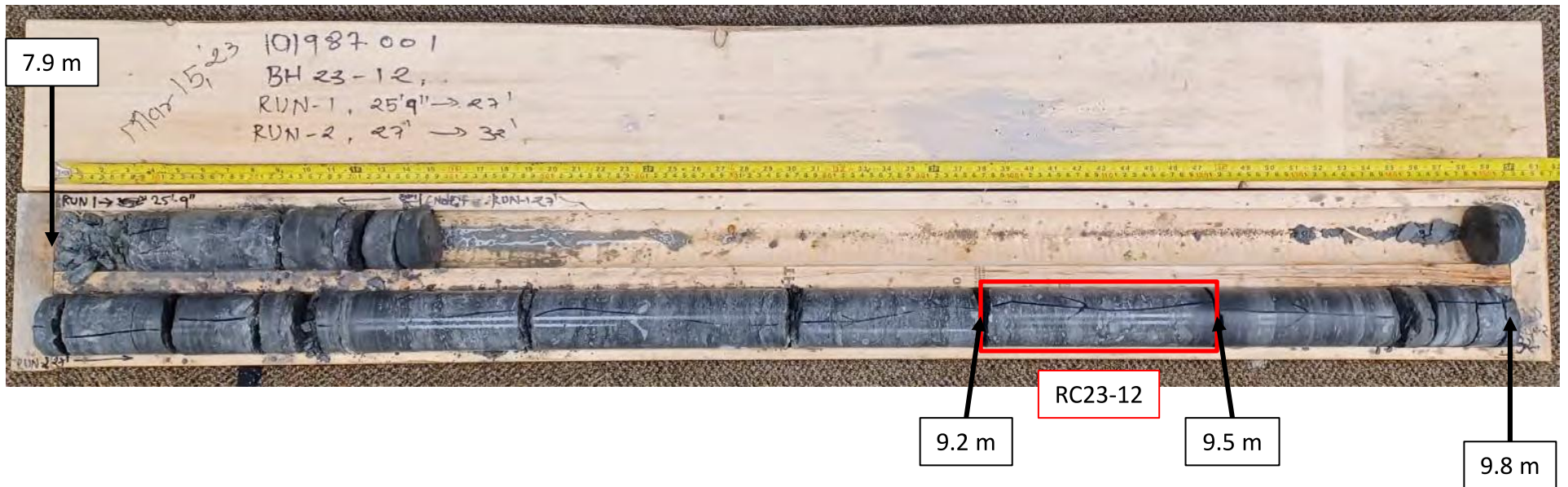
11.0 m



**BOREHOLE:** BH23-12

**BORING DATE:** March 15, 2023

**DEPTH:** 7.9 m to 9.8 m bgs





**BOREHOLE:** BH23-17

**BORING DATE:** February 27, 2023

**DEPTH:** 13.3 m to 16.0 m bgs





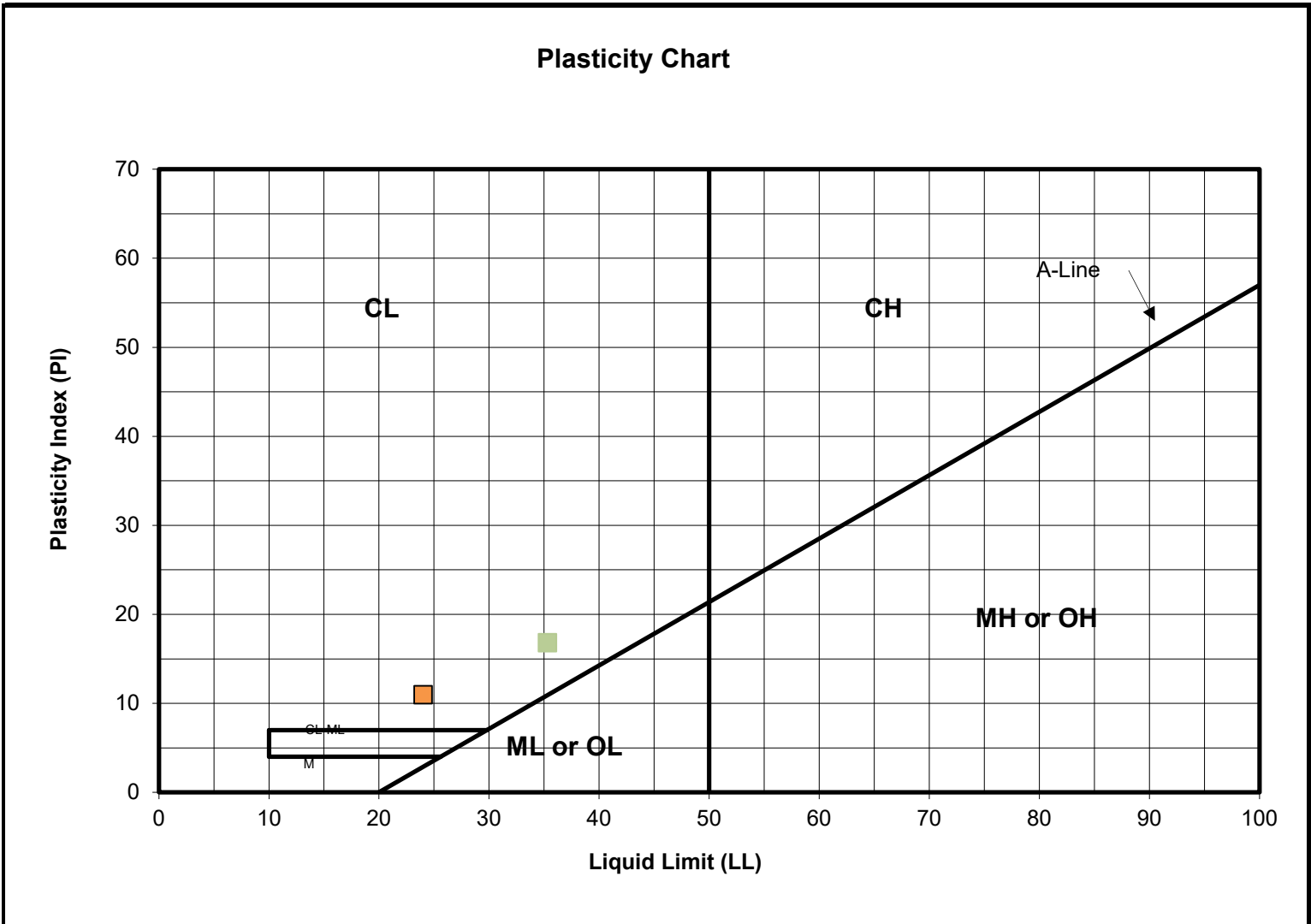


## **Appendix E5 – Soil Index Laboratory Results**

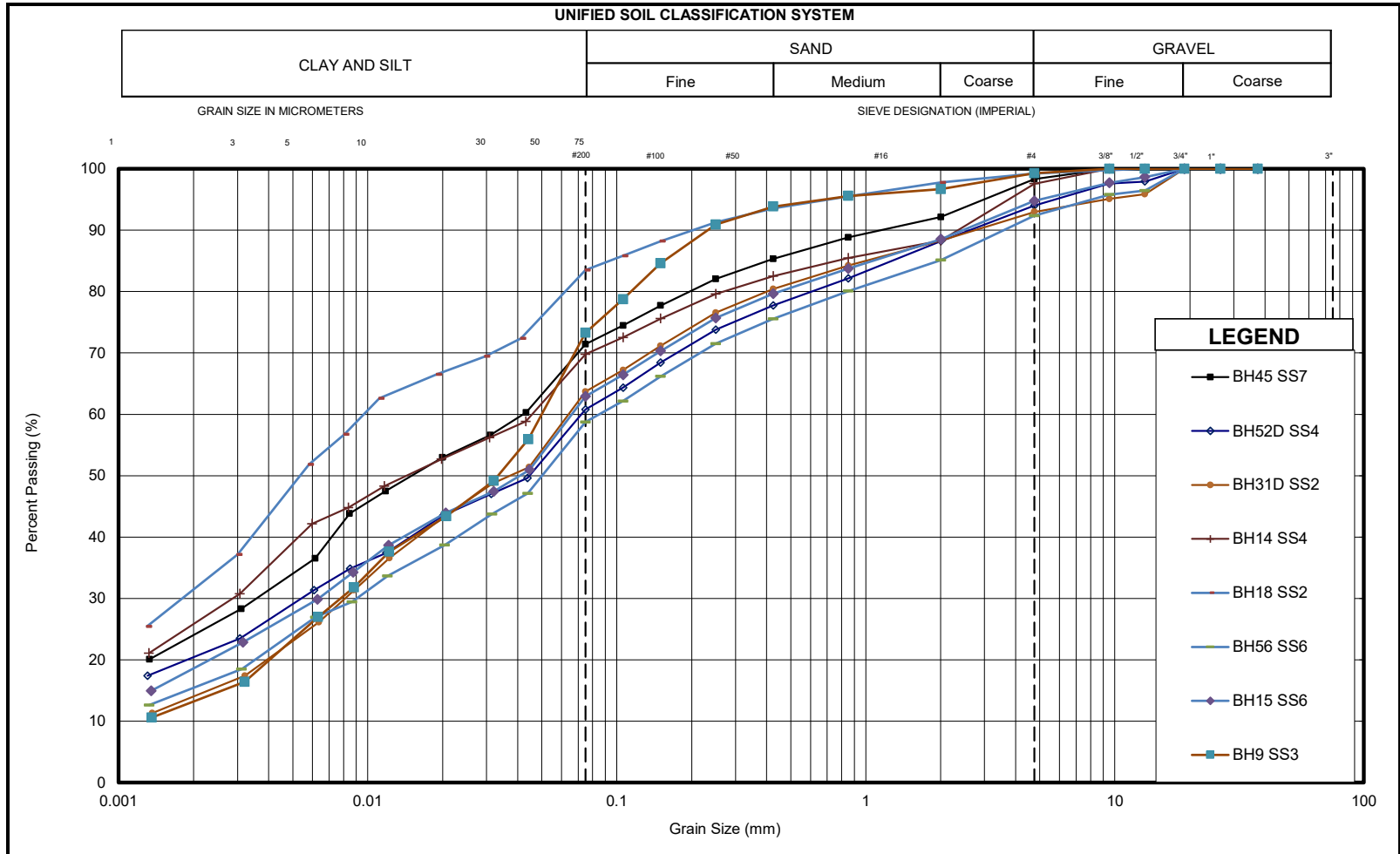
Project Name: Mayfield Tullamore SWS  
 Project No.: 2400278  
 Client: Mayfield Tullamore Landowner Group Inc.

Appendix: B  
 Date Tested: June 5, 2024  
 Date Sampled: -

SAMPLE INFORMATION								
SAMPLE ID	BH45 SS7	LIQUID LIMIT (LL):	24	PLASTIC LIMIT (PL)	13.0	PLASTIC INDEX (PI)	11.0	
SAMPLE ID	BH102 SS15	LIQUID LIMIT (LL):	-	PLASTIC LIMIT (PL)	-	PLASTIC INDEX (PI)	Non-Plastic	-
SAMPLE ID	BH9 SS9	LIQUID LIMIT (LL):	-	PLASTIC LIMIT (PL)	-	PLASTIC INDEX (PI)	Non-Plastic	-
SAMPLE ID	BH18 SS2	LIQUID LIMIT (LL):	35.3	PLASTIC LIMIT (PL)	18.5	PLASTIC INDEX (PI)	16.8	



Prepared By: D. Gorry



Sample	Description	Gr.	Sa.	Si.	Cl.	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	C <sub>u</sub>	C <sub>c</sub>
BH45 SS7	CLAYEY SANDY SILT GLACIAL TILL, Trace Gravel	2	27	47	24	-	0.004	0.042	-	-
BH52D SS4	CLAYEY SANDY SILT GLACIAL TILL, Trace Gravel	6	33	40	21	-	0.005	0.072	-	-
BH31D SS2	SANDY SILT GLACIAL TILL, Some Clay, Trace Gravel	7	29	50	14	-	0.008	0.071	-	-
BH14 SS4	CLAYEY SANDY SILT GLACIAL TILL, Trace Gravel	2	28	44	26	-	0.003	0.046	-	-
BH18 SS2	CLAYEY SILT GLACIAL TILL, Some Sand, Trace Gravel	1	16	52	31	-	0.002	0.010	-	-
BH56 SS6	SANDY SILT GLACIAL TILL, Some Clay, Trace Gravel	8	34	43	15	-	0.009	0.085	-	-
BH15 SS6	SANDY SILT GLACIAL TILL, Some Clay, Trace Gravel	5	32	44	19	-	0.006	0.066	-	-
BH9 SS3	SANDY SILT GLACIAL TILL, Some Clay, Trace Gravel	1	26	60	13	-	0.008	0.050	-	-



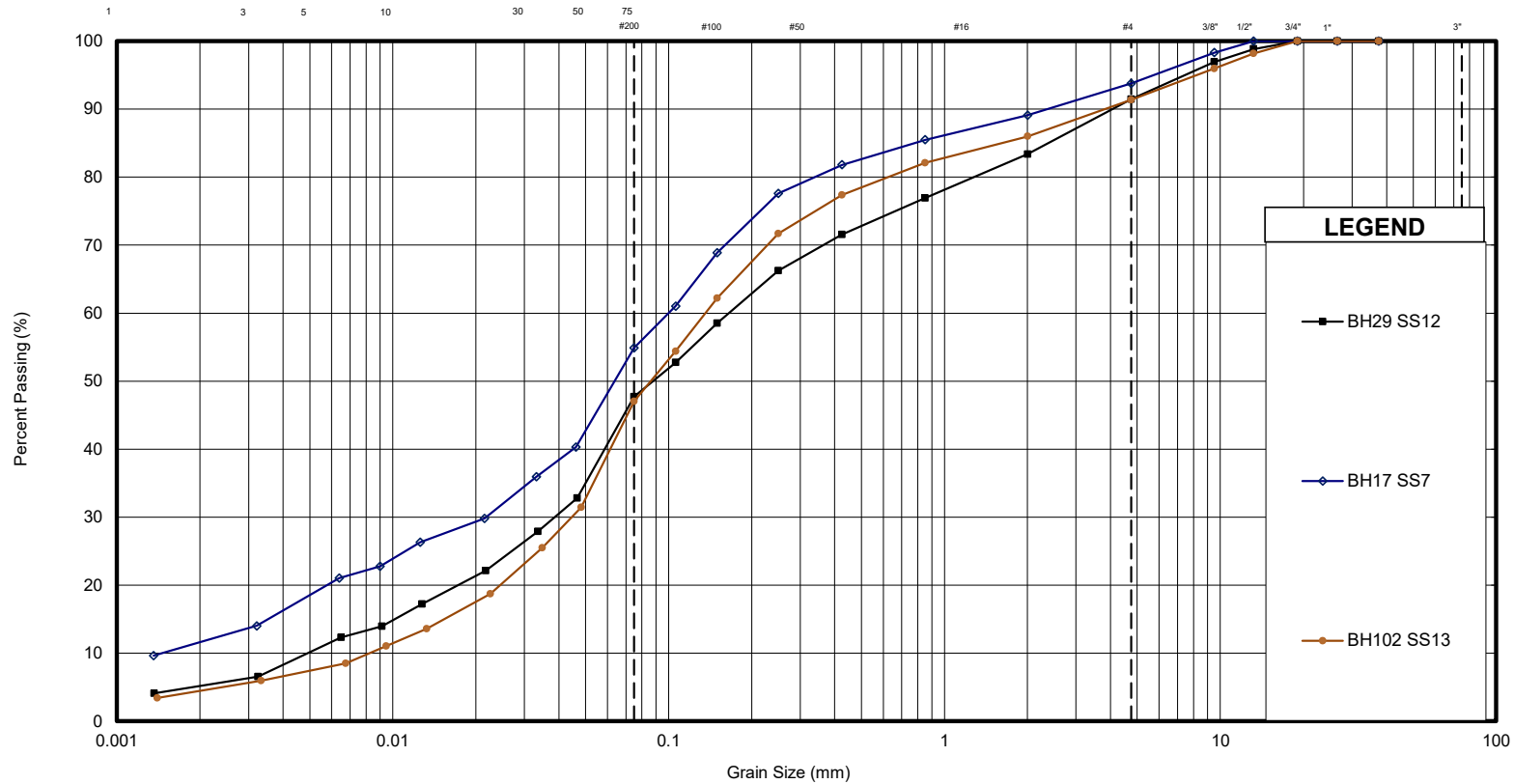
GRAIN SIZE DISTRIBUTION - Mayfield Tullamore SWS

**CLAYEY to SANDY SILT GLACIAL TILL**

APPENDIX	B1
REF. No.	2400278
DATE	June 2024

UNIFIED SOIL CLASSIFICATION SYSTEM

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Sample	Description	Gr.	Sa.	Si.	Cl.	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	C <sub>u</sub>	C <sub>c</sub>
BH29 SS12	SAND AND SILT GLACIAL TILL, Trace Gravel, Trace Clay	9	44	43	5	0.005	0.039	0.165	33.6	1.8
BH17 SS7	SAND AND SILT GLACIAL TILL, Some Clay, Trace Gravel	6	39	43	12	0.011	0.022	0.100	9.0	0.4
BH102 SS13	SAND AND SILT GLACIAL TILL, Trace Gravel, Trace Clay	9	44	43	4	0.080	0.044	0.136	16.5	1.8



GRAIN SIZE DISTRIBUTION - Mayfield Tullamore SWS

**SAND & SILT GLACIAL TILL**

APPENDIX B2

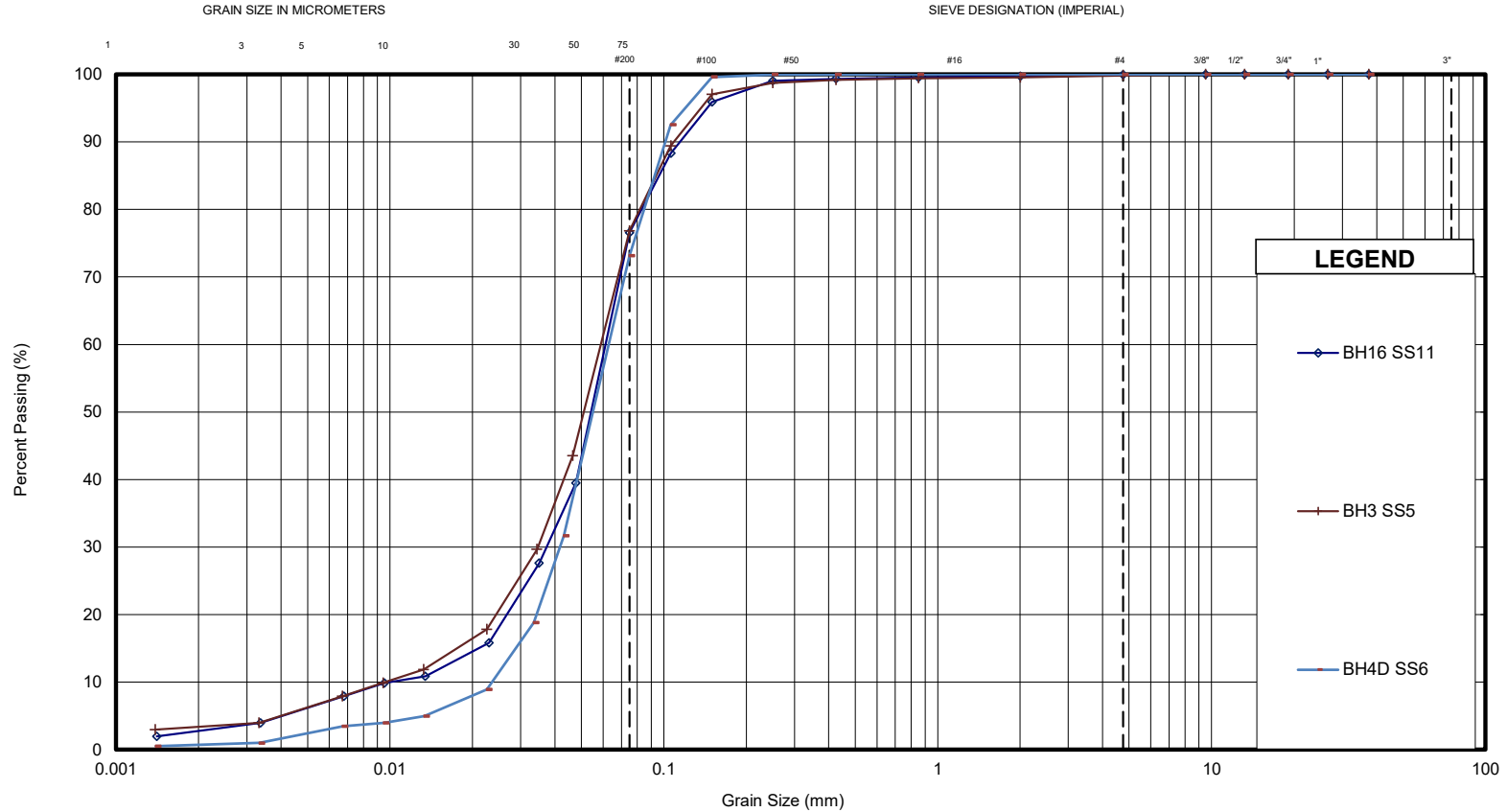
REF. No. 2400278

DATE June 2024



**UNIFIED SOIL CLASSIFICATION SYSTEM**

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Sample	Description	Gr.	Sa.	Si.	Cl.	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	C <sub>u</sub>	C <sub>c</sub>
BH16 SS11	SANDY SILT, Trace Clay	-	23	74	3	0.010	0.037	0.061	6.1	2.3
BH3 SS5	SANDY SILT, Trace Clay	-	23	73	4	0.010	0.035	0.059	6.1	2.1
BH4D SS6	SANDY SILT, Trace Clay	-	27	72	1	0.024	0.042	0.063	2.7	1.2



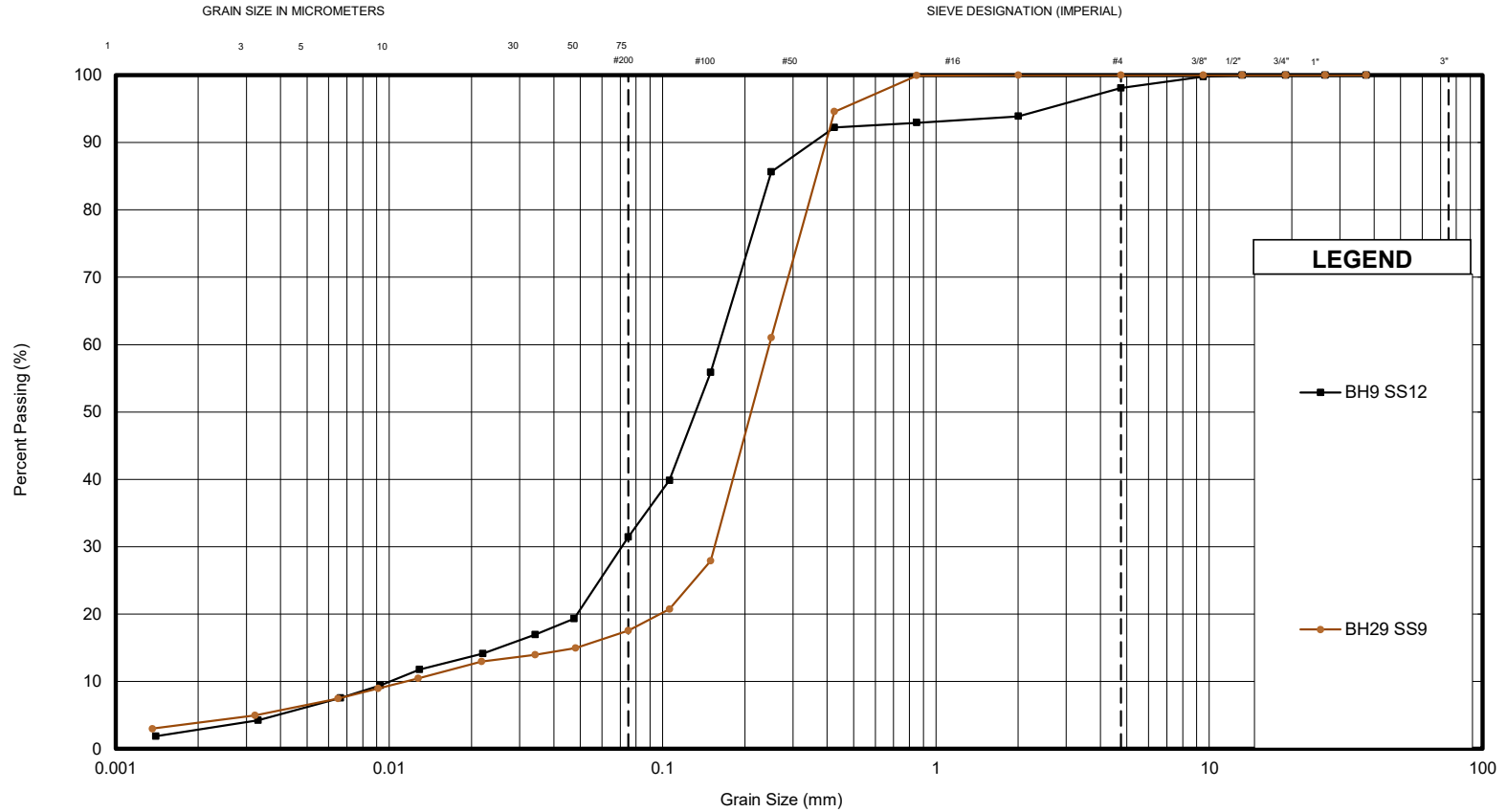
GRAIN SIZE DISTRIBUTION - Mayfield Tullamore SWS

**SANDY SILT**

APPENDIX	B3
REF. No.	2400278
DATE	June 2024

**UNIFIED SOIL CLASSIFICATION SYSTEM**

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Sample	Description	Gr.	Sa.	Si.	Cl.	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	C <sub>u</sub>	C <sub>c</sub>
BH9 SS12	SILTY SAND, Trace Gravel, Trace Clay	2	67	29	2	0.010	0.071	0.161	16.0	3.1
BH29 SS9	SAND, Some Silt, Trace Clay	-	82	14	4	0.012	0.155	0.246	21.4	8.5



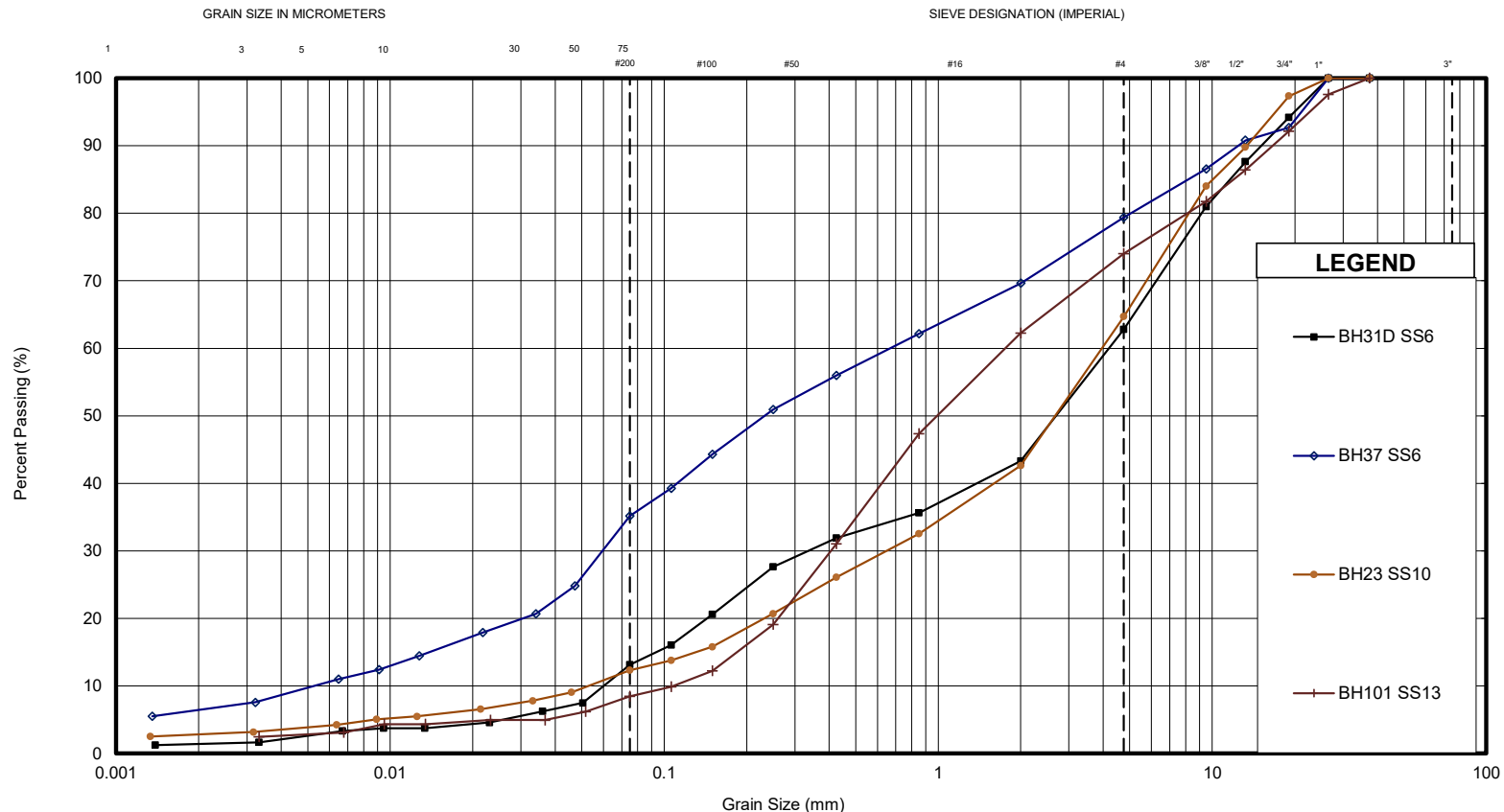
GRAIN SIZE DISTRIBUTION - Mayfield Tullamore SWS

**SILTY SAND to SAND**

APPENDIX	B4
REF. No.	2400278
DATE	June 2024

**UNIFIED SOIL CLASSIFICATION SYSTEM**

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Sample	Description	Gr.	Sa.	Si.	Cl.	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	C <sub>u</sub>	C <sub>c</sub>
BH31D SS6	SAND & GRAVEL, Some Silt, Trace Clay	37	50	12	1	0.060	0.335	4.198	69.7	0.5
BH37 SS6	GRAVELLY SILTY SAND, Trace Clay	21	44	29	6	0.005	0.060	0.668	126.8	1.0
BH23 SS10	SAND & GRAVEL, Some Silt, Trace Clay	35	52	10	3	0.053	0.648	3.954	74.9	2.0
BH101 SS13	GRAVELLY SAND, Trace Silt	26	66	8	-	0.108	0.406	1.758	16.2	0.9



GRAIN SIZE DISTRIBUTION - Mayfield Tullamore SWS

**SAND & GRAVEL to GRAVELLY SAND**

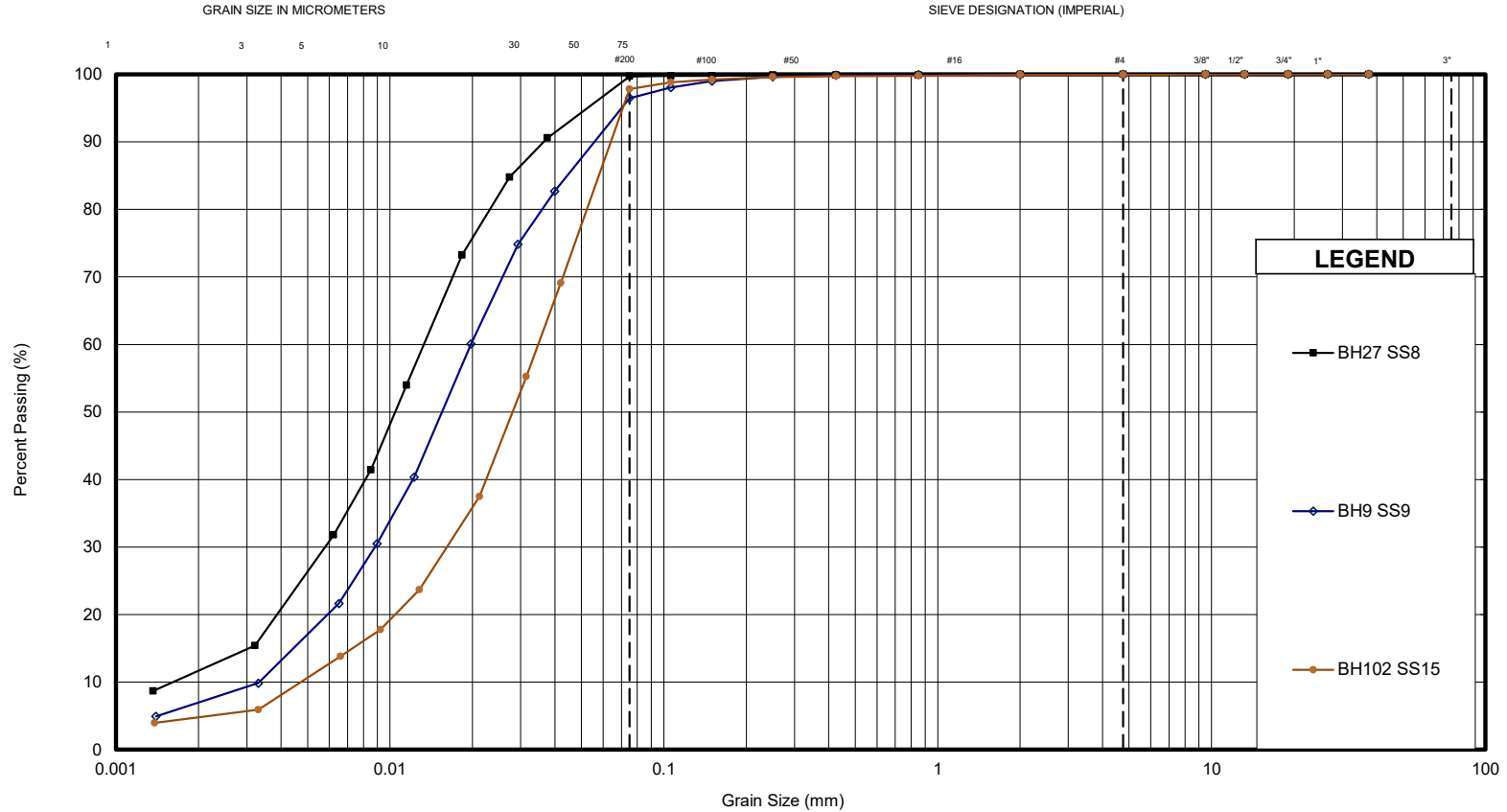
APPENDIX B5

REF. No. 2400278

DATE June 2024

**UNIFIED SOIL CLASSIFICATION SYSTEM**

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Sample	Description	Gr.	Sa.	Si.	Cl.	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	C <sub>u</sub>	C <sub>c</sub>
BH27 SS8	SILT, Some Clay	-	-	88	12	0.002	0.006	0.013	8.2	1.6
BH9 SS9	SILT, Trace Clay, Trace Sand	-	4	90	6	0.003	0.009	0.020	5.9	1.2
BH102 SS15	SILT, Trace Clay, Trace Sand	-	2	93	5	0.005	0.016	0.035	7.4	1.6



GRAIN SIZE DISTRIBUTION - Mayfield Tullamore SWS

**SILT**

APPENDIX B6

REF. No. 2400278

DATE June 2024

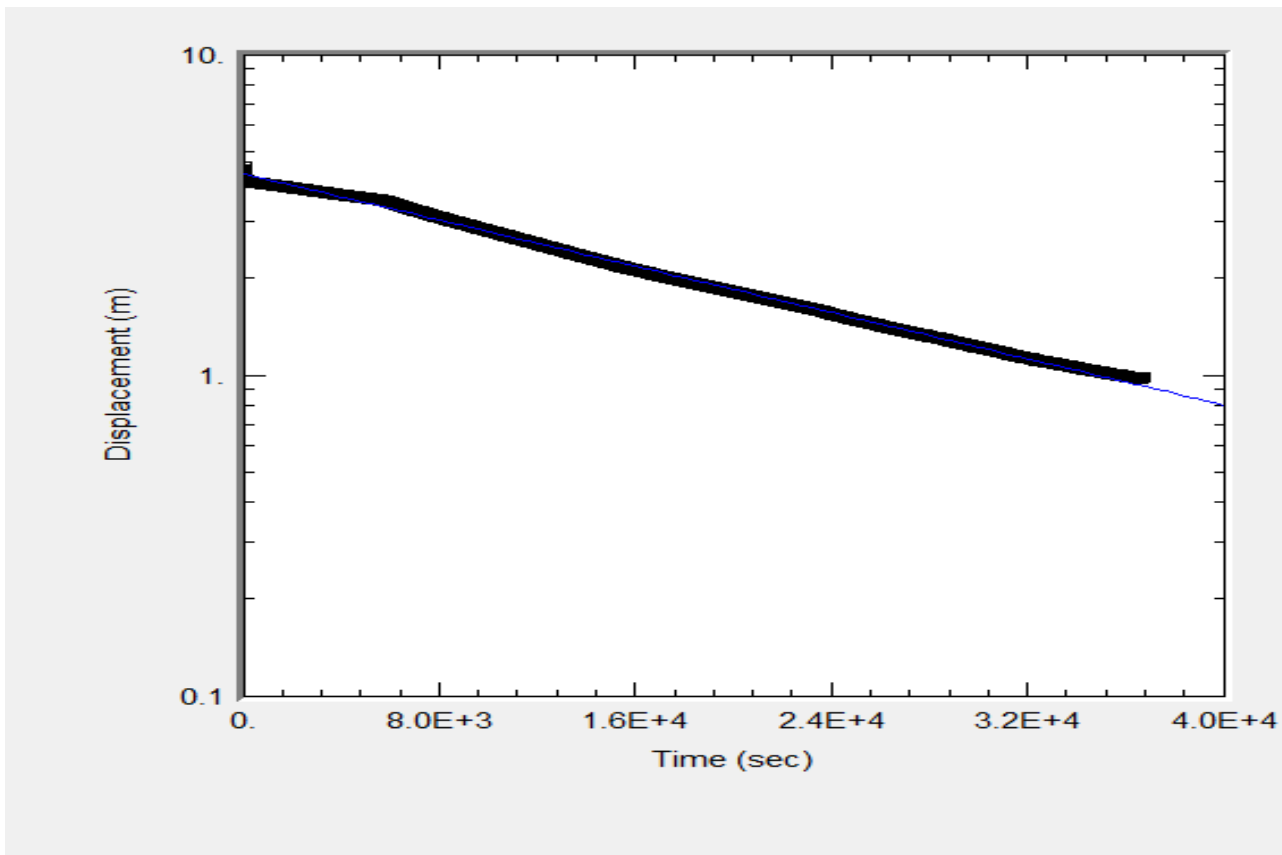


## **Appendix E6 – Hydraulic Conductivity Testing**

**Estimation of K by Slug Test, based on Horslev equation**

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

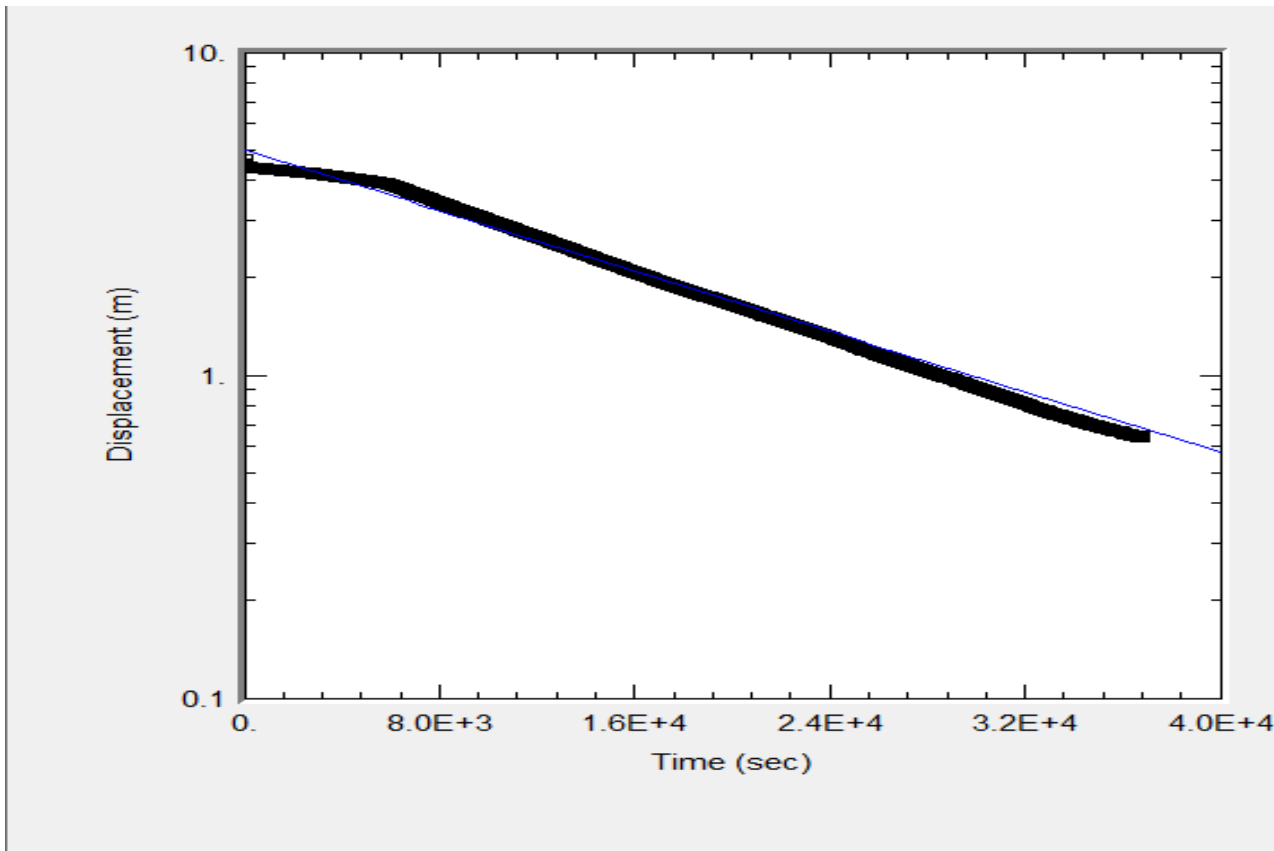
Well Number:	NW 24S	
Well Screen Bottom:	4.10	mbgs
Top of Pipe:	0.69	mags
Well Casing Diameter:	5.08	cm
Static Water Level:	1.19	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	<b><math>3.2 \times 10^{-7}</math></b>	m/s



**Estimation of K by Slug Test, based on Horslev equation**

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

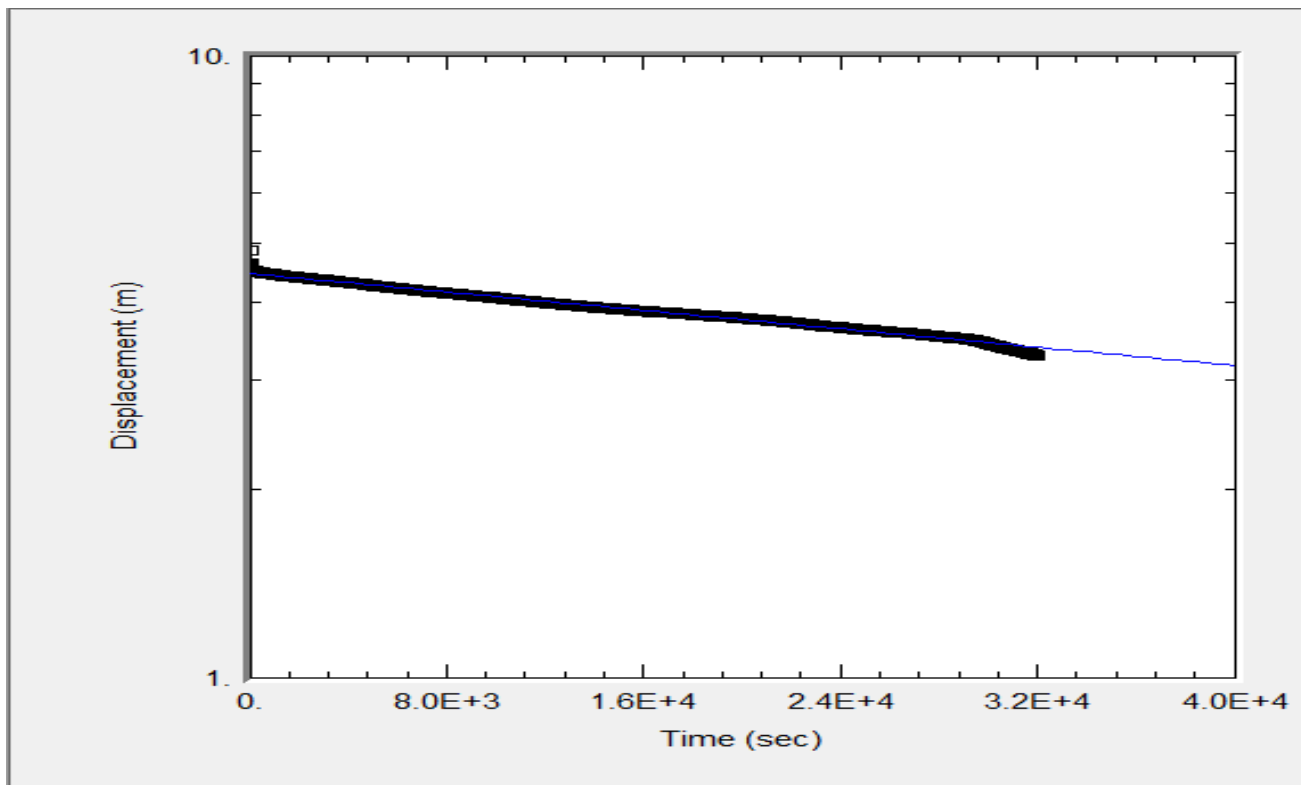
Well Number:	NW 24D	
Well Screen Bottom:	6.10	mbgs
Top of Pipe:	0.78	mags
Well Casing Diameter:	5.08	cm
Static Water Level:	0.73	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	$2.7 \times 10^{-7}$	m/s



### Estimation of K by Slug Test, based on Horslev equation

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

Well Number:	MW 101	
Well Screen Bottom:	6.70	mbgs
Top of Pipe:	0.75	mags
Well Casing Diameter:	5.08	cm
Static Water Level:	1.68	mbgs
$K = r^2 \ln(L/R)/(2LT_0) =$	<b><math>5.6 \times 10^{-8}</math></b>	m/s

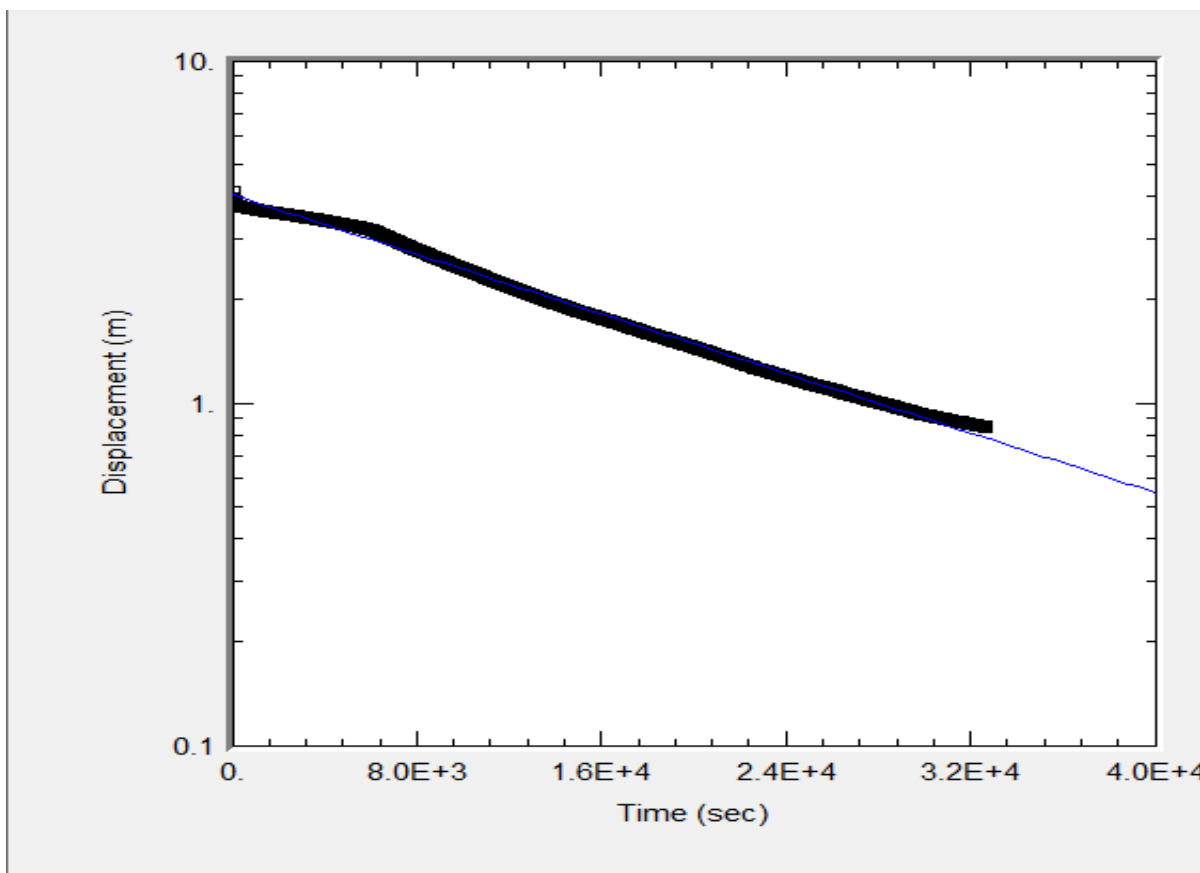




### Estimation of K by Slug Test, based on Horslev equation

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

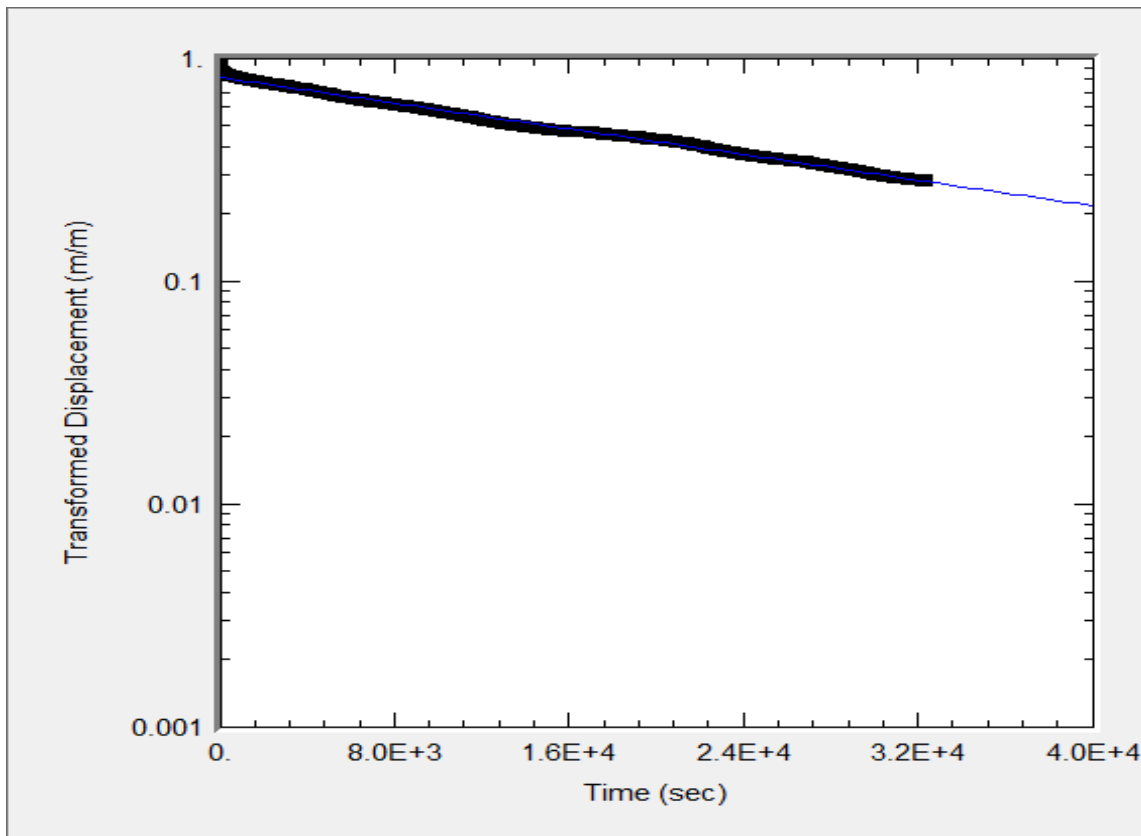
Well Number:	MW 102	
Well Screen Bottom:	7.62	mbgs
Top of Pipe:	0.93	mbgs
Well Casing Diameter:	5.08	cm
Static Water Level:	2.85	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	<b><math>7.8 \times 10^{-8}</math></b>	m/s



**Estimation of K by Slug Test, based on Horslev equation**

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

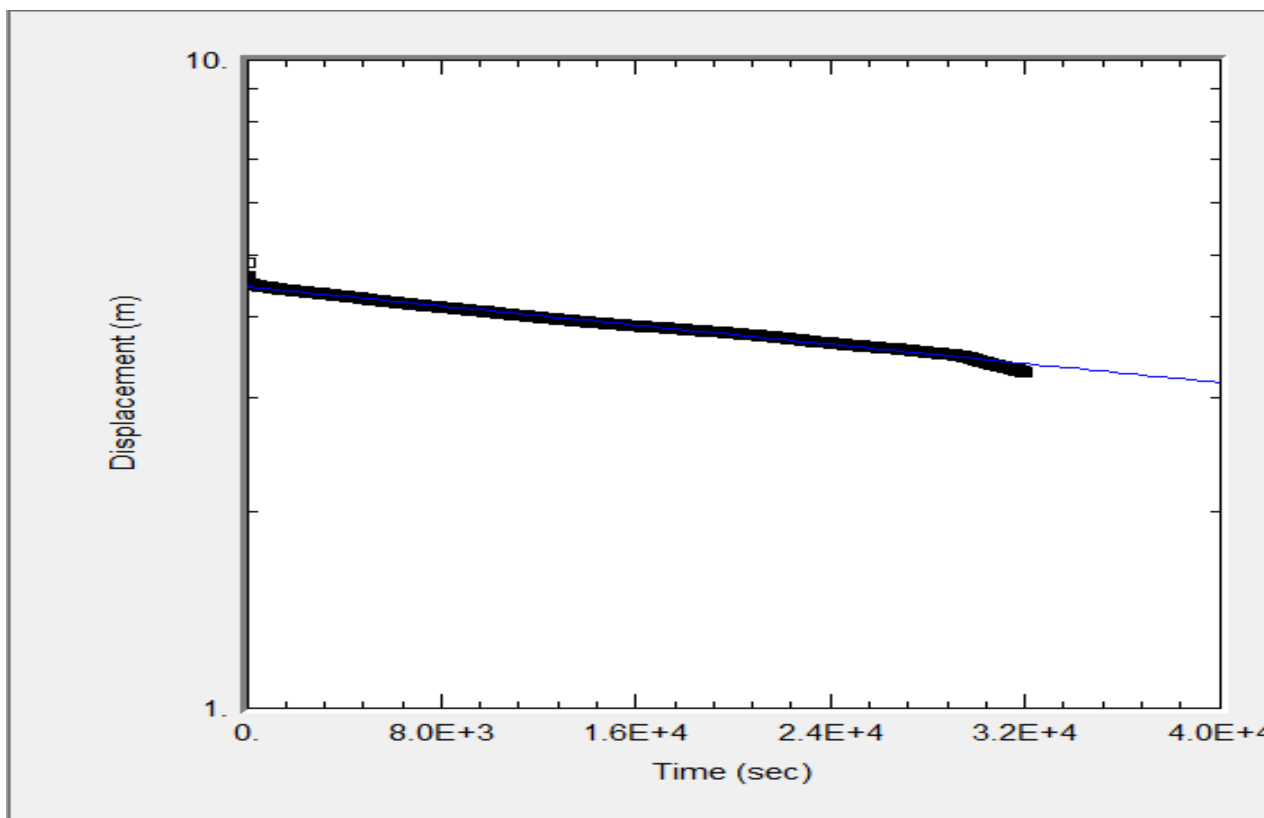
Well Number:	BH/MW 42	
Well Screen Bottom:	6.10	mbgs
Top of Pipe:	0.76	mbgs
Well Casing Diameter:	5.08	cm
Static Water Level:	4.60	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	$4.6 \times 10^{-7}$	m/s



### Estimation of K by Slug Test, based on Horslev equation

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

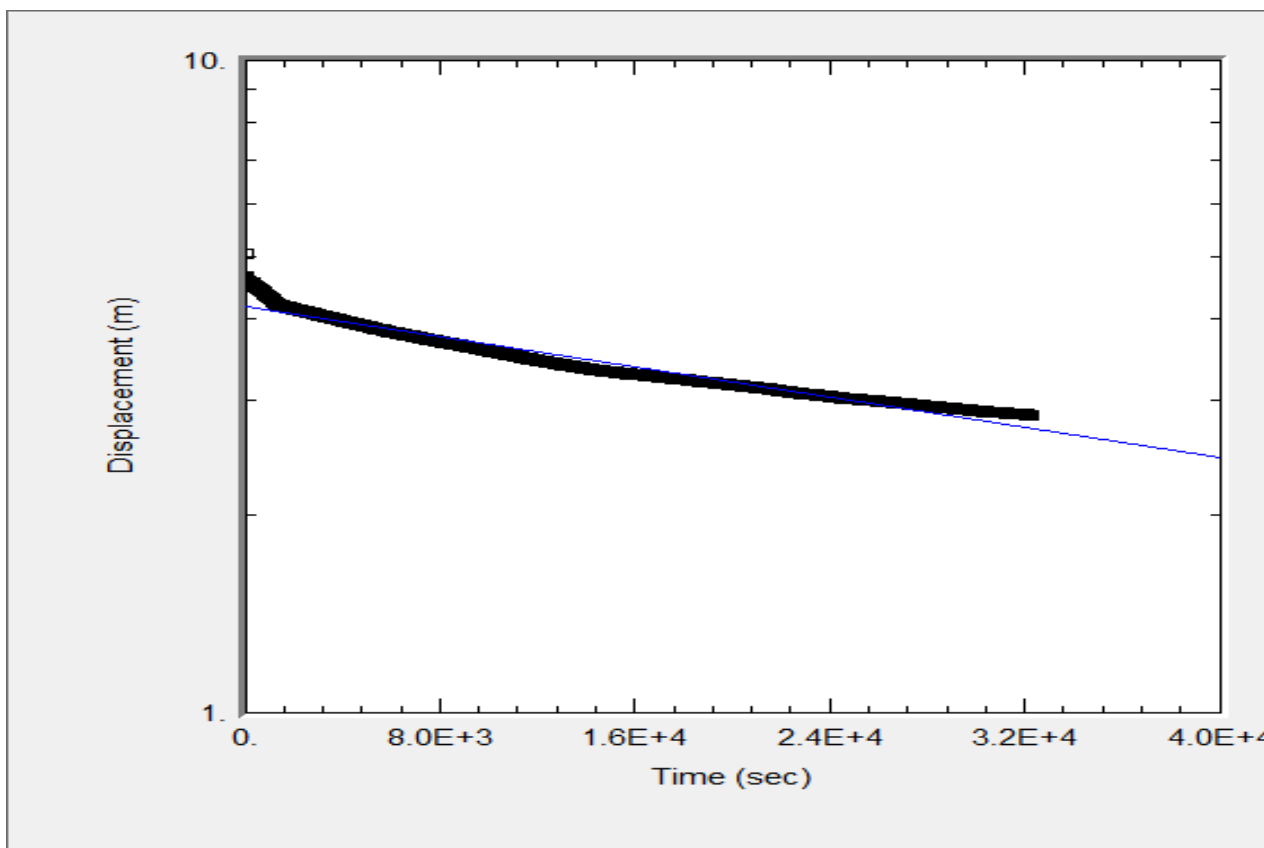
Well Number:	BH/MW 55	
Well Screen Bottom:	6.10	mbgs
Top of Pipe:	0.75	mags
Well Casing Diameter:	5.08	cm
Static Water Level:	1.68	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	<b><math>3.9 \times 10^{-7}</math></b>	m/s



### Estimation of K by Slug Test, based on Horslev equation

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

Well Number:	BH/MW 29	
Well Screen Bottom:	6.10	mbgs
Top of Pipe:	0.78	mags
Well Casing Diameter:	5.08	cm
Static Water Level:	0.31	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	<b><math>6.5 \times 10^{-8}</math></b>	m/s

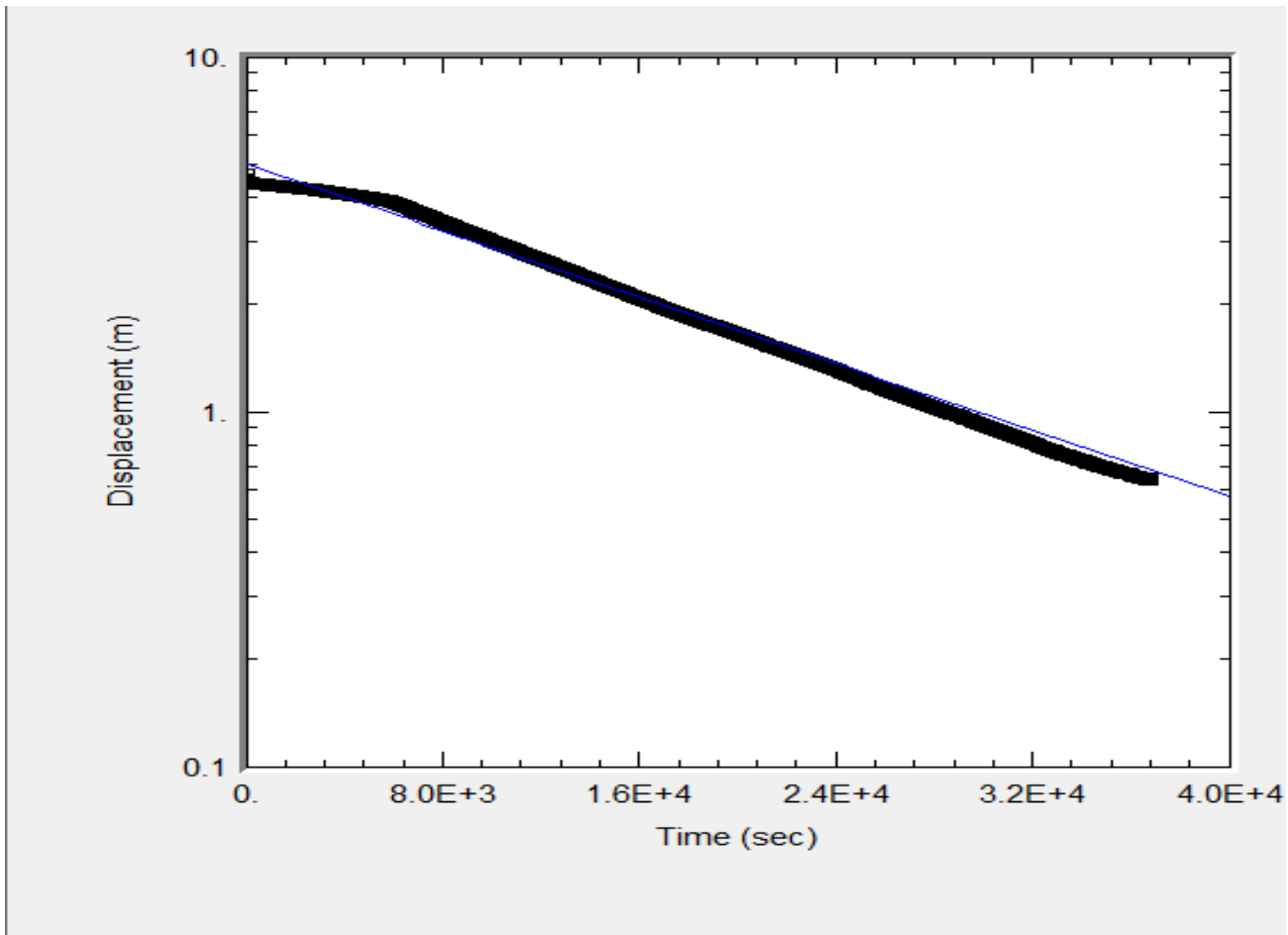




**Estimation of K by Slug Test, based on Horslev equation**

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

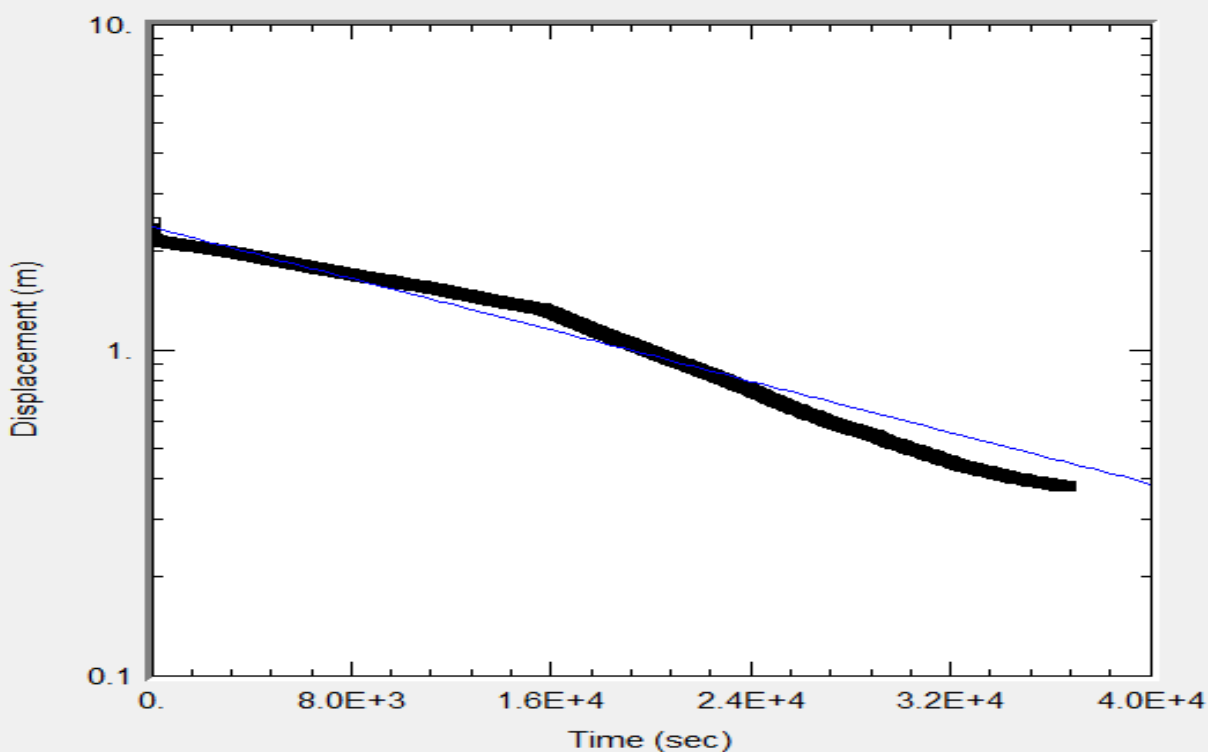
Well Number:	BH/MW 33S	
Well Screen Bottom:	4.00	mbgs
Top of Pipe:	0.78	mags
Well Casing Diameter:	5.08	cm
Static Water Level:	0.73	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	<b><math>2.2 \times 10^{-7}</math></b>	m/s



### Estimation of K by Slug Test, based on Horslev equation

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

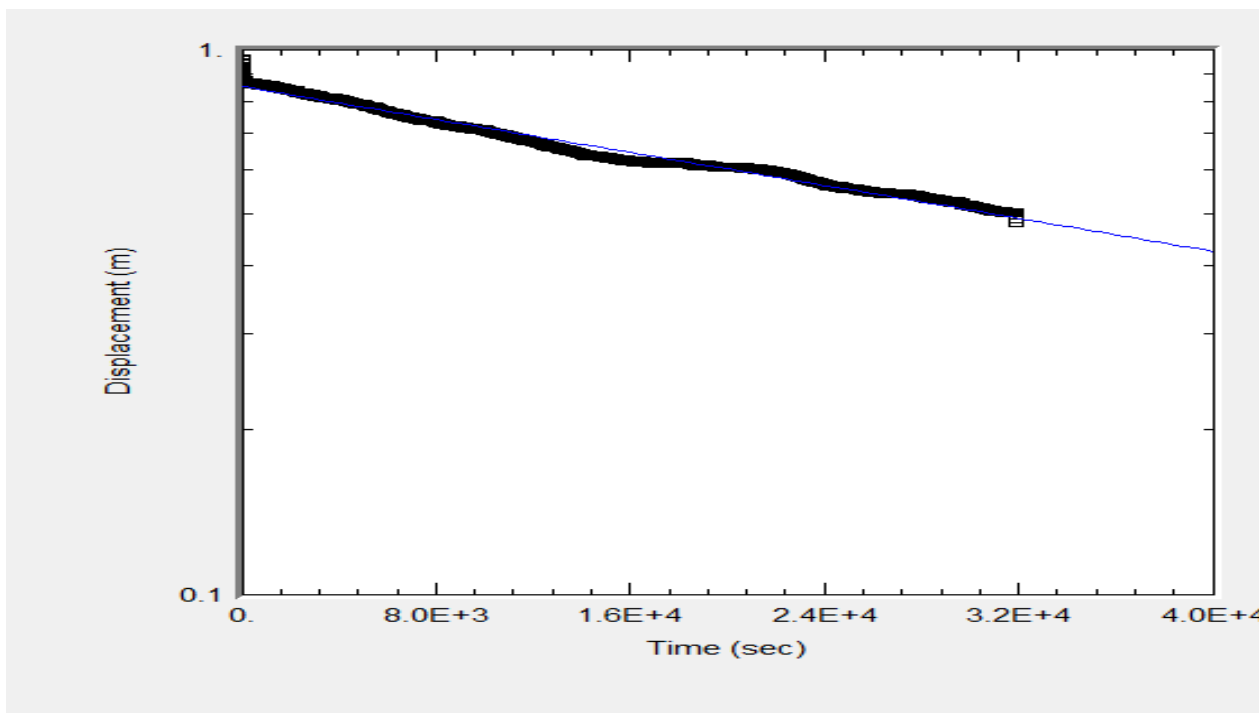
Well Number:	BH/MW33D	
Well Screen Bottom:	6.10	mbgs
Top of Pipe:	1.00	mags
Well Casing Diameter:	5.08	cm
Static Water Level:	3.13	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	<b><math>3.2 \times 10^{-8}</math></b>	m/s



### Estimation of K by Slug Test, based on Horslev equation

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

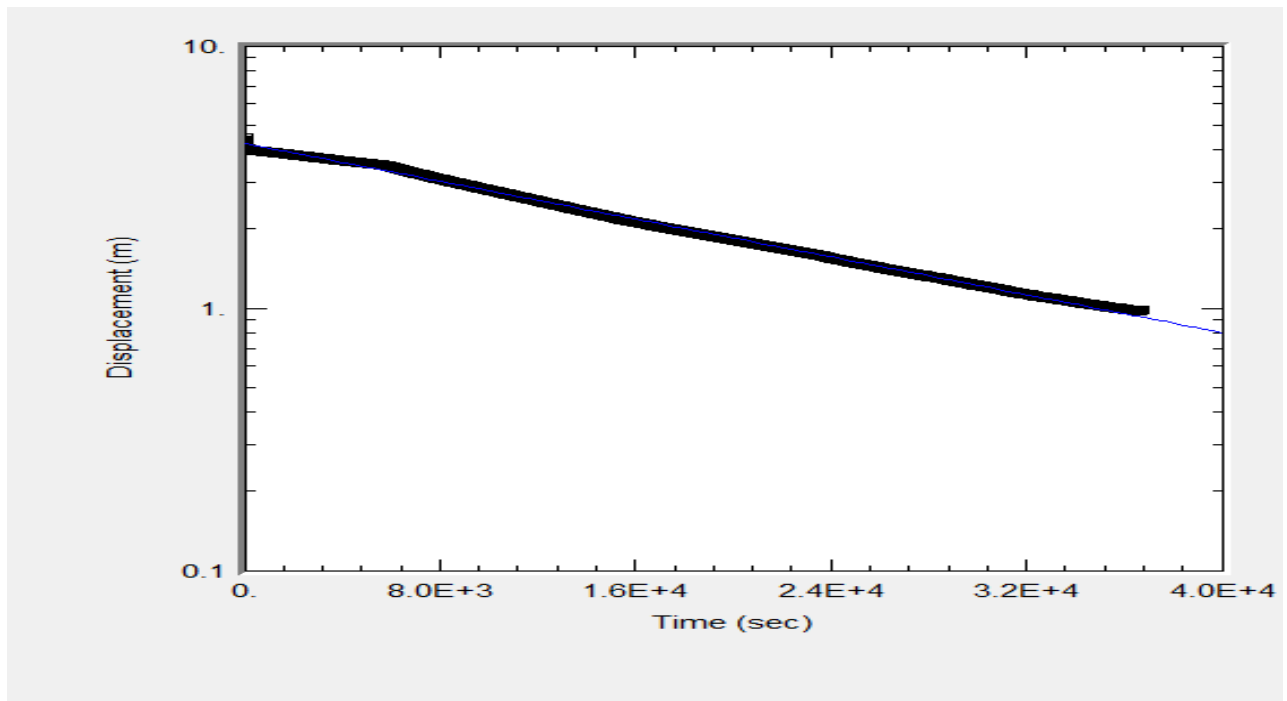
Well Number:	BH/MW31S	
Well Screen Bottom:	6.60	mbgs
Top of Pipe:	0.78	mags
Well Casing Diameter:	5.08	cm
Static Water Level:	5.00	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	<b><math>4.0 \times 10^{-7}</math></b>	m/s



**Estimation of K by Slug Test, based on Horslev equation**

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

Well Number:	BH/MW 52S	
Well Screen Bottom:	4.00	mbgs
Top of Pipe:	0.69	mags
Well Casing Diameter:	5.08	cm
Static Water Level:	1.19	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	<b><math>4.2 \times 10^{-7}</math></b>	m/s

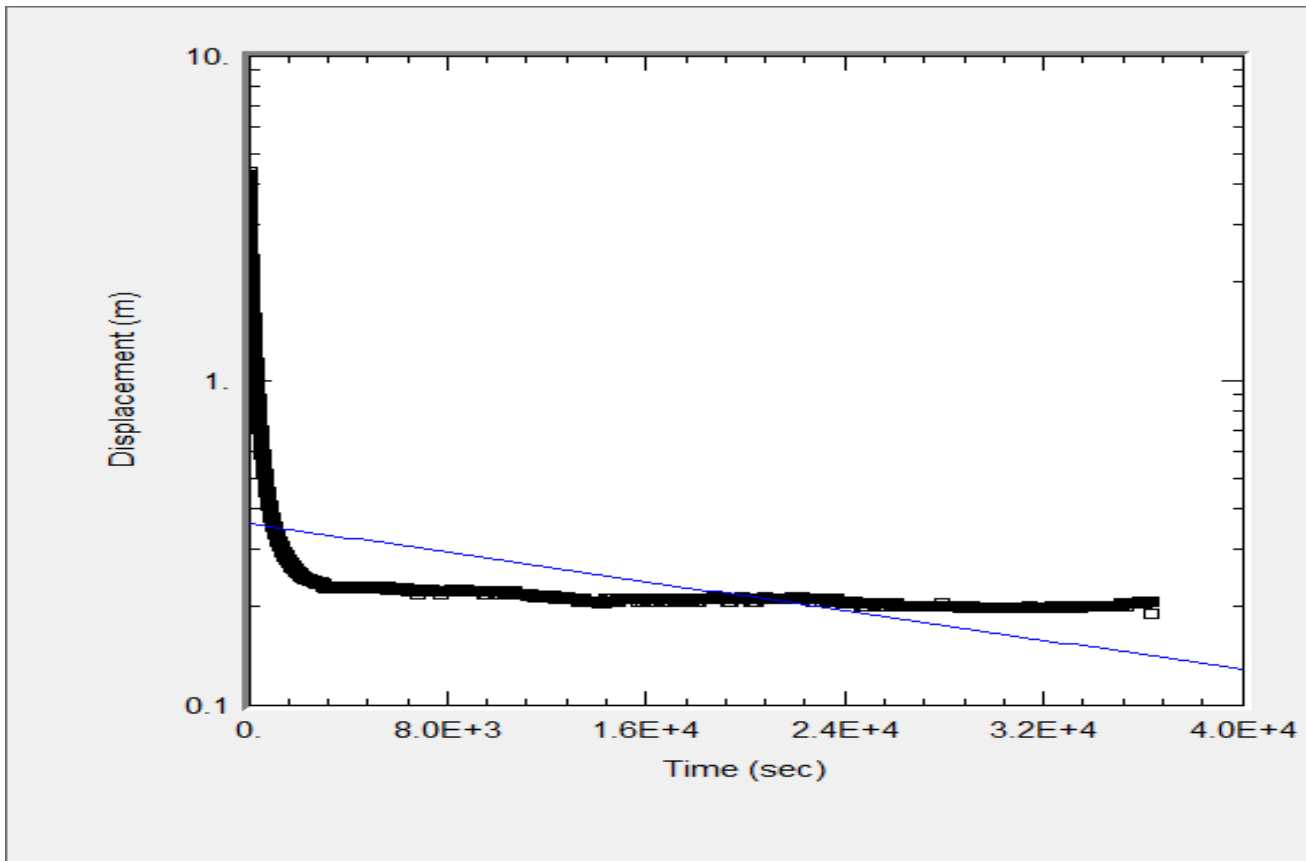




**Estimation of K by Slug Test, based on Horslev equation**

Date:	May 24 to June 12, 2024
Conducted by:	B.Hwang

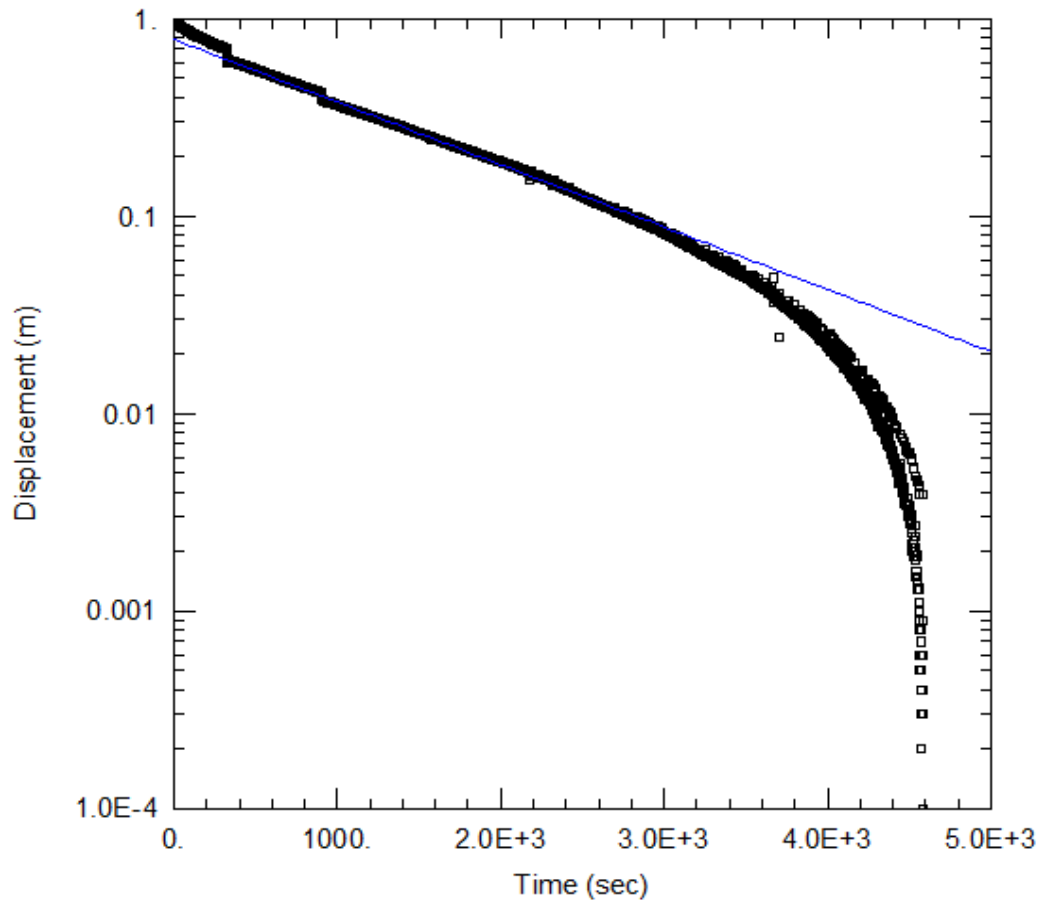
Well Number:	BH/MW 52D	
Well Screen Bottom:	6.40	mbgs
Top of Pipe:	0.70	mags
Well Casing Diameter:	5.08	cm
Static Water Level:	0.39	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	<b><math>3.2 \times 10^{-7}</math></b>	m/s



**Estimation of K by Slug Test, based on Bouwer-Rice Equation**

Date:	May 24, 2024
Conducted by:	A. Gula

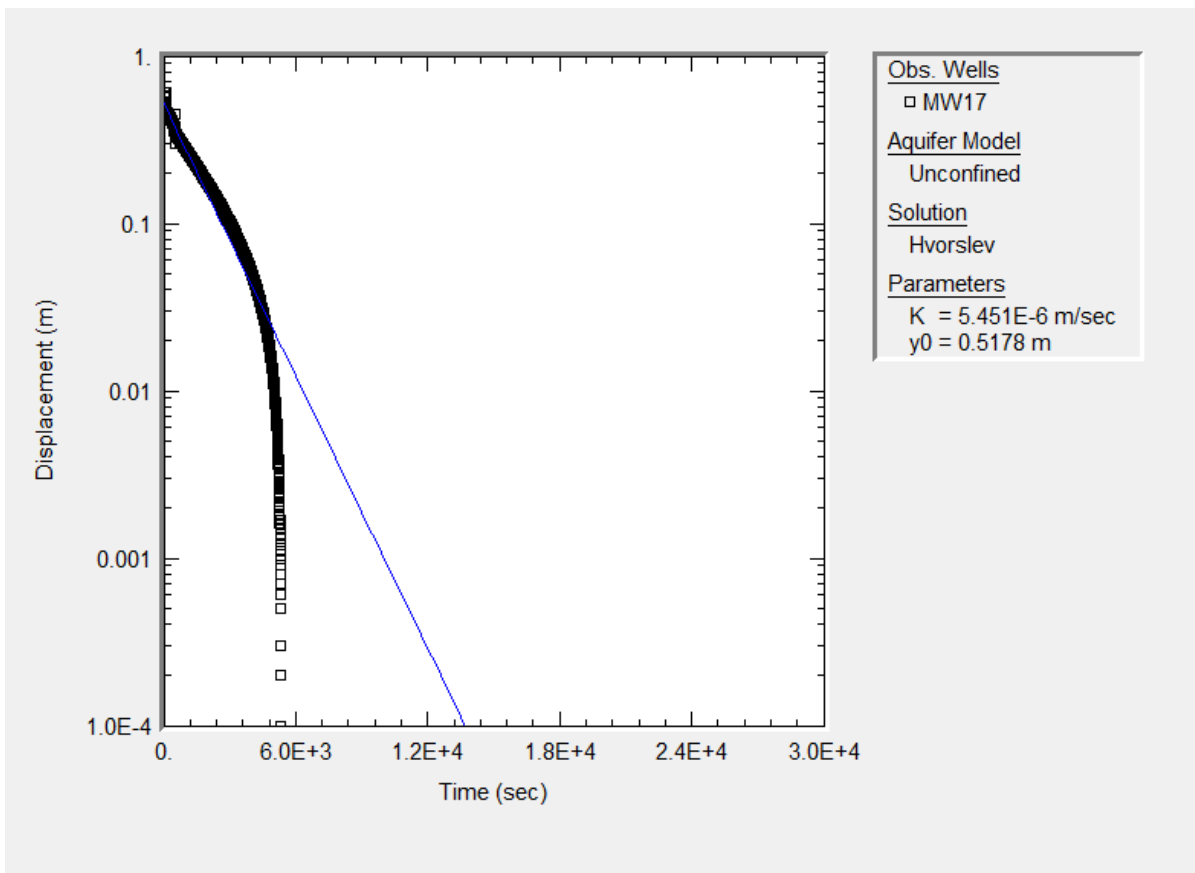
Well Number:	MW16	
Well Screen Bottom:	14.92	mbgs
Top of Pipe:	0.79	mags
Well Casing Diameter:	5.08	cm
Well Elevation:	259.60	masl
Static Water Level:	10.53	mbgs
Aquifer Model:	Confined	
Solution:	Bouwer-Rice	
$K = r^2 \ln(L/R)/(2LT_0) =$	<b>7.4E-07</b>	m/s



**Estimation of K by Slug Test, based on Horslev equation**

Date:	June 4, 2024
Conducted by:	A.Gula

Well Number:	BH17	
Well Screen Bottom:	9.10	mbgs
Top of Pipe:	0.92	mbgs
Well Casing Diameter:	5.08	cm
Well Elevation:	262.9	mbgs
Static Water Level:	2.89	mbgs
$K = r^2 \ln(L/R) / (2LT_0) =$	$5.5 \times 10^{-6}$	m/s



## **Appendix E7 – Groundwater Chemical Certificate of Analyses**





**Certificate of Analysis**

Client: GEI Consultants Inc.  
647 Welham Road  
Barrie, ON  
L4N 0B7  
Attention: Ms. Kim Pickett  
PO#:  
Invoice to: GEI Consultants Inc.

Report Number: 3008098  
Date Submitted: 2024-06-06  
Date Reported: 2024-06-13  
Project: 2400278  
COC #: 911514

---

**Dear Kim Pickett:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

APPROVAL: \_\_\_\_\_

Emma-Dawn Ferguson, Chemist

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: <https://directory.cala.ca/>.

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Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline values listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official provincial or federal guideline as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

**Certificate of Analysis**

Client: GEI Consultants Inc.  
 647 Welham Road  
 Barrie, ON  
 L4N 0B7  
 Attention: Ms. Kim Pickett  
 PO#:  
 Invoice to: GEI Consultants Inc.

Report Number: 3008098  
 Date Submitted: 2024-06-06  
 Date Reported: 2024-06-13  
 Project: 2400278  
 COC #: 911514

Group	Analyte	MRL	Units	Guideline	Lab I.D.	1730166	1730167	1730168	1730169
					Sample Matrix	2024-06-05	2024-06-05	2024-06-05	2024-06-05
					Sample Type	1730166	1730167	1730168	1730169
					Sampling Date	2024-06-05	2024-06-05	2024-06-05	2024-06-05
					Sample I.D.	NW8S	NW8D	MW9	MW29
Metals	Ag	0.0001	mg/L	PWQO 0.0001		<0.0001	<0.0001	<0.0001	<0.0001
	Al (dissolved)	0.01	mg/L	IPWQO 0.075		<0.01	0.28*	<0.01	0.01
	As	0.001	mg/L	PWQO 0.100		<0.001	0.003	0.003	0.002
	B	0.01	mg/L	IPWQO 0.200		0.06	0.08	0.04	0.10
	Be	0.0005	mg/L	PWQO 0.011		<0.0005	<0.0005	<0.0005	<0.0005
	Cd	0.0001	mg/L	PWQO 0.0002		<0.0001	<0.0001	0.0001	<0.0001
	Co	0.0002	mg/L	PWQO 0.0009		0.0014*	0.0048*	0.0052*	0.0012*
	Cr	0.001	mg/L			0.002	0.006	0.006	0.005
	Cu	0.001	mg/L	PWQO 0.005		0.005	0.011*	0.026*	0.005
	Fe	0.03	mg/L	PWQO 0.30		1.18*	5.81*	6.84*	2.85*
	Hg Dissolved	0.0001	mg/L	PWQO 0.0002		<0.0001	<0.0001	<0.0001	<0.0001
	Mo	0.005	mg/L	IPWQO 0.040		<0.005	0.005	<0.005	<0.005
	Ni	0.005	mg/L	PWQO 0.025		<0.005	0.011	0.009	<0.005
	Pb	0.001	mg/L	PWQO 0.005		<0.001	0.005	0.005	0.002
	Sb	0.0005	mg/L	IPWQO 0.020		<0.0005	<0.0005	<0.0005	<0.0005
	Se	0.001	mg/L	PWQO 0.100		<0.001	0.004	0.002	<0.001
	Tl	0.0001	mg/L	IPWQO 0.0003		<0.0001	<0.0001	<0.0001	<0.0001
	U	0.001	mg/L	IPWQO 0.005		0.002	0.009*	<0.001	<0.001
	V	0.001	mg/L	IPWQO 0.006		0.002	0.008*	0.005	0.005
	W	0.002	mg/L	IPWQO 0.030		<0.002	<0.002	<0.002	<0.002
Zn	0.01	mg/L	PWQO 0.030		0.02	0.02	0.04*	0.01	
Zr	0.002	mg/L	IPWQO 0.004		<0.002	<0.002	<0.002	0.005*	

Guideline = PWQO - Ontario

\* = Guideline Exceedence

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 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

**Certificate of Analysis**

Client: GEI Consultants Inc.  
 647 Welham Road  
 Barrie, ON  
 L4N 0B7  
 Attention: Ms. Kim Pickett  
 PO#:   
 Invoice to: GEI Consultants Inc.

Report Number: 3008098  
 Date Submitted: 2024-06-06  
 Date Reported: 2024-06-13  
 Project: 2400278  
 COC #: 911514

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					1730170	1730171	1730172	1730173	
Metals	Ag	0.0001	mg/L	PWQO 0.0001	1730170	SURF W		2024-06-05	NW31S
		0.0005	mg/L	PWQO 0.0001					
	Al (dissolved)	0.01	mg/L	IPWQO 0.075				2024-06-05	NW33D
	As	0.001	mg/L	PWQO 0.100				2024-06-05	NW37S
		0.005	mg/L	PWQO 0.100					
	B	0.01	mg/L	IPWQO 0.200					
		0.05	mg/L	IPWQO 0.200					
	Be	0.0005	mg/L	PWQO 0.011					
		0.002	mg/L	PWQO 0.011					
	Cd	0.0001	mg/L	PWQO 0.0002					
		0.0005	mg/L	PWQO 0.0002					
	Co	0.0002	mg/L	PWQO 0.0009					
		0.001	mg/L	PWQO 0.0009					
	Cr	0.001	mg/L						
		0.005	mg/L						
	Cu	0.001	mg/L	PWQO 0.005					
		0.005	mg/L	PWQO 0.005					
	Fe	0.03	mg/L	PWQO 0.30					
		0.2	mg/L	PWQO 0.30					
	Hg Dissolved	0.0001	mg/L	PWQO 0.0002					
Mo	0.005	mg/L	IPWQO 0.040						
	0.02	mg/L	IPWQO 0.040						
Ni	0.005	mg/L	PWQO 0.025						
	0.02	mg/L	PWQO 0.025						
Pb	0.001	mg/L	PWQO 0.005						

Guideline = PWQO - Ontario

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Report Number: 3008098  
 Date Submitted: 2024-06-06  
 Date Reported: 2024-06-13  
 Project: 2400278  
 COC #: 911514

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					1730170	1730171	1730172	1730173	
Metals	Pb	0.005	mg/L	PWQO 0.005	2024-06-05	SURF W		2024-06-05	NW31S
	Sb	0.0005	mg/L	IPWQO 0.020	<0.0005			<0.0005	
		0.002	mg/L	IPWQO 0.020				<0.0005	
	Se	0.001	mg/L	PWQO 0.100	0.005			<0.001	0.003
		0.005	mg/L	PWQO 0.100					<0.005
	Tl	0.0001	mg/L	IPWQO 0.0003	<0.0001			<0.0001	<0.0001
		0.0005	mg/L	IPWQO 0.0003					<0.0005*
	U	0.001	mg/L	IPWQO 0.005	0.001			<0.001	0.003
		0.005	mg/L	IPWQO 0.005					<0.005
	V	0.001	mg/L	IPWQO 0.006	0.013*			0.003	0.011*
		0.005	mg/L	IPWQO 0.006					<0.005
	W	0.002	mg/L	IPWQO 0.030	<0.002			<0.002	<0.002
		0.01	mg/L	IPWQO 0.030					<0.01
	Zn	0.01	mg/L	PWQO 0.030	0.03			<0.01	0.03
		0.05	mg/L	PWQO 0.030					<0.05*
	Zr	0.002	mg/L	IPWQO 0.004	<0.002			0.005*	<0.002
0.01		mg/L	IPWQO 0.004					<0.01*	

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 647 Welham Road  
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Report Number: 3008098  
 Date Submitted: 2024-06-06  
 Date Reported: 2024-06-13  
 Project: 2400278  
 COC #: 911514

Lab I.D. 1730174  
 Sample Matrix SURF W  
 Sample Type  
 Sampling Date 2024-06-05  
 Sample I.D. MW101

Group	Analyte	MRL	Units	Guideline	
Metals	Ag	0.0001	mg/L	PWQO 0.0001	<0.0001
	Al (dissolved)	0.01	mg/L	IPWQO 0.075	<0.01
	As	0.001	mg/L	PWQO 0.100	<0.001
	B	0.01	mg/L	IPWQO 0.200	0.04
	Be	0.0005	mg/L	PWQO 0.011	<0.0005
	Cd	0.0001	mg/L	PWQO 0.0002	<0.0001
	Co	0.0002	mg/L	PWQO 0.0009	0.0009
	Cr	0.001	mg/L		<0.001
	Cu	0.001	mg/L	PWQO 0.005	<0.001
	Fe	0.03	mg/L	PWQO 0.30	<0.03
	Hg Dissolved	0.0001	mg/L	PWQO 0.0002	<0.0001
	Mo	0.005	mg/L	IPWQO 0.040	<0.005
	Ni	0.005	mg/L	PWQO 0.025	<0.005
	Pb	0.001	mg/L	PWQO 0.005	<0.001
	Sb	0.0005	mg/L	IPWQO 0.020	<0.0005
	Se	0.001	mg/L	PWQO 0.100	<0.001
	Tl	0.0001	mg/L	IPWQO 0.0003	<0.0001
	U	0.001	mg/L	IPWQO 0.005	<0.001
	V	0.001	mg/L	IPWQO 0.006	<0.001
	W	0.002	mg/L	IPWQO 0.030	<0.002
Zn	0.01	mg/L	PWQO 0.030	<0.01	
Zr	0.002	mg/L	IPWQO 0.004	<0.002	

Guideline = PWQO - Ontario

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**Certificate of Analysis**

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 L4N 0B7  
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Report Number: 3008098  
 Date Submitted: 2024-06-06  
 Date Reported: 2024-06-13  
 Project: 2400278  
 COC #: 911514

**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
<b>Run No</b> 461253 <b>Analysis/Extraction Date</b> 2024-06-11 <b>Analyst</b> AaN <b>Method</b> EPA 200.8			
Silver	<0.0001 mg/L	92	80-120
Al (dissolved)	<0.01 mg/L	103	80-120
Arsenic	<0.001 mg/L	96	80-120
Boron (total)	<0.01 mg/L	99	80-120
Beryllium	<0.0005 mg/L	104	80-120
Cadmium	<0.0001 mg/L	93	80-120
Cobalt	<0.0002 mg/L	99	80-120
Chromium Total	<0.001 mg/L	102	80-120
Copper	<0.001 mg/L	103	80-120
Iron	<0.03 mg/L	96	80-120
Hg Dissolved	<0.0001 mg/L	105	
Molybdenum	<0.005 mg/L	90	80-120
Nickel	<0.005 mg/L	103	80-120
Lead	<0.001 mg/L	94	80-120
Antimony	<0.0005 mg/L	94	80-120
Selenium	<0.001 mg/L	99	80-120

**Guideline = PWQO - Ontario**

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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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**Certificate of Analysis**

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 647 Welham Road  
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 L4N 0B7  
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Report Number: 3008098  
 Date Submitted: 2024-06-06  
 Date Reported: 2024-06-13  
 Project: 2400278  
 COC #: 911514

**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
Thallium	<0.0001 mg/L	94	80-120
Uranium	<0.001 mg/L	91	80-120
Vanadium	<0.001 mg/L	98	80-120
W	<0.002 mg/L	96	80-120
Zinc	<0.01 mg/L	107	80-120
Zr	<0.002 mg/L	99	80-120
<b>Run No</b> 461383	<b>Analysis/Extraction Date</b> 2024-06-13	<b>Analyst</b> AaN	
<b>Method</b> EPA 200.8			
Silver	<0.0001 mg/L	101	80-120
Arsenic	<0.001 mg/L	94	80-120
Boron (total)	<0.01 mg/L	97	80-120
Beryllium	<0.0005 mg/L	103	80-120
Cadmium	<0.0001 mg/L	97	80-120
Cobalt	<0.0002 mg/L	100	80-120
Chromium Total	<0.001 mg/L	102	80-120
Copper	<0.001 mg/L	103	80-120
Iron	<0.03 mg/L	98	80-120
Molybdenum	<0.005 mg/L	92	80-120

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Report Number: 3008098  
 Date Submitted: 2024-06-06  
 Date Reported: 2024-06-13  
 Project: 2400278  
 COC #: 911514

**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
Nickel	<0.005 mg/L	102	80-120
Lead	<0.001 mg/L	100	80-120
Antimony	<0.0005 mg/L	98	80-120
Selenium	<0.001 mg/L	98	80-120
Thallium	<0.0001 mg/L	99	80-120
Uranium	<0.001 mg/L	96	80-120
Vanadium	<0.001 mg/L	95	80-120
W	<0.002 mg/L	102	80-120
Zinc	<0.01 mg/L	107	80-120
Zr	<0.002 mg/L	97	80-120

**Guideline = PWQO - Ontario**

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Report Number: 3008098  
Date Submitted: 2024-06-06  
Date Reported: 2024-06-13  
Project: 2400278  
COC #: 911514

---

### **Sample Comment Summary**

Sample ID: 1730167	NW8D	Sediments not included for metals analysis.
Sample ID: 1730168	MW9	Sediments not included in metals analysis.
Sample ID: 1730170	NW31S	Sediments not included in metals analysis.
Sample ID: 1730172	NW37S	Sediments not included in metals analysis.
Sample ID: 1730173	NW37D	Sediments not included in metals analysis. Metals MRLs raised due to matrix interferences (dilution done).

**Guideline = PWQO - Ontario**

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Client: GEI Consultants Inc.  
647 Welham Road  
Barrie, ON  
L4N 0B7  
Attention: Ms. Kim Pickett  
PO#:  
Invoice to: GEI Consultants Inc.

Report Number: 3008396  
Date Submitted: 2024-06-14  
Date Reported: 2024-06-21  
Project: 2400278  
COC #: 915020

Page 1 of 5

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**Dear Kim Pickett:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

APPROVAL: \_\_\_\_\_

Emma-Dawn Ferguson, Chemist

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 PO#:   
 Invoice to: GEI Consultants Inc.

Report Number: 3008396  
 Date Submitted: 2024-06-14  
 Date Reported: 2024-06-21  
 Project: 2400278  
 COC #: 915020

Group	Analyte	MRL	Units	Guideline	Lab I.D.	1731721	1731722	1731723	1731724
					Sample Matrix	1731721	1731722	1731723	1731724
					Sample Type	2024-06-12	2024-06-12	2024-06-12	2024-06-12
					Sampling Date	NW 24D (F)	MW 42 (F)	MW 49 (F)	MW 52S (F)
					Sample I.D.				
Metals	Ag	0.0001	mg/L	PWQO 0.0001		<0.0001	<0.0001	<0.0001	<0.0001
	Al	0.01	mg/L	IPWQO 0.075		<0.01	<0.01	<0.01	0.02
	As	0.001	mg/L	PWQO 0.100		<0.001	0.002	0.002	<0.001
	B	0.01	mg/L	IPWQO 0.200		0.07	0.07	0.02	0.06
	Ba	0.01	mg/L			0.19	0.16	0.09	0.11
	Be	0.0005	mg/L	PWQO 0.011		<0.0005	<0.0005	<0.0005	<0.0005
	Cd	0.0001	mg/L	PWQO 0.0002		<0.0001	<0.0001	<0.0001	<0.0001
	Co	0.0002	mg/L	PWQO 0.0009		0.0006	0.0007	0.0028*	0.0004
	Cr	0.001	mg/L			<0.001	<0.001	<0.001	<0.001
	Cu	0.001	mg/L	PWQO 0.005		0.002	0.002	0.006*	0.005
	Fe	0.03	mg/L	PWQO 0.30		<0.03	<0.03	5.85*	<0.03
	Hg	0.0001	mg/L			<0.0001	<0.0001	<0.0001	<0.0001
	Mo	0.005	mg/L	IPWQO 0.040		0.009	0.007	<0.005	<0.005
	Ni	0.005	mg/L	PWQO 0.025		<0.005	<0.005	<0.005	<0.005
	Pb	0.001	mg/L	PWQO 0.005		<0.001	<0.001	0.001	<0.001
	Sb	0.0005	mg/L	IPWQO 0.020		<0.0005	<0.0005	<0.0005	0.0006
	Se	0.001	mg/L	PWQO 0.100		<0.001	<0.001	<0.001	<0.001
	Tl	0.0001	mg/L	IPWQO 0.0003		<0.0001	<0.0001	<0.0001	<0.0001
	U	0.001	mg/L	IPWQO 0.005		0.003	0.001	0.002	0.004
	V	0.001	mg/L	IPWQO 0.006		<0.001	<0.001	<0.001	<0.001
W	0.002	mg/L	IPWQO 0.030		<0.002	<0.002	<0.002	<0.002	
Zn	0.01	mg/L	PWQO 0.030		<0.01	<0.01	<0.01	<0.01	
Zr	0.002	mg/L	IPWQO 0.004		<0.002	<0.002	<0.002	<0.002	

Guideline = PWQO - Ontario

\* = Guideline Exceedence

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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Client: GEI Consultants Inc.  
 647 Welham Road  
 Barrie, ON  
 L4N 0B7  
 Attention: Ms. Kim Pickett  
 PO#:  
 Invoice to: GEI Consultants Inc.

Report Number: 3008396  
 Date Submitted: 2024-06-14  
 Date Reported: 2024-06-21  
 Project: 2400278  
 COC #: 915020

Lab I.D. 1731725  
 Sample Matrix SURF W  
 Sample Type  
 Sampling Date 2024-06-12  
 Sample I.D. MW 52D (F)

Group	Analyte	MRL	Units	Guideline	
Metals	Ag	0.0001	mg/L	PWQO 0.0001	<0.0001
	Al	0.01	mg/L	IPWQO 0.075	<0.01
	As	0.001	mg/L	PWQO 0.100	0.002
	B	0.01	mg/L	IPWQO 0.200	0.19
	Ba	0.01	mg/L		0.10
	Be	0.0005	mg/L	PWQO 0.011	<0.0005
	Cd	0.0001	mg/L	PWQO 0.0002	<0.0001
	Co	0.0002	mg/L	PWQO 0.0009	0.0004
	Cr	0.001	mg/L		<0.001
	Cu	0.001	mg/L	PWQO 0.005	<0.001
	Fe	0.03	mg/L	PWQO 0.30	<0.03
	Hg	0.0001	mg/L		<0.0001
	Mo	0.005	mg/L	IPWQO 0.040	0.011
	Ni	0.005	mg/L	PWQO 0.025	<0.005
	Pb	0.001	mg/L	PWQO 0.005	<0.001
	Sb	0.0005	mg/L	IPWQO 0.020	0.0006
	Se	0.001	mg/L	PWQO 0.100	<0.001
	Tl	0.0001	mg/L	IPWQO 0.0003	<0.0001
	U	0.001	mg/L	IPWQO 0.005	0.002
	V	0.001	mg/L	IPWQO 0.006	<0.001
W	0.002	mg/L	IPWQO 0.030	<0.002	
Zn	0.01	mg/L	PWQO 0.030	<0.01	
Zr	0.002	mg/L	IPWQO 0.004	<0.002	

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 Project: 2400278  
 COC #: 915020

**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
<b>Run No</b> 461765 <b>Analysis/Extraction Date</b> 2024-06-20 <b>Analyst</b> AaN			
<b>Method</b> EPA 200.8			
Silver	<0.0001 mg/L	107	80-120
Aluminum	<0.01 mg/L	103	80-120
Arsenic	<0.001 mg/L	95	80-120
Boron (total)	<0.01 mg/L	112	80-120
Barium	<0.01 mg/L	105	80-120
Beryllium	<0.0005 mg/L	116	80-120
Cadmium	<0.0001 mg/L	107	80-120
Cobalt	<0.0002 mg/L	107	80-120
Chromium Total	<0.001 mg/L	103	80-120
Copper	<0.001 mg/L	111	80-120
Iron	<0.03 mg/L	106	80-120
Mercury	<0.0001 mg/L	104	80-120
Molybdenum	<0.005 mg/L	102	80-120
Nickel	<0.005 mg/L	110	80-120
Lead	<0.001 mg/L	110	80-120
Antimony	<0.0005 mg/L	115	80-120

**Guideline = PWQO - Ontario**

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Report Number: 3008396  
 Date Submitted: 2024-06-14  
 Date Reported: 2024-06-21  
 Project: 2400278  
 COC #: 915020

**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
Selenium	<0.001 mg/L	102	80-120
Thallium	<0.0001 mg/L	111	80-120
Uranium	<0.001 mg/L	106	80-120
Vanadium	<0.001 mg/L	101	80-120
W	<0.002 mg/L	102	80-120
Zinc	<0.01 mg/L	114	80-120
Zr	<0.002 mg/L	117	80-120

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Report Number: 3008395  
Date Submitted: 2024-06-14  
Date Reported: 2024-06-21  
Project: 2400278  
COC #: 915020

---

**Dear Kim Pickett:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

APPROVAL: \_\_\_\_\_  
Emma-Dawn Ferguson, Chemist

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: <https://directory.cala.ca/>.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is licensed by the Ontario Ministry of the Environment, Conservation, and Parks (MECP) for specific tests in drinking water (license #2318). A copy of the license is available upon request.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by the Ontario Ministry of Agriculture, Food, and Rural Affairs for specific tests in agricultural soils.

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Report Number: 3008395  
 Date Submitted: 2024-06-14  
 Date Reported: 2024-06-21  
 Project: 2400278  
 COC #: 915020

Group	Analyte	MRL	Units	Guideline	Lab I.D.	1731714	1731715	1731716	1731717
					Sample Matrix	1731714	1731715	1731716	1731717
					Sample Type	2024-06-12	2024-06-12	2024-06-12	2024-06-12
					Sampling Date	NW 24D	NW 24S	MW 42	MW 49
					Sample I.D.				
Metals	Ag	0.0001	mg/L	PWQO 0.0001		<0.0001	<0.0001	<0.0001	<0.0001
	Al	0.01	mg/L	IPWQO 0.075		3.17*	3.62*	7.45*	6.84*
	As	0.001	mg/L	PWQO 0.100		0.001	0.007	0.007	0.006
	B	0.01	mg/L	IPWQO 0.200		0.06	0.13	0.07	0.02
	Ba	0.01	mg/L			0.20	0.19	0.37	0.28
	Be	0.0005	mg/L	PWQO 0.011		<0.0005	<0.0005	0.0009	0.0010
	Cd	0.0001	mg/L	PWQO 0.0002		<0.0001	0.0001	0.0002	0.0003*
	Co	0.0002	mg/L	PWQO 0.0009		0.0022*	0.0062*	0.0146*	0.0168*
	Cr	0.001	mg/L			0.006	0.012	0.017	0.012
	Cu	0.001	mg/L	PWQO 0.005		0.005	0.022*	0.035*	0.031*
	Fe	0.03	mg/L	PWQO 0.30		2.69*	6.45*	18.6*	18.7*
	Hg	0.0001	mg/L			<0.0001	<0.0001	<0.0001	<0.0001
	Li	0.001	mg/L			0.044			
	Mo	0.005	mg/L	IPWQO 0.040		0.006	<0.005	<0.005	<0.005
	Ni	0.005	mg/L	PWQO 0.025		0.006	0.018	0.019	0.019
	Pb	0.001	mg/L	PWQO 0.005		0.002	0.004	0.018*	0.009*
	Sb	0.0005	mg/L	IPWQO 0.020		<0.0005	<0.0005	<0.0005	<0.0005
	Se	0.001	mg/L	PWQO 0.100		0.001	0.002	0.006	0.005
	Tl	0.0001	mg/L	IPWQO 0.0003		<0.0001	<0.0001	<0.0001	<0.0001
	U	0.001	mg/L	IPWQO 0.005		0.003	0.003	0.003	0.003
V	0.001	mg/L	IPWQO 0.006		0.007*	0.011*	0.022*	0.014*	
W	0.002	mg/L	IPWQO 0.030		<0.002	<0.002	<0.002	<0.002	
Zn	0.01	mg/L	PWQO 0.030		<0.01	0.03	0.04*	0.03	
Zr	0.002	mg/L	IPWQO 0.004		0.003	0.003	<0.002	<0.002	

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Report Number: 3008395  
 Date Submitted: 2024-06-14  
 Date Reported: 2024-06-21  
 Project: 2400278  
 COC #: 915020

Group	Analyte	MRL	Units	Guideline	Lab I.D.	1731718	1731719	1731720
					Sample Matrix	2024-06-12	2024-06-12	2024-06-12
					Sample Type	MW 52S	MW 52D	MW 102
					Sampling Date			
					Sample I.D.			
Metals	Ag	0.0001	mg/L	PWQO 0.0001		<0.0001	<0.0001	<0.0001
	Al	0.01	mg/L	IPWQO 0.075		1.56*	2.93*	0.96*
	As	0.001	mg/L	PWQO 0.100		0.002	0.004	0.005
	B	0.01	mg/L	IPWQO 0.200		0.06	0.18	0.05
	Ba	0.01	mg/L			0.14	0.17	0.13
	Be	0.0005	mg/L	PWQO 0.011		<0.0005	<0.0005	<0.0005
	Cd	0.0001	mg/L	PWQO 0.0002		<0.0001	<0.0001	<0.0001
	Co	0.0002	mg/L	PWQO 0.0009		0.0022*	0.0049*	0.0021*
	Cr	0.001	mg/L			0.003	0.012	0.006
	Cu	0.001	mg/L	PWQO 0.005		0.006*	0.011*	0.021*
	Fe	0.03	mg/L	PWQO 0.30		1.51*	5.87*	2.63*
	Hg	0.0001	mg/L			<0.0001	<0.0001	<0.0001
	Mo	0.005	mg/L	IPWQO 0.040		<0.005	<0.005	<0.005
	Ni	0.005	mg/L	PWQO 0.025		0.006	0.008	0.006
	Pb	0.001	mg/L	PWQO 0.005		<0.001	0.004	0.008*
	Sb	0.0005	mg/L	IPWQO 0.020		<0.0005	<0.0005	<0.0005
	Se	0.001	mg/L	PWQO 0.100		<0.001	0.002	<0.001
	Tl	0.0001	mg/L	IPWQO 0.0003		<0.0001	<0.0001	<0.0001
	U	0.001	mg/L	IPWQO 0.005		0.004	0.003	<0.001
	V	0.001	mg/L	IPWQO 0.006		0.005	0.009*	0.003
W	0.002	mg/L	IPWQO 0.030		<0.002	<0.002	<0.002	
Zn	0.01	mg/L	PWQO 0.030		0.01	0.02	<0.01	
Zr	0.002	mg/L	IPWQO 0.004		<0.002	<0.002	<0.002	

Guideline = PWQO - Ontario

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Report Number: 3008395  
 Date Submitted: 2024-06-14  
 Date Reported: 2024-06-21  
 Project: 2400278  
 COC #: 915020

**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
<b>Run No</b> 461826 <b>Analysis/Extraction Date</b> 2024-06-21 <b>Analyst</b> AaN			
<b>Method</b> EPA 200.8			
Silver	<0.0001 mg/L	96	80-120
Aluminum	<0.01 mg/L	119	80-120
Arsenic	<0.001 mg/L	97	80-120
Boron (total)	<0.01 mg/L	102	80-120
Barium	<0.01 mg/L	104	80-120
Beryllium	<0.0005 mg/L	107	80-120
Cadmium	<0.0001 mg/L	110	80-120
Cobalt	<0.0002 mg/L	110	80-120
Chromium Total	<0.001 mg/L	109	80-120
Copper	<0.001 mg/L	114	80-120
Iron	<0.03 mg/L	95	80-120
Mercury	<0.0001 mg/L	101	80-120
Li	<0.001 mg/L	103	80-120
Molybdenum	<0.005 mg/L	105	80-120
Nickel	<0.005 mg/L	114	80-120
Lead	<0.001 mg/L	112	80-120

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 Project: 2400278  
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**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
Antimony	<0.0005 mg/L	117	80-120
Selenium	<0.001 mg/L	104	80-120
Thallium	<0.0001 mg/L	113	80-120
Uranium	<0.001 mg/L	102	80-120
Vanadium	<0.001 mg/L	105	80-120
W	<0.002 mg/L	114	80-120
Zinc	<0.01 mg/L	115	80-120
Zr	<0.002 mg/L	98	80-120

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**Dear Kim Pickett:**

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Report Comments:

APPROVAL: \_\_\_\_\_

Emma-Dawn Ferguson, Chemist

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Group	Analyte	MRL	Units	Guideline	Lab I.D.	1731714	1731715	1731716	1731717
					Sample Matrix	1731714	1731715	1731716	1731717
					Sample Type	2024-06-12	2024-06-12	2024-06-12	2024-06-12
					Sampling Date	NW 24D	NW 24S	MW 42	MW 49
					Sample I.D.				
Metals	Ag	0.0001	mg/L	PWQO 0.0001		<0.0001	<0.0001	<0.0001	<0.0001
	Al	0.01	mg/L	IPWQO 0.075		3.17*	3.62*	7.45*	6.84*
	As	0.001	mg/L	PWQO 0.100		0.001	0.007	0.007	0.006
	B	0.01	mg/L	IPWQO 0.200		0.06	0.13	0.07	0.02
	Ba	0.01	mg/L			0.20	0.19	0.37	0.28
	Be	0.0005	mg/L	PWQO 0.011		<0.0005	<0.0005	0.0009	0.0010
	Cd	0.0001	mg/L	PWQO 0.0002		<0.0001	0.0001	0.0002	0.0003*
	Co	0.0002	mg/L	PWQO 0.0009		0.0022*	0.0062*	0.0146*	0.0168*
	Cr	0.001	mg/L			0.006	0.012	0.017	0.012
	Cu	0.001	mg/L	PWQO 0.005		0.005	0.022*	0.035*	0.031*
	Fe	0.03	mg/L	PWQO 0.30		2.69*	6.45*	18.6*	18.7*
	Hg	0.0001	mg/L			<0.0001	<0.0001	<0.0001	<0.0001
	Li	0.001	mg/L			0.044			
	Mo	0.005	mg/L	IPWQO 0.040		0.006	<0.005	<0.005	<0.005
	Ni	0.005	mg/L	PWQO 0.025		0.006	0.018	0.019	0.019
	Pb	0.001	mg/L	PWQO 0.005		0.002	0.004	0.018*	0.009*
	Sb	0.0005	mg/L	IPWQO 0.020		<0.0005	<0.0005	<0.0005	<0.0005
	Se	0.001	mg/L	PWQO 0.100		0.001	0.002	0.006	0.005
	Tl	0.0001	mg/L	IPWQO 0.0003		<0.0001	<0.0001	<0.0001	<0.0001
	U	0.001	mg/L	IPWQO 0.005		0.003	0.003	0.003	0.003
V	0.001	mg/L	IPWQO 0.006		0.007*	0.011*	0.022*	0.014*	
W	0.002	mg/L	IPWQO 0.030		<0.002	<0.002	<0.002	<0.002	
Zn	0.01	mg/L	PWQO 0.030		<0.01	0.03	0.04*	0.03	
Zr	0.002	mg/L	IPWQO 0.004		0.003	0.003	<0.002	<0.002	

Guideline = PWQO - Ontario

\* = Guideline Exceedence

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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**Certificate of Analysis**

Client: GEI Consultants Inc.  
 647 Welham Road  
 Barrie, ON  
 L4N 0B7  
 Attention: Ms. Kim Pickett  
 PO#:   
 Invoice to: GEI Consultants Inc.

Report Number: 3008395  
 Date Submitted: 2024-06-14  
 Date Reported: 2024-06-21  
 Project: 2400278  
 COC #: 915020

Group	Analyte	MRL	Units	Guideline	1731718 SURF W  2024-06-12 MW 52S	1731719 SURF W  2024-06-12 MW 52D	1731720 SURF W  2024-06-12 MW 102
Metals	Ag	0.0001	mg/L	PWQO 0.0001	<0.0001	<0.0001	<0.0001
	Al	0.01	mg/L	IPWQO 0.075	1.56*	2.93*	0.96*
	As	0.001	mg/L	PWQO 0.100	0.002	0.004	0.005
	B	0.01	mg/L	IPWQO 0.200	0.06	0.18	0.05
	Ba	0.01	mg/L		0.14	0.17	0.13
	Be	0.0005	mg/L	PWQO 0.011	<0.0005	<0.0005	<0.0005
	Cd	0.0001	mg/L	PWQO 0.0002	<0.0001	<0.0001	<0.0001
	Co	0.0002	mg/L	PWQO 0.0009	0.0022*	0.0049*	0.0021*
	Cr	0.001	mg/L		0.003	0.012	0.006
	Cu	0.001	mg/L	PWQO 0.005	0.006*	0.011*	0.021*
	Fe	0.03	mg/L	PWQO 0.30	1.51*	5.87*	2.63*
	Hg	0.0001	mg/L		<0.0001	<0.0001	<0.0001
	Mo	0.005	mg/L	IPWQO 0.040	<0.005	<0.005	<0.005
	Ni	0.005	mg/L	PWQO 0.025	0.006	0.008	0.006
	Pb	0.001	mg/L	PWQO 0.005	<0.001	0.004	0.008*
	Sb	0.0005	mg/L	IPWQO 0.020	<0.0005	<0.0005	<0.0005
	Se	0.001	mg/L	PWQO 0.100	<0.001	0.002	<0.001
	Tl	0.0001	mg/L	IPWQO 0.0003	<0.0001	<0.0001	<0.0001
	U	0.001	mg/L	IPWQO 0.005	0.004	0.003	<0.001
	V	0.001	mg/L	IPWQO 0.006	0.005	0.009*	0.003
W	0.002	mg/L	IPWQO 0.030	<0.002	<0.002	<0.002	
Zn	0.01	mg/L	PWQO 0.030	0.01	0.02	<0.01	
Zr	0.002	mg/L	IPWQO 0.004	<0.002	<0.002	<0.002	

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 Project: 2400278  
 COC #: 915020

**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
<b>Run No</b> 461826 <b>Analysis/Extraction Date</b> 2024-06-21 <b>Analyst</b> AaN			
<b>Method</b> EPA 200.8			
Silver	<0.0001 mg/L	96	80-120
Aluminum	<0.01 mg/L	119	80-120
Arsenic	<0.001 mg/L	97	80-120
Boron (total)	<0.01 mg/L	102	80-120
Barium	<0.01 mg/L	104	80-120
Beryllium	<0.0005 mg/L	107	80-120
Cadmium	<0.0001 mg/L	110	80-120
Cobalt	<0.0002 mg/L	110	80-120
Chromium Total	<0.001 mg/L	109	80-120
Copper	<0.001 mg/L	114	80-120
Iron	<0.03 mg/L	95	80-120
Mercury	<0.0001 mg/L	101	80-120
Li	<0.001 mg/L	103	80-120
Molybdenum	<0.005 mg/L	105	80-120
Nickel	<0.005 mg/L	114	80-120
Lead	<0.001 mg/L	112	80-120

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**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
Antimony	<0.0005 mg/L	117	80-120
Selenium	<0.001 mg/L	104	80-120
Thallium	<0.0001 mg/L	113	80-120
Uranium	<0.001 mg/L	102	80-120
Vanadium	<0.001 mg/L	105	80-120
W	<0.002 mg/L	114	80-120
Zinc	<0.01 mg/L	115	80-120
Zr	<0.002 mg/L	98	80-120

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## **Appendix E8 – MECP Well Records Summary**



	17										
BRAMPTON CITY (CHING W	598258 4847223	2012/0 4 7306	5	50//6/ 1:	DO		7179696	7179696 (Z113390) A098793			
BRAMPTON CITY (CHING W	598317 4847523	2014/0 5 7472	0.75		MO	0010 10	7230567	7230567 (Z192745) A166066	BRWN SILT LOOS 0010 GREY SILT FSND PCKD 0020		
BRAMPTON CITY (CHING W	598656 4847534	2014/0 5 7472	0.75		MO	0010 10	7230568	7230568 (Z192744) A166065	BRWN SILT LOOS 0010 GREY SILT FSND PCKD 0020		
BRAMPTON CITY (CHING W	598290 4847545	2014/0 5 7472	0.75		MO	0010 10	7230569	7230569 (Z192743) A166064	BRWN SILT LOOS 0010 GREY SILT FSND PCKD 0020		
BRAMPTON CITY (CHING W	598560 4847751	2015/0 4 7215					7269723	7269723 (C29338) A182907			
BRAMPTON CITY (CHING W	598453 4847725	2014/1 1 7215					7238351	7238351 (C27921) A176965			
BRAMPTON CITY (CHING W	598246 4847132	2020/0 7 7464	2		MT	0010 10	7371134	7371134 (Z324738) A296917	BRWN SILT CLAY HARD 0005 BRWN TILL HARD 0020		

BRAMPTON CITY (CHING HS E 04 017)	17 598303 4847113 W	2020/0 7 7464	2		TH	0010 10	7371131	7371131 (Z324741) A296920	BRWN SILT CLAY HARD 0005 BRWN TILL HARD 0020
BRAMPTON CITY (CHING HS E 04 017)	17 598441 4847730 W	2021/0 4 7215					7389913	7389913 (C50524) A290770	
BRAMPTON CITY (CHING HS E 04 017)	17 598119 4847159 W	2022/0 1 7360	2		MO	0020 10	7413570	7413570 (NWFADY G7) A344058	FILL HARD 0005 CLAY TILL HARD 0025 CLAY TILL HARD 0030
BRAMPTON CITY (CHING HS E 04 017)	17 598115 4847182 W	2022/0 1 7360	2	UT 0030	MO	0030 10	7413569	7413569 (3HSGRRU) A344057	FILL HARD 0010 CLAY TILL HARD 0030 CLAY TILL HARD 0040
BRAMPTON CITY (CHING HS E 04 017)	17 598145 4847116 W	2022/0 1 7360	2		MO	0015 10	7413566	7413566 (2WWGDE SJ) A337445	FILL HARD 0005 CLAY TILL HARD 0020 SILT TILL HARD 0025
BRAMPTON CITY (CHING HS E 04 017)	17 598161 4847140 W	2022/0 1 7360	2		MO	0015 10	7413564	7413564 (276IN3DF) A337443	FILL HARD 0005 CLAY TILL HARD 0020 CLAY TILL HARD 0025
BRAMPTON CITY (CHING HS E 04 017)	17 598143 4847135 W	2022/0 1 7360	2		MO	0015 10	7413567	7413567 (T3DHKUV W) A337446	FILL HARD 0005 CLAY TILL HARD 0020 CLAY TILL HARD 0025
BRAMPTON CITY (CHING HS E 04 017)	17 598089 4847168 W	2022/0 1 7360	2		MO	0020 10	7413565	7413565 (O3NYFR7 P) A337444	FILL HARD 0005 CLAY TILL HARD 0025 CLAY TILL HARD 0030

BRAMPTON CITY (CHING HS E 05	17 598705 4847685 W	7314	5.19	FR 0004		OT	0017 2	7354444	7354444 (Z265143) A139405	BRWN LOAM 0000 BRWN SILT CLYY GRVL 0001 BRWN SILT TILL SAND 0013 GREY SILT TILL CLYY 0016 GREY CLAY SLTY 0018 GREY SILT TILL SNDY 0019
BRAMPTON CITY (CHING HS E 05 017	17 598495 4847703 W	1970/0 6 5459	5	FR 0101	77/81/ 8/3:0	DO	0101 4	4903466	4903466 ( )	PRDG 0072 GREY CLAY MSND 0090 GREY FSND 0101 GREY MSND 0105
BRAMPTON CITY (CHING HS E 05 017	17 598260 4847109 W	2017/0 1 7221	6.30 10.2					7280488	7280488 (Z249185) A	
BRAMPTON CITY (CHING HS E 05 017	17 598245 4847122 W	2017/0 1 7221	6.30 10.2					7280479	7280479 (Z249186) A	
BRAMPTON CITY (CHING HS E 05 017	17 598272 4847154 W	2020/0 7 7464	2			MT	0010 10	7371132	7371132 (Z324740) A296919	BRWN SILT CLAY HARD 0005 BRWN TILL HARD 0020
BRAMPTON CITY (CHING HS E 05 017	17 598278 4847113 W	2020/0 7 7464	2			MT	0010 10	7371133	7371133 (Z324739) A296918	BRWN SILT CLAY HARD 0005 BRWN TILL HARD 0020
BRAMPTON CITY (CHING HS E 05 017	17 599056 4848097 W	1966/1 2 3512	7					4901466	4901466 ( ) A	LOAM 0001 YLLW CLAY 0016 BLUE CLAY 0045 GRVL 0065 BLUE SHLE 0100
BRAMPTON CITY (CHING HS E 05 017	17 598465 4847643 W	1968/0 9 4813	5	FR 0108	80/10 8/4/:	NU		4903107	4903107 ( ) A	BRWN CLAY 0018 BLUE CLAY 0078 SILT GRVL 0116 BLUE SHLE 0140

BRAMPTON CITY (CHING HS E 05 017)	17 598487 4847742 W	1967/0 9 4813	7	SA 0142	102/1 42/1/0 :30	NU		4901469	4901469 ( ) A	GREY CLAY 0072 SILT 0098 BLUE SHLE 0142
BRAMPTON CITY (CHING HS E 05 017)	17 599071 4848107 W	1967/0 1 3512	7	FR 0060	45/55/ 1/2:0	DO		4901467	4901467 ( )	LOAM 0001 YLLW CLAY 0016 BLUE CLAY 0045 GRVL 0065
BRAMPTON CITY (CHING HS E 05 017)	17 598273 4847446 W	1966/1 0 4813	5	FR 0092	77/80/ 6/4:0	DO	0093 4	4901465	4901465 ( )	BRWN CLAY 0018 BLUE CLAY 0092 GRVL 0097
BRAMPTON CITY (CHING HS E 05 017)	17 598260 4847100 W	1964/0 8 2801	26 16	FR 0099	61/71/ 715/7 2:0	MN	0115 30	4901464	4901464 ( )	CLAY GRVL 0017 CLAY GRVL BLDR 0047 CLAY GRVL 0064 CLAY 0071 CLAY GRVL 0080 SILT CLAY 0099 MSND GRVL BLDR 0146
BRAMPTON CITY (CHING HS E 05 017)	17 598275 4847085 W	1964/0 6 2801	6			NU		4901463	4901463 ( )	LOAM 0001 BRWN CLAY GRVL 0010 BRWN CLAY MSND 0019 BLUE CLAY GRVL BLDR 0047 BLUE CLAY GRVL 0064 CLAY 0073 CLAY GRVL 0076 SILT CLAY 0085 SILT QSND 0097 CLAY MSND 0102 MSND GRVL 0124 CLAY GRVL 0126 MSND GRVL BLDR 0143 LMSN 0144
BRAMPTON CITY (CHING HS E 05 017)	17 598447 4847682 W	1967/1 1 1325	30	FR 0067	67/73/ 1/1:0	DO		4901468	4901468 ( )	LOAM 0002 BRWN CLAY 0017 CSND 0018 BLUE CLAY BLDR 0067 CSND 0074
BRAMPTON CITY (CHING HS E 05 017)	17 598499 4847780 W	2022/0 1 7230						7418453 7418453	7418453 (C55686) A320721 P	

BRAMPTON CITY (CHING HS E 05 017	17 598496 4847176 W	2022/0 4 7732	1.97	UT 0015	0010 10	7416251	7416251 (46ZIYIYU) A289499 A
BRAMPTON CITY (CHING HS E 05 017	17 598266 4847096 W	2022/0 5 7221				7419414	7419414 (Z372756) P
BRAMPTON CITY (CHING HS E 05 017	17 598311 4847580 W	2022/0 1 7230				7418454	7418454 (C55685) A320718 P
BRAMPTON CITY (CHING HS E 05 017	17 598268 4847156 W	2022/0 2 6607		0016		7411679	7411679 (75UW3H 3E) A296919 A
BRAMPTON CITY (CHING HS E 05 017	17 598300 4847118 W	2022/0 2 6607		0016		7411680	7411680 (9V2TR9A R) A296920 A
BRAMPTON CITY (CHING HS E 05 017	17 598279 4847112 W	2022/0 2 6607		0016		7411681	7411681 (FZVHLIYI) A296918 A



BRAMPTON CITY (CHING HS E 05 017)	17 598248 4847131 W	2022/0 2 6607		0016				7411685 7411685	7411685 (X75T3XG K) A296917 A	
BRAMPTON CITY (CHING HS E 06)	17 599144 4848473 W	7314						7354443 7354443	7354443 (C38625) A139397 P	
BRAMPTON CITY (CHING HS E 06 016)	17 598924 4848376 W	1964/1 0 1325	30	FR 0051	21/25/ 20/1:0	DO		4901535 4901535 ( )	LOAM 0003 BRWN CLAY 0021 HPAN 0036 BLUE CLAY SILT 0051	
BRAMPTON CITY (CHING HS E 06 017)	17 598994 4848581 W	2021/0 1 6607	2			MO	0005 5	7384180 7384180 (7BYXJOB G) A293473	BRWN LOAM CLAY SOFT 0005 BRWN SILT CLAY DNSE 0010	
BRAMPTON CITY (CHING HS E 06 017)	17 599050 4848512 W	2021/0 1 6607	2			MO	0005 5	7384188 7384188 (LY6JHD3 Q) A293478	BRWN LOAM CLAY SOFT 0005 BRWN SILT CLAY DNSE 0010	
BRAMPTON CITY (CHING HS E 06 017)	17 599083 4848422 W	2021/0 1 6607	2			MO	0005 5	7384207 7384207 (ZDGFBB2 2) A293518	BRWN LOAM CLAY SOFT 0005 BRWN SILT CLAY DNSE 0010	
BRAMPTON CITY (CHING HS E 06 017)	17 599025 4848364 W	2021/0 1 6607	2			MO	0005 5	7384190 7384190 (SX66EIFX) A293488	BRWN LOAM CLAY SOFT 0005 BRWN SILT CLAY DNSE 0010	

BRAMPTON CITY (CHING HS E 06 017)	17 599154 4848448 W	1965/0 9 1325	30	FR 0046	39/54/ 2/0:30	ST DO		4901540	4901540 ( )	LOAM MSND 0002 BRWN CLAY MSND 0009 BLUE CLAY 0027 BLUE CLAY MSND 0046 BLUE MSND 0056
CALEDON TOWN (CHINGU)	17 597001 4849586 W	2004/0 5 6809	2				0031 10	4909650	4909650 (Z11192) A006736	LOAM 0006 SAND SLTY 0015 GREY SAND SILT CLAY 0031 SAND TILL SILT 0041
CALEDON TOWN (CHINGU 03 022)	17 596254 4848672 W	2005/0 6 7154	6.25	FR 0129	47/50/ 20/1:0	DO	0130 14	4909808	4909808 (Z20368) A020145	BRWN CLAY 0021 GREY CLAY SILT 0089 GREY CLAY STNS 0099 GREY FSND 0126 GREY CSND 0144
CALEDON TOWN (CHINGU HS E 04 018)	17 597658 4847627 W	2009/0 1 4011			44///:	NU		7118688	7118688 (Z89927) A	
CALEDON TOWN (CHINGU HS E 04 018)	17 597696 4847557 W	1964/0 4 1325	30	FR 0060	58/64/ 0/1:0	DO		4901395	4901395 ( )	BRWN CLAY MSND 0018 BLUE CLAY MSND BLDR 0041 BLUE CLAY MSND 0065
CALEDON TOWN (CHINGU HS E 04 019)	17 597364 4847803 W	1970/0 6 3316	5	SA 0096	93/94/ 10/6:0	ST DO	0097 6 0103 7	4903449	4903449 ( )	CLAY STNS 0050 CLAY MSND 0096 CSND 0111
CALEDON TOWN (CHINGU HS E 04 019)	17 597264 4847973 W	1980/1 0 3317	5 5	FR 0144	53/60/ 12/1:3 0	DO	0144 4	4905710	4905710 ( )	BRWN CLAY STNS 0020 GREY CLAY STNS 0060 GREY CLAY SILT 0132 FSND SILT CLAY 0142 SAND GRVL 0148
CALEDON TOWN (CHINGU HS E 04 019)	17 597588 4847628 W	2020/0 8 7719	6	UT 0117	51/53/ 10/1:	DO	0115 5	7372029	7372029 (Z340213) A299779	BRWN CLAY 0014 GREY CLAY 0027 GREY CLAY STNS SILT 0034 BRWN CLAY STNS SILT 0110 BRWN SAND 0120

MECP Well Records Summary



CALEDON TOWN (CHINGU HS E 04 020	17 596994 4848258 W	1985/0 8 1663	6	FR 0110	50/11 0/40/1 :0	DO	0117 3	4906460	4906460 ( )	BRWN CLAY GRVL 0012 BLUE CLAY SAND GRVL 0075 GREY FSND 0080 BLUE CLAY 0092 GREY FSND 0105 GREY MSND 0120 GREY FSND 0148 GREY CSND GRVL 0155
CALEDON TOWN (CHINGU HS E 04 020	17 597114 4848123 W	1981/0 6 4868	6	FR 0145	79//10 /:	DO		4905836	4905836 ( )	BRWN LOAM SOFT 0002 GREY CLAY PCKD 0123 BRWN SILT SOFT 0145 BRWN GRVL PCKD 0150
CALEDON TOWN (CHINGU HS E 04 020	17 597120 4848127 W	2006/0 7 4011	0.3		11///:			4910263	4910263 (Z49776) A	0067
CALEDON TOWN (CHINGU HS E 04 020	17 596281 4847961 W	2021/1 1 7360	2			MO	0010 10	7405121	7405121 (5GPGPQE U) A319828	CLAY GRVL 0020
CALEDON TOWN (CHINGU HS E 04 020	17 596237 4847627 W	2022/0 4 7190	2 4	UT 0038		MO	0035 5	7417503	7417503 (QR4NO4 4R) A346287	BRWN LOAM 0001 BRWN TILL 0038 GREY TILL SILT 0040
CALEDON TOWN (CHINGU HS E 04 020	17 596687 4847609 W	2021/1 1 7360	2			MO	0010 10	7405122	7405122 (LWTAFV3 U) A319829	CLAY GRVL 0020
CALEDON TOWN (CHINGU HS E 04 021	17 595902 4849408 W	1993/0 8 6809	2	FR 0050		NU	0060 3	4907833	4907833 (56658)	BRWN LOAM 0005 BRWN SAND SILT GRVL 0040 BRWN GRVL SNDY 0065



CALEDON TOWN (CHINGU HS E 04 021	17 596231 4849019 W	1992/0 5 3108	6	FR 0054	39/55/ 60/2:0	DO	0055 6	4907640	4907640 (095307)	BRWN CLAY 0006 BRWN SAND 0014 BRWN CLAY 0019 BRWN SAND 0031 SAND GRVL 0054 SAND CLN 0061 BLUE CLAY 0085
CALEDON TOWN (CHINGU HS E 04 021	17 596411 4848835 W	1991/0 5 3317	6	FR 0072	37/42/ 12/1:3 0	DO	0072 3	4907592	4907592 (88406)	CLAY GRVL 0057 BRWN CLAY STNS 0070 GRVL SAND 0075
CALEDON TOWN (CHINGU HS E 04 021	17 595841 4849435 W	1993/0 8 6809	2	FR 0050		NU	0060 5	4907831	4907831 (143779)	BRWN LOAM LOOS 0005 BRWN SAND GRVL DNSE 0065
CALEDON TOWN (CHINGU HS E 04 021	17 595995 4849301 W	1993/0 8 6809	2	FR 0045		NU	0060 5	4907832	4907832 (56657)	BRWN LOAM LOOS 0005 BRWN SAND GRVL SLTY 0065
CALEDON TOWN (CHINGU HS E 04 021	17 596583 4848459 W	1990/1 0 3317	8 8 8	FR 0135 FR 0146	42/12 0/400/ 8:0		0135 15	4907460	4907460 (88146)	BRWN CLAY 0024 BRWN CLAY SAND 0034 GREY CLAY STNS 0046 GREY CLAY 0060 GREY CLAY SOFT 0080 GREY CLAY SILT 0131 SAND CSND 0133 SAND GRVL 0138 SAND GRVL 0142 FGVL 0145 STNS GRVL CGVL 0148 STNS GRVL 0153 SHLE 0155
CALEDON TOWN (CHINGU HS E 04 021	17 596079 4848267 L	2004/0 3 7143	6 5 5	UK 0070	29/65/ 5/7:0	DO		4909362	4909362 (257843)	BRWN CLAY BLDR 0020 WHIT LMSN 0054 BRWN LMSN 0062 BRWN LMSN GRVL 0070



CALEDON TOWN (CHINGU HS E 04 021	17 596524 4848397 W	1964/0 8 2801	2 2	FR	56///:	NU	0140 20	4901402	4901402 ( )	BRWN CLAY GRVL BLDR 0010 BLUE CLAY GRVL BLDR 0042 BLUE CLAY 0073 SILT 0088 SILT FSND 0136 SILT MSND GRVL 0145 MSND GRVL 0153 MSND GRVL BLDR 0163 CLAY BLDR 0170 SHLE 0172
CALEDON TOWN (CHINGU HS E 04 021	17 596588 4848498 W	1964/0 7 2801	6			NU		4901398	4901398 ( )	BRWN CLAY GRVL BLDR 0030 BLUE CLAY SILT 0043 GRVL 0045 BLUE CLAY GRVL 0071 SILT CLAY 0106 SILT 0110 SILT CLAY 0118 SILT 0128 CLAY 0130 SILT 0136 GRVL 0140 SHLE 0153
CALEDON TOWN (CHINGU HS E 04 021	17 596662 4848579 W	1964/0 7 2801	6			NU		4901399	4901399 ( )	LOAM 0006 SILT MSND 0020 CLAY MSND 0045 CLAY 0055 GRVL 0056 CLAY SILT 0072 CLAY BLDR 0074 HPAN CLAY 0082 BLDR 0084 CLAY GRVL 0156 SHLE 0157
CALEDON TOWN (CHINGU HS E 04 021	17 596358 4848216 W	1964/0 7 2801	6			NU		4901400	4901400 ( )	BRWN CLAY GRVL BLDR 0010 BLUE CLAY GRVL BLDR 0024 MSND 0025 CLAY GRVL BLDR 0034 CLAY 0071 SILT 0080 CLAY 0089 CLAY SILT 0102 SILT 0137 CLAY SHLE 0156
CALEDON TOWN (CHINGU HS E 04 021	17 596548 4848428 W	1964/0 7 2801	2	FR 0140	55/56/ 15/3:0	NU	0142 20	4901401	4901401 ( )	LOAM 0001 BRWN CLAY GRVL BLDR 0010 BLUE CLAY GRVL 0040 CLAY GRVL BLDR 0043 CLAY 0068 CLAY SILT 0107 SILT 0118 CLAY SILT 0121 SILT FSND 0136 SILT MSND GRVL 0140 MSND GRVL 0149 MSND GRVL CLAY 0152 MSND GRVL BLDR 0160 GRVL BLDR CLAY 0164 CLAY 0169 SHLE 0172



CALEDON TOWN (CHINGU HS E 04 021	17 596274 4848140 W	1964/0 8 2801	6			NU		4901404	4901404 ( )	BRWN CLAY GRVL BLDR 0012 BLUE CLAY GRVL BLDR 0050 CLAY SILT 0080 CLAY GRVL BLDR 0118 CLAY GRVL SHLE 0133 LMSN 0135
CALEDON TOWN (CHINGU HS E 04 021	17 596364 4848216 W	1964/0 8 2801	6			NU		4901403	4901403 ( )	LOAM 0003 BRWN CLAY GRVL BLDR 0012 MSND 0013 BLUE CLAY GRVL BLDR 0030 GRVL BLDR 0036 CLAY GRVL 0065 CLAY SILT 0090 SHLE CLAY GRVL 0134 LMSN 0139
CALEDON TOWN (CHINGU HS E 04 021	17 596129 4847945 W	2022/0 4 7190	2 4	UT 0040		MO	0040 5	7417504	7417504 (V6OPVPV 8) A346288	BRWN LOAM 0001 BRWN CLAY 0012 GREY CLAY TILL 0035 GREY SILT 0045
CALEDON TOWN (CHINGU HS E 04 022	17 595319 4848769 W	1991/0 3 3317	6	FR 0058	47/55/ 11/1:3 0	DO	0058 4	4907591	4907591 (24773)	CLAY STNS 0057 GRVL SAND 0062
CALEDON TOWN (CHINGU HS E 04 022	17 595428 4848822 W	1996/1 1 6915	6	FR 0070	35/50/ 12/2:0	DO	0061 5	4908188	4908188 (176516)	BRWN CLAY SAND 0010 BRWN CLAY SNDS 0023 BLUE CLAY SAND SILT 0051 BLUE GRVL SAND CMTD 0060 BLUE GRVL SAND WBRG 0071
CALEDON TOWN (CHINGU HS E 04 022	17 595319 4848769 W	1990/0 9 3317	6	FR 0064	33/40/ 20/2:0	DO	0064 3	4907459	4907459 (88148)	BRWN CLAY 0010 BRWN CLAY STNS 0039 SAND 0042 GREY CLAY 0051 SAND GRVL 0067
CALEDON TOWN (CHINGU HS E 04 022	17 595739 4849120 W	2013/0 9 7154	6.25	FR 0104	51/57/ 10/15:	DO	0104 4	7210172	7210172 (Z169287) A125463	BRWN SILT CLAY SAND 0021 BRWN SAND 0045 BRWN GRVL 0064 GREY CLAY GRVL 0099 GREY GRVL 0108

CALEDON TOWN (CHINGU HS E 04 022	17 595440 4848240 W	2013/0 6 7147	5.9	FR 0008					7202814 7202814 (Z171527) A	
CALEDON TOWN (CHINGU HS E 04 022	17 595778 4849059 W	1959/0 1 1307	30	FR 0037	37//1/ :	DO		4901407	4901407 ( )	BRWN LOAM CLAY 0037 GREY CSND 0047
CALEDON TOWN (CHINGU HS E 04 023	17 595214 4848873 W	1976/0 7 3903	6	UK 0066	31/65/ 5/4:0	DO	0068 5	4904995	4904995 ( )	BRWN CLAY STNS HARD 0021 BLUE CLAY STNS SHLE 0068 GREY SAND GRVL SHLE 0073
CALEDON TOWN (CHINGU HS E 04 023	17 595384 4848981 W	1998/0 7 6782	8 6	FR 0068	44/56/ 16/24: 0	DO		4908417	4908417 (193142)	BRWN CLAY 0026 GREY CLAY 0041 GREY MSND CLAY LYRD 0068
CALEDON TOWN (CHINGU HS E 04 023	17 596258 4850138 W	1989/1 0 3132	6 6	FR 0089	//7/8: 0	DO	0088 5	4907203	4907203 (65765)	BRWN CLAY STNS DNSE 0014 BLUE CLAY STNS DNSE 0034 GREY CLAY SOFT 0072 BLUE SILT LOOS 0084 BLUE CLAY GRVL SAND 0098
CALEDON TOWN (CHINGU HS E 04 023	17 595478 4849116 W	2000/0 1 6782	8 6	FR 0085	51/78/ 10/2:0	DO	0092 4	4908549	4908549 (206452)	BRWN MSND CLAY 0035 BRWN CSND GRVL 0052 GREY SAND GRVL CLAY 0060 GREY GRVL CLAY FGVL 0065 GREY GRVL 0070 GREY GRVL CLAY 0075 GREY GRVL 0075
CALEDON TOWN (CHINGU HS E 04 023	17 594968 4848739 W	1964/0 3 4813	7 7	FR 0098	50/10 5/2/3: 0	ST DO		4901410	4901410 ( )	BRWN CLAY 0018 BLUE CLAY 0048 BRWN FSND 0059 GRVL CLAY 0096 SHLE 0102 GREY LMSN 0112

MECP Well Records Summary



CALEDON TOWN (CHINGU HS E 05 018	17 598087 4848105 W	1975/1 2 3317	5	FR 0065	41/55/ 10/48: 0	ST DO	0064 7	4904837	4904837 ( )	CLAY STNS 0040 GREY CLAY SAND 0063 GRVL SAND 0072
CALEDON TOWN (CHINGU HS E 05 018	17 598158 4848055 W	1975/1 2 3317	7 5	SA 0090	40/95/ 1/1:0	NU		4904836	4904836 ( )	CLAY STNS 0058 BLUE SHLE 0095
CALEDON TOWN (CHINGU HS E 05 018	17 598545 4848512 W	1983/0 9 3662				NU		4906134	4906134 ( )	BLCK LOAM 0001 BRWN CLAY 0017 BLUE CLAY STNS HARD 0025 GREY SAND GRVL 0026 BLUE CLAY STNS HARD 0046
CALEDON TOWN (CHINGU HS E 05 018	17 598260 4848016 W	1975/1 2 3317	5	FR 0075 FR 0095 SA 0115	40/12 5/2/1: 0	NU		4904835	4904835 ( )	CLAY STNS 0056 BLUE SHLE 0095 GREY SHLE 0125
CALEDON TOWN (CHINGU HS E 05 018	17 598451 4847787 W	1967/0 6 4813	5	FR 0105	65/90/ 6/3:0	DO	0104 4	4901470	4901470 ( )	BRWN CLAY 0030 BLUE CLAY 0060 GRVL 0075 SILT 0100 MSND 0105 SHLE 0108
CALEDON TOWN (CHINGU HS E 05 019	17 597615 4847723 W	1971/0 4 3645	5	FR 0120	95/10 0/6/3: 0	DO	0122 3	4903586	4903586 ( )	LOAM 0001 YLLW CLAY 0035 HPAN 0065 BLUE CLAY 0115 GRVL 0120 CSND 0128
CALEDON TOWN (CHINGU HS E 05 020	17 597797 4849333 W	1983/1 0 3349	6 6	FR 0049	2/46/7 /1:0	DO		4906194	4906194 ( )	BLCK LOAM 0001 GREY CLAY 0035 BLUE SHLE 0080
CALEDON TOWN (CHINGU HS E 05 020	17 597098 4848351 W	1975/0 8 3317	5	FR 0071	51/55/ 10/3:3 0	DO	0071 3	4904833	4904833 ( )	BRWN CLAY 0015 GREY CLAY STNS 0030 SAND 0038 GREY CLAY 0040 SILT CLAY 0050 SILT GRVL 0071 GRVL SAND 0074

CALEDON TOWN (CHINGU HS E 05 020	17 597370 4849530 W	1975/1 2 1307	30	FR 0044	20//1/ 1:0	PS		4904809	4904809 ( )	BRWN LOAM 0012 GREY CLAY 0042 GRVL 0044 GREY CLAY SHLE 0050
CALEDON TOWN (CHINGU HS E 05 020	17 597615 4849473 W	1976/1 1 1307	30	FR 0038	15/36/ 4/1:0	DO		4905023	4905023 ( )	BRWN LOAM 0010 GREY CLAY 0036 CSND WBRG 0038
CALEDON TOWN (CHINGU HS E 05 021	17 597489 4849429 W	1997/0 1 6809	2	UK 0010		NU	0010 5	4908179	4908179 (159372)	BRWN TILL HARD 0010 GREY SILT 0015
CALEDON TOWN (CHINGU HS E 05 021	17 597489 4849429 W	1997/0 1 6809	2	FR 0019		NU	0030 5	4908181	4908181 (159369)	BRWN TILL HARD 0010 GREY CLAY SILT 0030 GREY SILT 0035 GREY SHLE 0035
CALEDON TOWN (CHINGU HS E 05 021	17 597489 4849429 W	1997/0 1 6809	2			NU	0031 5	4908180	4908180 (159373)	BRWN TILL HARD 0010 GREY CLAY SILT 0031 GREY SILT 0036 GREY SHLE 0036
CALEDON TOWN (CHINGU HS E 05 021	17 597489 4849429 W	1997/0 1 6809	2	FR 0030		NU	0030 5	4908178	4908178 (159371)	BRWN TILL HARD 0010 GREY CLAY SILT 0030 GREY SILT 0035 GREY SHLE 0035
CALEDON TOWN (CHINGU HS E 05 021	17 597489 4849429 W	1997/0 1 6809	2	FR 0020		NU	0027 5	4908183	4908183 (159370)	BRWN TILL HARD 0010 GREY CLAY SILT 0027 GREY SILT 0037 GREY SHLE 0037
CALEDON TOWN (CHINGU HS E 05 021	17 597489 4849429 W	1997/0 1 6809	2	FR 0020		NU	0030 5	4908182	4908182 (159385)	BRWN TILL HARD 0011 GREY CLAY SILT 0019 GREY SILT 0023 GREY ROCK WTHD 0030

CALEDON TOWN (CHINGU HS E 05 021	17 596576 4848834 W	1965/0 8 5416	7	FR 0077	40/60/ 18/3:0	ST		4901471	4901471 ( )	FILL LOAM 0010 MSND STNS 0072 MSND GRVL 0077 GRVL 0096
CALEDON TOWN (CHINGU HS E 05 022	17 596254 4850003 W	1971/0 4 1307	30	FR	10/27/ 50/1:0	DO		4903591	4903591 ( )	BRWN LOAM 0012 GREY CLAY 0032 GRVL 0033
CALEDON TOWN (CHINGU HS E 05 022	17 596014 4849318 W	5206	6	FR 0065	32/90/ 20/24: 0	DO ST	0092 7	4907149	4907149 (49162)	BRWN CLAY 0008 BRWN CLAY TILL 0035 BRWN GRVL 0065 GRVL 0099 RED SHLE 0102
CALEDON TOWN (CHINGU HS E 05 022	17 596236 4850102 W	1998/1 0 6782	8 6	FR 0093	3/48/3 /0:0	DO		4908416	4908416 (193171)	BRWN CLAY STNS 0006 GREY CLAY SAND LYRD 0087 GREY MSND CLAY 0095
CALEDON TOWN (CHINGU HS E 05 022	17 595930 4849600 W	1989/0 4 5206	6	FR 0065	11/90/ 15/15: 0	DO ST	0094 5	4907150	4907150 (49169)	BRWN CLAY 0065 BRWN SAND GRVL SILT 0093 GRVL SAND SILT 0099 RED SHLE 0103
CALEDON TOWN (CHINGU HS E 05 022	17 596011 4849575 W	2006/0 7 4011	5		24///:			4910260	4910260 (Z49778) A	0134
CALEDON TOWN (CHINGU HS E 05 022	17 595926 4849561 W	1961/0 9 4813	7 7	FR 0072 FR 0114 FR 0140	36/14 0/2/2: 0	ST		4901472	4901472 ( )	BRWN CLAY 0008 BRWN CLAY MSND 0038 BLUE CLAY 0072 SILT 0080 SILT CLAY 0110 GRVL 0115 BLUE SHLE 0131 GREY LMSN 0145
CALEDON TOWN (CHINGU HS E 05 022	17 596562 4850377 W	1961/1 1 4813	7	FR 0067	30/63/ 10/72: 0	ST	0063 4	4901473	4901473 ( )	BLCK LOAM 0002 BRWN CLAY 0005 BRWN CLAY MSND 0058 GREY CLAY 0066 GRVL 0067





CALEDON TOWN (CHINGU HS E 05 023 W	17 596314 4850248	1978/0 6 3814	30	FR 0050	40//3/ 1:0	DO		4905464	4905464 ( )	UNKN 0050 SAND 0057
CALEDON TOWN (CHINGU HS E 05 023 W	17 596205 4850157	2019/1 0 7523	6.07	FR 0092	2/21/7 /1:	DO	0087 5	7349191	7349191 (Z325862) _NO_TAG	BLCK LOAM 0003 BRWN SAND CLAY 0020 GREY CLAY 0076 GREY SAND GRVL 0090 GREY SHLE GRVL LYRD 0095
CALEDON TOWN (CHINGU HS E 05 023 W	17 596229 4850134	2019/1 0 7523	6.25					7349190	7349190 (Z325863) A	
CALEDON TOWN (CHINGU HS E 05 023 W	17 596212 4850173	2019/1 0 7523	6					7349189	7349189 (Z325864) A	
CALEDON TOWN (CHINGU HS E 05 023 W	17 596008 4849837	1961/1 2 1307	30	FR 0028	28//2/ :	ST		4901475	4901475 ( )	BRWN LOAM CLAY 0012 GREY CLAY 0028 GREY CSND 0043 GREY CLAY 0044
CALEDON TOWN (CHINGU HS E 05 023 W	17 596253 4850244	2021/0 9 2576	6 5 5	FR 0048 UT 0086	- 3/48/4 /72:		0078 4 0082 4	7397683	7397683 (Z356718) A315308	LOAM 0001 BRWN CLAY SLTY HARD 0014 GREY CLAY SILT STNS 0052 GREY CLAY SLTY 0063 GREY QTZ SAND 0071 GREY GRVL SLTY WBRG 0086 BLUE SHLE 0089
CALEDON TOWN (CHINGU HS E 06 018 W	17 598753 4849141	2021/1 2 7230						7413056	7413056 (Z376777) A320701 P	



CALEDON TOWN (CHINGU HS E 06 019	17 598065 4849173 W	1979/0 9 3132	6	FR 0039	11/37/ 2/1:30	NU	4905631	4905631 ( ) A	BRWN CLAY SOFT 0015 BLUE CLAY STNS SOFT 0040 BLUE BLDR HARD 0049 BLUE SHLE SOFT 0088 BLUE SHLE HARD 0120 BLUE SHLE CLAY HARD 0129 BLUE SHLE HARD 0240
CALEDON TOWN (CHINGU HS E 06 019	17 598410 4848873 W	1971/0 9 1307	30	FR 0033	15/31/ 4/1:0	DO	4903693	4903693 ( )	BRWN LOAM 0010 GREY CLAY 0033
CALEDON TOWN (CHINGU HS E 06 019	17 598041 4849405 W	2021/1 2 7230					7413058 7413058	7413058 (Z376773) A320698 P	
CALEDON TOWN (CHINGU HS E 06 019	17 598584 4849301 W	2021/1 2 7230					7413057 7413057	7413057 (Z376775) A320686 P	
CALEDON TOWN (CHINGU HS E 06 019	17 598364 4849512 W	2021/1 2 7230					7413055 7413055	7413055 (Z376776) A320691 P	
CALEDON TOWN (CHINGU HS E 06 019	17 598133 4849508 W	2021/1 2 7230					7413054 7413054	7413054 (Z376774) A320683 P	

CALEDON TOWN (CHINGU HS E 06 019	17 598266 4849294 W	2021/1 2 7472	0.75				MO	0005 10	7408619	7408619 (URACXRS 9) A334266	GREY CLAY SILT PCKD 0015
CALEDON TOWN (CHINGU HS E 06 019	17 598404 4849104 W	2021/1 2 7472	0.75				MO	0005 10	7408618	7408618 (ASZSBKPS ) A334267	GREY CLAY SILT PCKD 0015
CALEDON TOWN (CHINGU HS E 06 019	17 598247 4849605 W	2021/1 2 7472	0.75				MO	0004 10	7408620	7408620 (2G5YM8P B) A334376	GREY CLAY SILT PCKD 0014
CALEDON TOWN (CHINGU HS E 06 020	17 597965 4849323 W	1980/0 9 2224	30	FR 0026	6/20/6 /0:30		DO		4905701	4905701 ( )	GREY SAND 0015 GREY CLAY STNS 0025 GREY SAND GRVL 0027
CALEDON TOWN (CHINGU HS E 06 020	17 596733 4848486 W	1949/0 7 4620	6 6	FR 0023			DO		4901542	4901542 ( )	LOAM CLAY 0002 CLAY STNS 0006 CLAY GRVL HPAN 0013 HPAN 0022 CLAY GRVL 0023 BLUE SHLE 0025
CALEDON TOWN (CHINGU HS E 06 021	17 597250 4850025 W	1966/0 8 1307	30	FR 0035	25//75 /:		ST DO		4901544	4901544 ( )	BRWN LOAM CLAY 0012 GREY CLAY 0033 GRVL 0035

## **Appendix E9 – Pre-Dev Water Balance**

## Pre-Development Water Balance Entire Study Area

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
<b>Potential Evapotranspiration Calculation</b>	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
<b>Pervious Components</b>	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7
<b>Impervious Components</b>	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
<b>Existing Land Use (Pre-Development)</b>	Tree cover along valley slope	438709.5	0%	438709.49	0.00	0.60	0.40	171.3	114.2	0.0	75134.8	50089.9
	Meadow	492967.6	0%	492967.58	0.00	0.55	0.45	157.0	128.4	0.0	77391.6	63320.4
	Open Water	71419.9	100%	0.00	71419.94	0.75	0.25	214.1	71.4	698.2	0.0	49864.7
	Marsh Wetland	109907.6	0%	109907.58	0.00	0.75	0.25	214.1	71.4	0.0	23528.9	7843.0
	Tree cover on tablelands	305974.6	0%	305974.58	0.00	0.60	0.40	171.3	114.2	0.0	52402.2	34934.8
	Agriculture	3344099.3	0%	3344099.30	0.00	0.55	0.45	157.0	128.4	0.0	524994.3	429540.8
	Golf Course	1067451.0	7%	992729.43	74721.57	0.50	0.50	142.7	142.7	698.2	141681.7	193851.5
	Buildings/Residential	386245.8	64%	139048.47	247197.29	0.55	0.45	157.0	128.4	698.2	21829.4	190451.1
	School	130652.1	79%	27436.94	103215.16	0.55	0.45	157.0	128.4	698.2	4307.4	75588.0
	Swamp Wetland	62100.3	0%	62100.30	0.00	0.80	0.20	228.4	57.1	0.0	14180.7	3545.2
<b>TOTAL</b>	<b>6,409,528</b>	<b>8%</b>	<b>5,912,974</b>	<b>496,554</b>	<b>0.56</b>	<b>0.44</b>	<b>159</b>	<b>127</b>	<b>180</b>	<b>935,451</b>	<b>1,099,029</b>	

**Notes**

1. Both potential infiltration and surface water runoff are independent of temperature
2. Assumption is in January maximum soil moisture storage value is present (75mm)
3. Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
4. Average Temp. and Precip. taken from Environment Canada station



Pre-Development Water Balance  
 Property 1

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Potential Evapotranspiration Calculation	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
Pervious Components	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7
Impervious Components	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
Existing Land Use (Pre-Development)	Tree cover along valley slope	16747.7	0%	16747.68	0.00	0.60	0.40	171.3	114.2	0.0	2868.3	1912.2
	Meadow	91093.7	0%	91093.66	0.00	0.55	0.45	157.0	128.4	0.0	14300.9	11700.7
	Open Water	39604.6	100%	0.00	39604.62	0.75	0.25	214.1	71.4	698.2	0.0	27651.5
	Marsh Wetland	1024.1	0%	1024.10	0.00	0.75	0.25	214.1	71.4	0.0	219.2	73.1
	Tree cover on tablelands	39962.5	0%	39962.49	0.00	0.60	0.40	171.3	114.2	0.0	6844.1	4562.7
	Agriculture	222.7	0%	222.69	0.00	0.55	0.45	157.0	128.4	0.0	35.0	28.6
	Golf Course	542334.2	7%	504370.78	37963.39	0.50	0.50	142.7	142.7	698.2	71983.4	98489.1
	Buildings/Residential	14701.1	64%	5292.39	9408.70	0.55	0.45	157.0	128.4	698.2	830.9	7248.9
	Swamp Wetland	3315.6	0%	3315.60	0.00	0.80	0.20	228.4	57.1	0.0	757.1	189.3
TOTAL	749,006	12%	662,029	86,977	0.53	0.47	151	134	556	97,839	151,856	

Notes

- Both potential infiltration and surface water runoff are independent of temperature
- Assumption is in January maximum soil moisture storage value is present (75mm)
- Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
- Average Temp. and Precip. taken from Environment Canada station

## Pre-Development Water Balance Property 2

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
<b>Potential Evapotranspiration Calculation</b>	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
<b>Pervious Components</b>	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7	285.4
<b>Impervious Components</b>	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
<b>Existing Land Use (Pre-Development)</b>	Tree cover along valley slope	100952.2	0%	100952.21	0.00	0.60	0.40	171.3	114.2	0.0	17289.4	11526.3
	Meadow	6622.4	0%	6622.40	0.00	0.55	0.45	157.0	128.4	0.0	1039.7	850.6
	Marsh Wetland	3387.1	0%	3387.06	0.00	0.75	0.25	214.1	71.4	0.0	725.1	241.7
	Tree cover on tablelands	29542.5	0%	29542.53	0.00	0.60	0.40	171.3	114.2	0.0	5059.5	3373.0
	Agriculture	259848.6	0%	259848.57	0.00	0.55	0.45	157.0	128.4	0.0	40793.9	33376.9
	Golf Course	50.1	7%	46.59	3.51	0.50	0.50	142.7	142.7	698.2	6.6	9.1
	Buildings/Residential	473.7	64%	170.54	303.18	0.55	0.45	157.0	128.4	698.2	26.8	233.6
	<b>TOTAL</b>	<b>400,877</b>	<b>0%</b>	<b>400,570</b>	<b>307</b>	<b>0.57</b>	<b>0.43</b>	<b>162</b>	<b>123</b>	<b>1</b>	<b>64,941</b>	<b>49,611</b>

- Notes**
1. Both potential infiltration and surface water runoff are independent of temperature
  2. Assumption is in January maximum soil moisture storage value is present (75mm)
  3. Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
  4. Average Temp. and Precip. taken from Environment Canada station

## Pre-Development Water Balance Property 3

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
<b>Potential Evapotranspiration Calculation</b>	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
<b>Pervious Components</b>	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7	285.4
<b>Impervious Components</b>	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
<b>Existing Land Use (Pre-Development)</b>	Meadow	920.4	0%	920.43	0.00	0.55	0.45	157.0	128.4	0.0	144.5	118.2
	Marsh Wetland	264.4	0%	264.44	0.00	0.75	0.25	214.1	71.4	0.0	56.6	18.9
	Tree cover on tablelands	4980.6	0%	4980.58	0.00	0.60	0.40	171.3	114.2	0.0	853.0	568.7
	Agriculture	334933.6	0%	334933.58	0.00	0.55	0.45	157.0	128.4	0.0	52581.6	43021.3
	Buildings/Residential	57708.8	64%	20775.18	36933.66	0.55	0.45	157.0	128.4	698.2	3261.5	28455.2
	<b>TOTAL</b>	<b>398,808</b>	<b>9%</b>	<b>361,874</b>	<b>36,934</b>	<b>0.55</b>	<b>0.45</b>	<b>157</b>	<b>128</b>	<b>101</b>	<b>56,897</b>	<b>72,182</b>

**Notes**

1. Both potential infiltration and surface water runoff are independent of temperature
2. Assumption is in January maximum soil moisture storage value is present (75mm)
3. Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
4. Average Temp. and Precip. taken from Environment Canada station

Pre-Development Water Balance  
 Property 4

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Potential Evapotranspiration Calculation	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
Pervious Components	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7
Impervious Components	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
Existing Land Use (Pre-Development)	Meadow	30572.9	0%	30572.90	0.00	0.55	0.45	157.0	128.4	0.0	4799.7	3927.0
	Marsh Wetland	4609.0	0%	4608.99	0.00	0.75	0.25	214.1	71.4	0.0	986.7	328.9
	Tree cover on tablelands	27396.9	0%	27396.86	0.00	0.60	0.40	171.3	114.2	0.0	4692.1	3128.0
	Agriculture	576665.9	0%	576665.94	0.00	0.55	0.45	157.0	128.4	0.0	90531.5	74071.2
	Buildings/Residential	43046.3	64%	15496.68	27549.65	0.55	0.45	157.0	128.4	698.2	2432.8	21225.4
	TOTAL	682,291	4%	654,741	27,550	0.55	0.45	158	127	44	103,443	102,681

Notes

- Both potential infiltration and surface water runoff are independent of temperature
- Assumption is in January maximum soil moisture storage value is present (75mm)
- Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
- Average Temp. and Precip. taken from Environment Canada station

Pre-Development Water Balance  
 Property 5

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Potential Evapotranspiration Calculation	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
Pervious Components	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7	285.4
Impervious Components	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
Existing Land Use (Pre-Development)	Tree cover along valley slope	9356.8	0%	9356.77	0.00	0.60	0.40	171.3	114.2	0.0	1602.5	1068.3
	Meadow	6437.1	0%	6437.07	0.00	0.55	0.45	157.0	128.4	0.0	1010.6	826.8
	Marsh Wetland	2071.2	0%	2071.18	0.00	0.75	0.25	214.1	71.4	0.0	443.4	147.8
	Tree cover on tablelands	16916.0	0%	16916.00	0.00	0.60	0.40	171.3	114.2	0.0	2897.1	1931.4
	Agriculture	369388.0	0%	369387.99	0.00	0.55	0.45	157.0	128.4	0.0	57990.7	47446.9
	Buildings/Residential	1218.0	64%	438.48	779.51	0.55	0.45	157.0	128.4	698.2	68.8	600.6
	TOTAL	405,387	0%	34,781	0	0.05	0.03	15	10	0	64,013	52,022

Notes

- Both potential infiltration and surface water runoff are independent of temperature
- Assumption is in January maximum soil moisture storage value is present (75mm)
- Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
- Average Temp. and Precip. taken from Environment Canada station



Pre-Development Water Balance  
 Property 6

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Potential Evapotranspiration Calculation	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
Pervious Components	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7
Impervious Components	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
Existing Land Use (Pre-Development)	Meadow	247.8	0%	247.78	0.00	0.55	0.45	157.0	128.4	0.0	38.9	31.8
	Marsh Wetland	1905.0	0%	1905.00	0.00	0.75	0.25	214.1	71.4	0.0	407.8	135.9
	Tree cover on tablelands	7922.1	0%	7922.14	0.00	0.60	0.40	171.3	114.2	0.0	1356.8	904.5
	Agriculture	149989.1	0%	149989.15	0.00	0.55	0.45	157.0	128.4	0.0	23547.0	19265.7
	Buildings/Residential	835.1	64%	300.63	534.45	0.55	0.45	157.0	128.4	698.2	47.2	411.8
	TOTAL	160,899	0%	160,365	534	0.55	0.45	158	127	4	25,398	20,750

**Notes**

- Both potential infiltration and surface water runoff are independent of temperature
- Assumption is in January maximum soil moisture storage value is present (75mm)
- Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
- Average Temp. and Precip. taken from Environment Canada station

Pre-Development Water Balance  
 Property 7

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Potential Evapotranspiration Calculation	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
Pervious Components	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7	285.4
Impervious Components	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
Existing Land Use (Pre-Development)	Meadow	2061.9	0%	2061.92	0.00	0.55	0.45	157.0	128.4	0.0	323.7	264.8
	Open Water	986.3	100%	0.00	986.29	0.75	0.25	214.1	71.4	698.2	0.0	688.6
	Marsh Wetland	12370.4	0%	12370.39	0.00	0.75	0.25	214.1	71.4	0.0	2648.2	882.7
	Tree cover on tablelands	18956.6	0%	18956.57	0.00	0.60	0.40	171.3	114.2	0.0	3246.6	2164.4
	Agriculture	64302.0	0%	64301.95	0.00	0.55	0.45	157.0	128.4	0.0	10094.8	8259.4
	Swamp Wetland	738.4	0%	738.41	0.00	0.80	0.20	228.4	57.1	0.0	168.6	42.2
	TOTAL	99,416	1%	33,389	986	0.23	0.12	65	34	7	16,482	12,302

Notes

- Both potential infiltration and surface water runoff are independent of temperature
- Assumption is in January maximum soil moisture storage value is present (75mm)
- Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
- Average Temp. and Precip. taken from Environment Canada station

Pre-Development Water Balance  
 Property 8

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Potential Evapotranspiration Calculation	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
Pervious Components	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7	285.4
Impervious Components	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
Existing Land Use (Pre-Development)	Meadow	4602.1	0%	4602.05	0.00	0.55	0.45	157.0	128.4	0.0	722.5	591.1
	Open Water	630.5	100%	0.00	630.54	0.75	0.25	214.1	71.4	698.2	0.0	440.2
	Marsh Wetland	11473.0	0%	11473.01	0.00	0.75	0.25	214.1	71.4	0.0	2456.1	818.7
	Tree cover on tablelands	23981.0	0%	23981.01	0.00	0.60	0.40	171.3	114.2	0.0	4107.1	2738.0
	Agriculture	159039.7	0%	159039.70	0.00	0.55	0.45	157.0	128.4	0.0	24967.8	20428.2
	TOTAL	199,726	0%	40,056	631	0.13	0.07	37	21	2	32,254	25,016

Notes

- Both potential infiltration and surface water runoff are independent of temperature
- Assumption is in January maximum soil moisture storage value is present (75mm)
- Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2002
- Average Temp. and Precip. taken from Environment Canada station

Pre-Development Water Balance  
 Property 9

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Potential Evapotranspiration Calculation	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
Pervious Components	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7	285.4
Impervious Components	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
Existing Land Use (Pre-Development)	Tree cover along valley slope	29314.1	0%	29314.09	0.00	0.60	0.40	171.3	114.2	0.0	5020.4	3346.9
	Meadow	44148.4	0%	44148.41	0.00	0.55	0.45	157.0	128.4	0.0	6930.9	5670.7
	Open Water	13552.5	100%	0.00	13552.49	0.75	0.25	214.1	71.4	0.0	0.0	0.0
	Marsh Wetland	30162.6	0%	30162.63	0.00	0.75	0.25	214.1	71.4	0.0	6457.2	2152.4
	Tree cover on tablelands	59605.3	0%	59605.28	0.00	0.60	0.40	171.3	114.2	0.0	10208.2	6805.5
	Golf Course	512906.4	7%	477002.95	35903.45	0.50	0.50	142.7	142.7	0.0	68077.5	68077.5
	Swamp Wetland	13696.5	0%	13696.51	0.00	0.80	0.20	228.4	57.1	0.0	3127.6	781.9
	TOTAL	703,386	7%	653,930	49,456	0.54	0.46	153	132	0	99,822	86,835

- Notes**
- Both potential infiltration and surface water runoff are independent of temperature
  - Assumption is in January maximum soil moisture storage value is present (75mm)
  - Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
  - Average Temp. and Precip. taken from Environment Canada station

Pre-Development Water Balance  
 Property 10

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Potential Evapotranspiration Calculation	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
Pervious Components	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7	285.4
Impervious Components	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
Existing Land Use (Pre-Development)	Tree cover along valley slope	9551.3	0%	9551.35	0.00	0.60	0.40	171.3	114.2	0.0	1635.8	1090.5
	Meadow	41727.8	0%	41727.76	0.00	0.55	0.45	157.0	128.4	0.0	6550.9	5359.8
	Marsh Wetland	3965.2	0%	3965.20	0.00	0.75	0.25	214.1	71.4	0.0	848.9	283.0
	Tree cover on tablelands	7953.5	0%	7953.53	0.00	0.60	0.40	171.3	114.2	0.0	1362.1	908.1
	Agriculture	143705.9	0%	143705.90	0.00	0.55	0.45	157.0	128.4	0.0	22560.6	18458.6
	TOTAL	206,904	0%	206,904	0	0.56	0.44	159	126	0	32,958	26,100

Notes

- Both potential infiltration and surface water runoff are independent of temperature
- Assumption is in January maximum soil moisture storage value is present (75mm)
- Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
- Average Temp. and Precip. taken from Environment Canada station



Pre-Development Water Balance  
 Property 11

MONTHLY AND YEARLY WATER BALANCE COMPONENTS (PRE-DEVELOPMENT CONDITION)														
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Potential Evapotranspiration Calculation	Average Temperature: T (°C)	-7.0	-5.9	-1.4	6.1	12.4	17.3	19.9	19.1	14.3	8.1	2.1	-3.1	6.8
	Heat Index: $i=(T/5)^{1.514}$	0.00	0.00	0.00	1.35	3.96	6.55	8.10	7.61	4.91	2.08	0.27	0.00	34.8
	Unadjusted Daily Potential Evapotranspiration: U (mm)	0.0	0.0	0.0	28.9	60.8	86.3	100.0	95.8	70.7	38.9	9.4	0.0	490.8
	Adjusting Factor for U (Latitude 44 degrees N)	0.81	0.81	1.02	1.13	1.27	1.28	1.30	1.20	1.04	0.94	0.80	0.76	-
	Adjusted Potential Evapotranspiration - PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
Pervious Components	Precipitation: P (mm)	60.4	50.2	50.3	67	76.1	75.5	81.8	77.4	75	68.3	81.7	57.7	821.4
	Adjusted Potential Evapotranspiration: PET (mm)	0.0	0.0	0.0	32.6	77.3	110.5	130.0	114.9	73.5	36.5	7.5	0.0	582.9
	P - PET	60.4	50.2	50.3	34.4	-1.2	-35.0	-48.2	-37.5	1.5	31.8	74.2	57.7	238.5
	Change in Soil Moisture Storage (mm)	0.0	0.0	0.0	0.0	-1.2	-35.0	-48.2	-37.5	1.5	31.8	0.0	0.0	-
	Water Holding Capacity (max. mm)	75.0	75.0	75.0	75.0	73.8	38.9	0.0	0.0	1.5	33.3	75.0	75.0	-
	Water Surplus Available for Infiltration or Runoff	60.4	50.2	50.3	34.4	0.0	0.0	0.0	0.0	0.0	0.0	32.4	57.7	285.4
Impervious Components	Precipitation: P (mm)	-												821.4
	Potential Evaporation: PE (mm), Assume 15%	-												123.2
	Potential Surface Water Runoff: P - PE (mm)	-												698.2

PRE-DEVELOPMENT WATER BALANCE												
		Total Land Area (m <sup>2</sup> )	Impervious Factor	Pervious Area (m <sup>2</sup> )	Impervious Area (m <sup>2</sup> )	Infiltration Factor	Runoff Factor	Infiltration From Pervious Area (mm/annum)	Runoff From Pervious Area (mm/annum)	Runoff from Impervious Area (mm/annum)	Total Infiltration (m <sup>3</sup> /annum)	Total Runoff (m <sup>3</sup> /annum)
Existing Land Use (Pre-Development)	Tree cover along valley slope	20362.0	0%	20361.98	0.00	0.60	0.40	171.3	114.2	0.0	3487.3	2324.8
	Meadow	7313.6	0%	7313.61	0.00	0.55	0.45	157.0	128.4	0.0	1148.2	939.4
	Open Water	975.5	100%	0.00	975.50	0.75	0.25	214.1	71.4	0.0	0.0	0.0
	Marsh Wetland	5331.1	0%	5331.12	0.00	0.75	0.25	214.1	71.4	0.0	1141.3	380.4
	Tree cover on tablelands	4284.6	0%	4284.63	0.00	0.60	0.40	171.3	114.2	0.0	733.8	489.2
	Agriculture	316209.8	0%	316209.83	0.00	0.55	0.45	157.0	128.4	0.0	49642.2	40616.3
	Buildings/Residential	21594.8	64%	7774.12	13820.67	0.55	0.45	157.0	128.4	0.0	1220.5	998.6
	Swamp Wetland	17650.8	0%	17650.80	0.00	0.80	0.20	228.4	57.1	0.0	4030.6	1007.6
	TOTAL	393,722	4%	378,926	14,796	0.57	0.43	162.0	123.4	0	61,404	46,756

- Notes**
- Both potential infiltration and surface water runoff are independent of temperature
  - Assumption is in January maximum soil moisture storage value is present (75mm)
  - Water Holding Capacity & Infiltration Factors taken from Table 3.1 of MOE SWMPDM, 2003
  - Average Temp. and Precip. taken from Environment Canada station

## **Appendix E10 – Preliminary Slope Stability Study – Entire Local SWS Area (GEI 2024)**



June 28, 2024

**Mayfield Tullamore Landowner Group Inc.**

c/o Development Collective

**RE: Preliminary Slope Stability Study**

**Mayfield Tullamore Secondary Plan – Local Subwatershed Study**

**Caledon, Ontario**

**Project No. 2400278 – Revision 1**

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GEI Consultants Canada Ltd. (GEI) was retained by Mayfield Tullamore Landowner Group Inc. (the Client) to complete a preliminary slope stability study in support of the Mayfield Tullamore Secondary Plan Local Subwatershed Study to aid with establishing developable limits/setbacks for the project.

Revision 1 of the report includes revised linework for the Top of Bank (TOB) as staked at the Study Area with Toronto and Region Conservation Authority (TRCA), and the long-term setbacks associated with the new staked Top of Bank Locations. Furthermore, the Mayfield Golf Course and Tullamore Residential properties are no longer included in this assessment, as the slope stability study for those properties is being completed by others. However, the southwestern corner of the Mayfield Golf Course property (on the southern side of the watercourse) is still included in Revision 1 of the report.

## **1. INTRODUCTION & SCOPE OF WORK**

The Study Area is approximately 2 km east to west by 3 km north to south, and is bounded by Old School Road, Torbram Road, Mayfield Road, to about 680 m west of Bramalea Road, in Caledon, Ontario. A site location and context plan is provided as Figure 1. The participating lands within the Study Area consist mainly of farmland and two active golf courses.

The Study Area is within the West Humber River Watershed. Several watercourses flow through the Study Area, and typically converge near the middle of the Study Area. Two of the larger watercourses are within the Greenbelt Plan Area. Online Regulation Mapping from TRCA shows that most of the watercourses are Regulated Areas, and therefore the methodology to determine long-term development setbacks must comply with TRCA policy guidelines (see Section 3 for more details). Many of the watercourses are within confined valley systems, which typically consist of a watercourse, floodplain, and slope.

GEI completed a preliminary slope stability study to determine the Long-Term Stable Top of Slope (LTSTOS) position following TRCA policy requirements for the various confined valley systems for participating lands within the Study Area. The preliminary assessment included visual slope inspections, review of aerial images and LiDAR data, and preliminary analysis for the LTSTOS

using conservative assumptions and limited data from preliminary boreholes completed at this time, given that a detailed subsurface investigation has not been fully completed at this time. Following the completion of the detailed subsurface investigation, additional stability analysis can be completed to potentially refine the setback locations.

## 2. VISUAL SLOPE INSPECTIONS

A visual inspection of the slopes and Study Area was conducted on March 27 and 28, 2024, by Mr. Frankie Huang, a Geotechnical Engineer in Training at GEI, and Mr. Ian Bowes, a Geotechnical Engineer at GEI. Some access points to the slopes were limited, so general information pertaining to the existing slope features, such as slope profile, drainage, vegetation cover, structures, erosion features and slope slide features were obtained where possible. A summary of the results of the visual inspection is presented below. The MNR Slope Inspection Forms and Slope Rating Forms are included in Enclosure 1, and photographs taken during the inspection are included in Enclosure 2. Photograph locations and the locations of the inspected slopes are shown on Figures 2A to 2E.

Mr. Russell Wiginton, P.Eng., a Senior Geotechnical Engineer with GEI, subsequently visited the Study Area on May 30, 31, and June 3, 2024, with TRCA for TOB staking. Additional details are included in the discussion below based on observations from the field staking site visit. It is noted that dense vegetation was present at the time of the site visit, so there could be some other features that exist on site that could not be observed.

The Study Area is located within the jurisdiction of TRCA in the West Humber River Watershed. The main watercourse is a large tributary of the West Humber River that generally flows from the west to the east through the Study Area. Several other tributaries flow through some of the properties and converge with the main tributary, before flowing off site.

### **Anatolia Property**

There is a TRCA mapped and regulated watercourse within the property flowing generally northwest to southeast (Figure 2A). In general, the watercourse consists of a series of ponds creating by damming the watercourse and allowing flow via culverts beneath what appeared to be earthen embankments at various locations on the south ends of the ponds. The general topography of the tableland is flat or slopes gently towards the water features. Some locations on the golf course appear to have been graded or filled to accommodate tee blocks. Certain parts of the system are confined with valley slopes, whereas most locations through the Anatolia property are considered unconfined. Where confined, the valley slopes have an estimated inclination of about 3 horizontal to 1 vertical (3H:1V) to 2H:1V, with some local steeper areas. The ponds are typically at the base of the slope.

North of the club house at “Anatolia Slope 4”, there is a berm with a height of about 8 to 10 m with inclinations steeper than 2H:1V. It appears that this berm is holding water within the large pond

that extends to the northwest into the golf course. The condition of the berm was not assessed under this scope of work.

At “Anatolia Slope 4” on Figure 2A, part of the slope at the eastern extent of the property (at Cross-Section D4), may have been created as part of the Bramalea Road cut into the valley system.

At “Anatolia Slope 5” on Figure 2A, there is a confined valley system with a watercourse that appears to originate from culverts that outlet at the bottom of the valley. The watercourse converges with the main West Humber River tributary to the south. The valley transitions into an unconfined system further north without a TOB.

No signs of concentrated runoff down any of the slope faces were observed, and general sheet drainage is expected.

Parts of the slope and floodplain areas are well vegetated with grasses, shrubs, and small to large trees standing vertically. No signs of recent or historic slope instability were observed within the valley. Most of the slope faces at the site consist of well vegetated land with grass and some trees. The top of the slopes and tableland are part of the golf course. Direct observation of the slope toe was not possible in every location due to vegetation cover and difficult access.

The MNR Slope Rating Forms for each slope area within the property obtained a rating value ranging from 24 to 48, which indicates a low to moderate potential for slope instability.

## **2.2. Broccolini Property Slopes 1 and 2**

The West Humber River tributary flows through the Broccolini property from west to east. The general topography of the tableland is flat or slopes gently towards the slope and valley system. The valley slopes have an inclination of about 3H:1V or flatter, with local areas near 2H:1V, and the floodplain between the slope and stream on the north side is about 50 m wide or greater on average. On the south side of the valley, the stream was at the toe of the slope in some locations. The slope locations are shown on Figure 2A.

In general, sheet drainage is expected across most of the slope. Two larger but relatively gradual gully features were observed on the southern side of the valley, near the western property line. It is expected that overland drainage from the farm fields runs off into these locations. No recent erosion within the gradual gullies were observed from the top of slope. Although not directly observed during the visual slope inspection, there is a known to be an erosion gully near Bramalea Road that may have formed from road runoff or discharging farm field tile drains.

Parts of the slope and the floodplain area are well vegetated with grasses, shrubs, and small to large trees standing vertically. No signs of recent or historic slope instability were observed within the valley. Most of the slope faces at the site consists of well vegetated land with grass and some trees. Some slight erosion was observed along the bank of the river.



The MNR Slope Rating Forms obtained a rating value of 31 and 33, which indicates a slight potential for slope instability.

### **2.3. Broccolini Property Slope 3**

Another tributary of the West Humber River flows generally west to east at the southwestern corner of the property. The general topography of the tableland is flat or slopes gently towards the slope and valley system. A section of the valley is a confined system with a defined slope, which transitions to an unconfined system to the south. The valley slope has an inclination of approximately 2H:1V with some local steeper sections. The slope location is shown on Figure 2E.

No signs of concentrated runoff down the slope face were observed and general sheet drainage is expected. The stream flows along the bottom of the valley (generally adjacent to the slope toe) and flows east.

Parts of the slope and the floodplain area are well vegetated with grasses, shrubs, and small to large trees standing vertically. No signs of recent or historic slope instability were observed within the valley. Most of the slope face on site consists of well vegetated land with grass and some trees. Some slight erosion was observed along the water's edge, which is adjacent to the slope toe.

The MNR Slope Rating Form obtained a rating value of 33, which indicates a slight potential for slope instability.

### **2.4. TACC Slope 1**

There is a TRCA mapped and regulated watercourse within the property flowing generally north to south. The northernmost part of the watercourse is piped and buried, daylighting to the south near the farm silos, and then meanders southward. The general topography of the tableland is flat or slopes gently towards the slope and valley system. The valley slopes have an inclination of about 3H:1V or flatter, and the floodplain between the slope and stream is about 20 m wide on average. In some local areas, the watercourse is within 15 m of the slope toe. A small section system on the west side at the north property line was unconfined. The slope location is shown on Figure 2B.

No signs of concentrated runoff down the slope face were observed and general sheet drainage is expected. No signs of recent or historic slope instability were observed within the valley. The top of the slopes and tableland consists mostly of farmland. Most of the slopes are well vegetated with trees and shrubs, and the floodplain is vegetated with grasses. The northern section of the valley with the piped watercourse is vegetated with grass lawn, some trees and shrubs, and some areas with taller grass.

The MNR Slope Rating Form obtained a rating value of 22, which indicates a low potential for slope instability.

## **2.5. TACC Slope 2**

There is a TRCA mapped and regulated watercourse within the property flowing generally northwest to southeast. The general topography of the tableland is flat or slopes gently towards the slope and valley system. Sections of the system are confined with slopes, but the system transitions to an unconfined system to the southeast. The valley slopes have an inclination of about 2H:1V with local steeper areas, and the stream is at the toe of the slope in some areas. The slope location is provided on Figure 2C.

No signs of concentrated runoff down the slope face were observed and general sheet drainage is expected. No signs of recent or historic slope instability were observed within the valley, but active erosion was observed at the slope toe where the watercourse is adjacent to the slope.

Parts of the slope and floodplain area are well vegetated with grasses, shrubs, and some small to large trees standing vertically. Most of the slope face at the site consists of well vegetated land with grass and trees. The top of the slopes and tableland consists of farmland.

The MNR Slope Rating Form obtained a rating value of 39, which indicates a moderate potential for slope instability.

## **2.6. DG Group (Sentinel Holdings) Property 1 Slope 1**

A TRCA mapped and regulated watercourse is within the property flowing generally northwest to southeast. The general topography of the tableland is flat or slopes gently towards the slope and valley system. Sections of the system are confined with slopes, but the system transitions to an unconfined system through most of the property. The valley slopes have an inclination of about 2H:1V with local steeper areas, and the stream is at the toe of the slope in some areas. The slope location is depicted on Figure 2C.

No signs of concentrated runoff down the slope faces were observed and general sheet drainage is expected. No signs of recent or historic slope instability were observed within the valley, but active erosion was observed at the slope toe where the watercourse is adjacent to the slope.

Parts of the slope and the floodplain area are well vegetated with grasses, shrubs, and small to large trees standing vertically. Most of the slope face at the site consists of well vegetated land with grass and some trees. The top of the slopes and tableland are forested areas or farmland.

The MNR Slope Rating Form obtained a rating value of 37, which indicates a moderate potential for slope instability.

### **2.7. DG Group Property 2 Slope 1**

The TRCA mapped and regulated watercourse within the property flows generally north to south. The general topography of the tableland is flat or slopes gently towards the slope and valley system. The valley slopes have an inclination of about 3H:1V or flatter, with areas as steep 2H:1V, and the floodplain between the slope and stream is typically about 30 m wide or greater. Most of the system through the property is a confined valley. The slope location is shown on Figure 2C.

No signs of concentrated runoff down the slope face were observed and general sheet drainage is expected. No signs of recent or historic slope instability were observed within the valley.

Parts of the slope and the floodplain area are well vegetated with grasses, shrubs, and small to large trees standing vertically. Most of the slope face at the site consists of well vegetated land with grass and some trees. The top of the slopes and tableland are farmland.

The MNR Slope Rating Form obtained a rating value of 17, which indicates a low potential for slope instability.

### **2.8. DG Group Property 3 Slope 1**

The main tributary of the West Humber River flows from northwest to southeast, in the northeastern corner of the property. The general topography of the tableland is flat or slopes gently towards the slope and valley system. The confined valley slopes have an inclination of about 3H:1V or flatter, with some areas as steep as 2H:1V, and the floodplain between the slope and stream is about 30 m wide or greater. The location of the slope is provided on Figure 2D.

General sheet drainage is expected across most of the slope. In one location, a gully was observed at the top of the slope, extending to the floodplain at the bottom of the slope. The gully likely formed from a farm field tile drain that outlets near the top of the slope. No signs of recent or historic slope instability were observed within the valley.

Parts of the slope and floodplain area are well vegetated with grasses, shrubs, and small to large trees standing vertically. Most of the slope faces on site consist of well vegetated land with grass and some trees. The top of the slopes and tableland are farmland. A residential dwelling is set back from the north slope on the tableland (not a participating property in the study).

The MNR Slope Rating Form obtained a rating value of 25, which indicates a slight potential for slope instability.

### **2.9. DG Group Property 4 Slope 1**

The confined valley system and slope are located in the northeastern corner of the property. The watercourse is the main West Humber River tributary and is downstream of the convergences of the other watercourses observed on the various Study Area properties. The slope is generally

steeper than 2H:1V and is near-vertical in locations of erosion and slope instability. The slope location is shown on Figure 2D.

There is a large outside bend in the watercourse which typically flows along the slope toe, resulting in active erosion of the bank and slope toe. A large rotational, bowl-shaped slope failure was observed extending from the top to bottom of the slope, expected to be the result of toe erosion and downcutting undermining the slope. A nearby erosion gully, discussed below, may also reduce stability in this area. The slope was well vegetated with large trees, but the slope failure area contained mostly grasses with some nearby falling trees.

Two distinct erosion gullies were observed on site, extending from the tableland to the bottom of the slope. The gullies appear to originate from tile drains actively discharging water. Both gullies extend back into the tableland and have over-steepened sidewalls with exposed roots and active erosion.

The MNR Slope Rating Form obtained a rating value of 49, which indicates a moderate potential for slope instability.

### 3. SLOPE STABILITY SETBACKS AND POLICY

The TRCA provides policy requirements and technical guidance for developments within slope and erosion hazard zones based on the following documents:

- *“The Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority,”* by TRCA, dated November 28, 2014.
- *“Technical Guide on River and Stream Systems: Erosion Hazard Limit,”* by the Ministry of Natural Resources (MNR), dated 2002.

The mapped watercourses are within TRCA Regulated Areas and are subject to these policy guidelines. Included in these policy guidelines are setbacks in which all new development must be set behind. The following allowances are applicable for the confined valley systems at the Study Area:

- Toe Erosion Allowance: This setback is an estimate of the distance the toe of slope will move over the next 100 years. This can be based on a site-specific fluvial geomorphology study, average annual recession rate based on 25 years of data or based on set values provided by the MNR depending on the soil type encountered. If the watercourse is greater than 15 m away from the slope toe, no toe erosion allowance is typically required.
- Stable Slope Allowance: This setback is associated with determining the inclination of the slope that achieves a minimum factor of safety of 1.5. In some cases, the existing slope inclination may meet this minimum requirement. In lieu of detailed geotechnical engineering analysis, a conservative estimate for the stable slope inclination of 3H:1V can typically be applied.

- Erosion Access Allowance: An additional 10 m setback (for development, new buildings) is applied to allow for emergency access, routine maintenance of the slope and potential erosion areas, and to create an additional buffer between the development and the potential erosion hazard.

The toe erosion allowance and stable slope allowance combine to form the Long-Term Stable Top of Slope (LTSTOS). When the LTSTOS is combined with the erosion access allowance, this total setback line is the Erosion Hazard Limit from which all new development or redevelopment must be set behind, per TRCA guidelines. The above setbacks are applicable to sites where there is a confined valley system. Figure 4 shows a typical LTSTOS model.

These policies are not applicable for unconfined systems, where the Erosion Hazard Limit is defined by the meander belt allowance or flooding hazard limit, plus an additional allowance (beyond the scope of work in this report).

## 4. PRELIMINARY SLOPE STABILITY ASSESSMENT

### 4.1. Subsurface Conditions

Existing geotechnical reports completed by others are available for 12282 and 12442 Bramalea Road. A series of boreholes were advanced and typically encountered a surficial layer of topsoil underlain by very stiff to hard clayey silt glacial till. Groundwater levels measured in monitoring wells installed in the boreholes ranged from 0.5 to 5.0 m below grade. Some of the monitoring wells remained dry.

An existing geotechnical report completed by others is also available for the Mayfield Golf Course. The boreholes encountered deposits of silty clay to sandy silt glacial till, with various other deposits of silty clay, silt, or sand. Bedrock of the Georgian Bay Formation was encountered at depth. Groundwater levels were measured at depths typically ranging from at grade to about 3.7 m below grade.

GEI previously advanced boreholes near the Study Area, and similarly encountered regional cohesive glacial till deposits.

GEI's 2024 subsurface investigation is nearing completion. Boreholes were advanced near the valley systems to determine soil and groundwater conditions in support of the slope stability study. Based on the preliminary results, the slopes primarily consist of very stiff to hard, clayey and sandy silt glacial till deposits. Some boreholes encountered loose to very dense sands, silts, and gravels at grade or underlying the upper glacial till deposit. Monitoring wells were installed within many of the boreholes. Groundwater levels ranged across the Study Area, with some wells remaining dry, to measuring groundwater at a depth of 1 m below grade below the tableland.



## 4.2. Topography, Slope Geometry and Top of Bank

The slope geometry for the analysis was determined by cutting cross sections through the various valley lands using a LiDAR DEM which included the following data sets downloaded online from Ontario GeoHub to create a topographic surface with 1 m contour spacing:

- “Lidar DTM Peel 2016 Package A (IMG)”
- “Lidar DTM GTA 2014 Package A (IMG)”

The LiDAR data and cross-section locations are shown on Figures 2A to 2E. The LiDAR dataset is from 2014 to 2016, suitable for the preliminary analysis. More recent topographic information (e.g. from within the last 3 years) may be required for more detailed analysis.

The cross-sections are included as Figures 3A to 3T (which include both sides of the valley where applicable). Most cross-sections were cut in locations representing the worst-case conditions, such as where the watercourse is close to the slope toe and/or where the slope is steeper. Other sections were cut to determine general slope conditions. The cross-section spacing was approximately every 100 to 300 m for the preliminary study. Additional cross-sections with closer spacing may be required for more detailed analysis, on a case-by-case basis.

Field staking for the TOB for most of the confined valley slopes occurred on site with TRCA on May 30, May 31, and June 3, 2024. GEI’s forthcoming technical memorandum, “*June Feature Staking Memo – Mayfield-Tullamore Landowner Group Properties, Caledon, Ontario,*” (Project No. 2400278) will contain detailed discussion on the field staking process and results.

The existing TOB location for the various confined valley systems that could not be staked were estimated by GEI based on the topographic contours, cross-sections, and site observations during the visual slope inspection. This methodology was discussed with TRCA on site.

## 4.3. Preliminary Analysis for Long-Term Stable Top of Slope

The existing boreholes from other consultants are localized in two parts of the Study Area and are not sufficient for detailed stability analysis at this time. GEI’s 2024 subsurface investigation is nearing completion. Revision 1 of this report is provided as an interim step to determine the updated LTSTOS position based on the staked TOB and preliminary borehole data from GEI’s subsurface investigation. Additional slope stability analysis can be completed once the 2024 subsurface investigation is finalized across the Study Area to determine existing slope stability conditions and to potentially refine the LTSTOS position. The preliminary analysis for the LTSTOS was completed using conservative assumptions and preliminary borehole data at this time.

### **Toe Erosion Allowance**

The toe erosion allowance is a horizontal distance typically measured out from the bankfull width of a watercourse, existing water level of the watercourse, or bottom of the watercourse channel as deemed appropriate based on the site-specific conditions. The toe erosion allowance applied is based on numerous considerations such as: proximity of the watercourse to the slope toe, the presence of existing erosion, average and peak velocity within the watercourse, susceptibility of the soils at the slope toe to erosion, extent of vegetation, fluvial geomorphological processes, etc. Due to the varied and complex nature of determining toe erosion, multiple simplified methods are available for determining this toe erosion allowance, including:

- Using a value of 15 m if no information is available;
- Use of an average annual recession rate based on a minimum of 25 years data, and extrapolated to a 100-year planning horizon;
- A fluvial geomorphological study based on a minimum of 25 years of record;
- Use of the table “*Determination of Toe Erosion Allowance*” provided within MNR technical guidelines (2002) as provided below.

GEI fluvial geomorphology staff recently completed preliminary meander belt delineation and an assessment of the toe erosion allowance for various reaches of most confined valley systems in the Study Area. The toe erosion allowance was determined to be 8 m for the watercourses across most of the Study Area, with a 10 m toe erosion allowance applicable to the valley system in the southeastern quadrant of the study area (i.e. DG4 Slope 1 and DG3 Slope 1 on Figure 2D). The long-term toe of slope position (incorporating the toe erosion allowance) was provided from the fluvial geomorphologist in AutoCAD and imported into the site plan as shown on Figures 2A to 2E as a purple line.

Some watercourse reaches were not included in the fluvial geomorphology assessment at this time. For these areas, a toe erosion allowance was selected per the MNR table below and using the preliminary borehole results from GEI’s ongoing subsurface investigation. These results can be assessed further as the borehole investigation and reporting progresses.

<b>Minimum Toe Erosion Allowance – River within 15 Metres of Slope Toe</b>				
<b>Native Soil Structure at Slope Toe</b>	<b>Evidence of Active Erosion or Bankfull Flow Velocity &gt; Competent Flow Velocity</b>	<b>No evidence of Active Erosion or Flow Velocity &lt;&lt; Competent Flow Velocity</b>		
		<b>Bankfull Width</b>		
		<b>&lt; 5 metres</b>	<b>5 to 30 metres</b>	<b>&gt; 30 metres</b>
Hard Rock	0 to 2 metres	0 metres	0 metres	1 metres
Soft Rock or Cobbles/Boulders	2 to 5 metres	0 metres	1 metres	3 metres

Minimum Toe Erosion Allowance – River within 15 Metres of Slope Toe				
Native Soil Structure at Slope Toe	Evidence of Active Erosion or Bankfull Flow Velocity > Competent Flow Velocity	No evidence of Active Erosion or Flow Velocity << Competent Flow Velocity		
		Bankfull Width		
		< 5 metres	5 to 30 metres	> 30 metres
Stiff to Hard Cohesive Soil, Coarse Granulars or Glacial Tills	5 to 8 metres	1 metres	2 metres	4 metres
Soft/Firm Cohesive Soil, Fine Granular or Fill	8 to 15 metres	1 to 2 metres	5 metres	7 metres

In some locations, the floodplain is wider than 15 m, and the toe erosion allowance does not impact the valley slope. The toe erosion setbacks and method of determination are summarized further in the *Long-Term Stable Top of Slope* section below.

### **Stable Slope Allowance**

MNR guidelines allow a factor of safety (FOS) between 1.3 to 1.5 for active land use (e.g. a habitable structure, commercial building, storage/warehousing, etc.) when determining the stable slope inclination. TRCA guidelines require a minimum FOS of 1.5. The table below is taken from the MNR provincial guideline.

Land Uses	Design Minimum Factor of Safety
<b>Passive:</b> no buildings near slope; farm field, bush, forest, timberland, woods, wasteland, badlands, tundra.	1.10
<b>Light:</b> no habitable structures near slope; recreational parks, golf courses, buried small utilities, tile beds, barns, garages, swimming pools, sheds, satellite dishes, dog houses.	1.20 to 1.30
<b>Active:</b> habitable or occupied structures near slope; residential, commercial, and industrial buildings, retaining walls, storage/warehousing of non-hazardous substances.	1.30 to 1.50
<b>Infrastructure and Public Use:</b> public use structures or buildings (i.e. hospitals, schools, stadiums), cemeteries, bridges, high voltage power transmission lines, towers, storage/warehousing of hazardous materials, waste management areas.	1.40 to 1.50

Based on these guidelines and TRCA guidelines, a minimum FOS of 1.5 is required to determine the stable slope inclination.

For this preliminary assessment, detailed stability analysis has not been completed. The soil conditions at the Study Area are known to predominantly consist of stiff to hard cohesive glacial till deposits, or typically compact to very dense cohesionless gravels, sands and silts. As such, a stable slope inclination of 3H:1V is applied across the Study Area to be conservative and is estimated to achieve an FOS of 1.5 or greater for these soil conditions.

The stable slope inclination can be refined through additional analysis after the subsurface investigation is finalized.

### **Long-Term Stable Top of Slope**

The LTSTOS combines the toe erosion allowance with the stable slope allowance. The LTSTOS position is shown on Figures 2A to 2E, on the cross-sections, and an LTSTOS model is shown on Figure 4. The LTSTOS position ranges from coinciding with the existing top of slope to being set back 23.8 m from the top of slope. The LTSTOS setback estimations are summarized below.

<b>Cross-Section</b>	<b>Side of Valley Slope on Cross-Section</b>	<b>Toe Erosion Allowance (m)</b>	<b>Estimated Stable Slope Inclination (H:V)</b>	<b>LTSTOS Setback from Top of Slope (m)<sup>3</sup></b>
A-A	East	15.0 <sup>2</sup>	3:1	6.6
B-B	West	4.0 <sup>2</sup>	3:1	7.4
	East	4.0 <sup>2</sup>	3:1	1.1
C-C	East	4.0 <sup>2</sup>	3:1	1.0
D1-D1	North (near the berm)	5.0 <sup>2</sup>	3:1	4.7
D2-D2	West (near the berm)	5.0 <sup>2</sup>	3:1	12.7
D3-D3	South / West	5.0 <sup>2</sup>	Existing slope is 3:1 or flatter	0
D4-D4	North	N/A (no watercourse)	3:1	2.3
E-E	South	See Note 1	Existing slope is 3:1 or flatter	0
	North	See Note 1	3:1	5.3
F-F	South	See Note 1	3:1	13.9
	North	See Note 1	3:1	0
G-G	South	See Note 1	3:1	5.1
	North	See Note 1	Existing slope is 3:1 or flatter	0
H-H	West	See Note 1	Existing slope is 3:1 or flatter	0

Cross-Section	Side of Valley Slope on Cross-Section	Toe Erosion Allowance (m)	Estimated Stable Slope Inclination (H:V)	LTSTOS Setback from Top of Slope (m) <sup>3</sup>
	East	See Note 1	Existing slope is 3:1 or flatter	0
I-I	West	See Note 1	Existing slope is 3:1 or flatter	0
	East	See Note 1	Existing slope is 3:1 or flatter	0
J-J	West	See Note 1	3:1	12.8
K-K	East	See Note 1	3:1	11.2
L-L	South	See Note 1	3:1	1.6
M-M	West	See Note 1	3:1	3.1
N-N	South Valley Slope	See Note 1	3:1	22.7
	Erosion Gully	5.0 <sup>2</sup>	3:1	8.9
O-O	South Valley Slope	See Note 1	3:1	19.0
	Erosion Gully	5.0 <sup>2</sup>	3:1	12.3
P-P	South	See Note 1	3:1	23.8
Q-Q	South	See Note 1	3:1	9.8
R-R	South	See Note 1	3:1	14.5
	North	See Note 1	Existing slope is 3:1 or flatter	0
S-S	East	See Note 1	3:1	14.9
T-T	West	See Note 1	3:1	12.9
	East	See Note 1	3:1	3.2

Notes:

1. Long-Term Stable Toe of Slope position provided on linework from GEI fluvial geomorphology team.
2. Estimated based on MNR toe erosion table.
3. Where setback is shown as 0 m, LTSTOS coincides with Top of Slope.

Per Note 2 above, the toe erosion allowance was determined using the MNR table and the preliminary GEI borehole findings where linework was not provided for the long-term stable toe of slope position from the fluvial geomorphology team. Once finalized, the borehole logs and locations will be included in a future report revision and submission. A summary is below for those locations:



- Section A – GEI Borehole 4D was advanced nearby and encountered loose earth fill or loose to very loose sandy silt at the slope toe elevation. Due to the width of the pond and potential for toe erosion near the culvert outlet, a toe erosion allowance of 15 m was selected.
- Section B – GEI Borehole 5 was advanced nearby and encountered hard clayey silt glacial till at the slope toe elevation. With a bankfull width of 30 m or more, but no active erosion visually observed, a toe erosion allowance of 4 m was selected.
- Section C – GEI Borehole 8 was advanced nearby and encountered hard clayey silt glacial till at the slope toe elevation. With a bankfull width of 30 m or more, but no active erosion visually observed, a toe erosion allowance of 4 m was selected.
- Sections D1 to D4 – GEI Boreholes 12 and 13 were advanced in the area and it is expected that either hard glacial till or loose to compact sands and silts will be encountered at the slope toe elevation. With a bankfull width between 5 to 30 m, a toe erosion allowance of 5 m was selected.
- Sections N and O – GEI Borehole 39 was advanced near the erosion gullies and encountered very stiff to hard glacial till. With active erosion but very stiff to hard till, a toe erosion allowance of 5 m was selected for the erosion gully setbacks.

In the locations of Sections N and O, which were cut through both the valley slope and erosion gully, the LTSTOS was established as the greater of the two setbacks determined on the cross-section.

### ***Erosion Hazard Limit and Total Slope Setbacks***

The TRCA policy guidelines require an additional setback of 10 m from the LTSTOS position for the Erosion Access Allowance. The Erosion Access Allowance is applied beyond the LTSTOS to allow for emergency access, routine maintenance of the slope and potential erosion areas, and to create an additional buffer between the development and the potential erosion hazard. This allowance forms the total setback distance related to slope and erosion hazards for new development. The 10 m Erosion Access Allowance is shown in plan view on Figures 2A to 2E, and the green dashed lines on the figures represent the development limit related to slope and erosion hazards. The development limit is also shown on the cross-sections.

It is noted again that the existing boreholes from other consultants are localized to two parts of the Study Area and are not sufficient for detailed stability analysis at this time. GEI's 2024 subsurface investigation is nearing completion. Revision 1 of this report is provided as an interim step to determine the updated LTSTOS position based on the TRCA-staked TOB and preliminary borehole data from GEI's subsurface investigation. Additional slope stability analysis can be completed in the future once the 2024 subsurface investigation is finalized across the Study Area to determine existing slope stability conditions and to potentially refine the LTSTOS position. The preliminary analysis for the LTSTOS was completed using conservative assumptions and preliminary borehole data within this Revision 1 report.

## 5. CLOSURE

We trust this information is sufficient for your present purposes. Should you have any questions concerning the above, or can be of any further assistance, please do not hesitate to contact the undersigned.

Yours truly,  
**GEI Consultants**



Frankie Huang., E.I.T  
Geotechnical Engineer in Training



Russell Wiginton, P.Eng.  
Senior Geotechnical Engineer



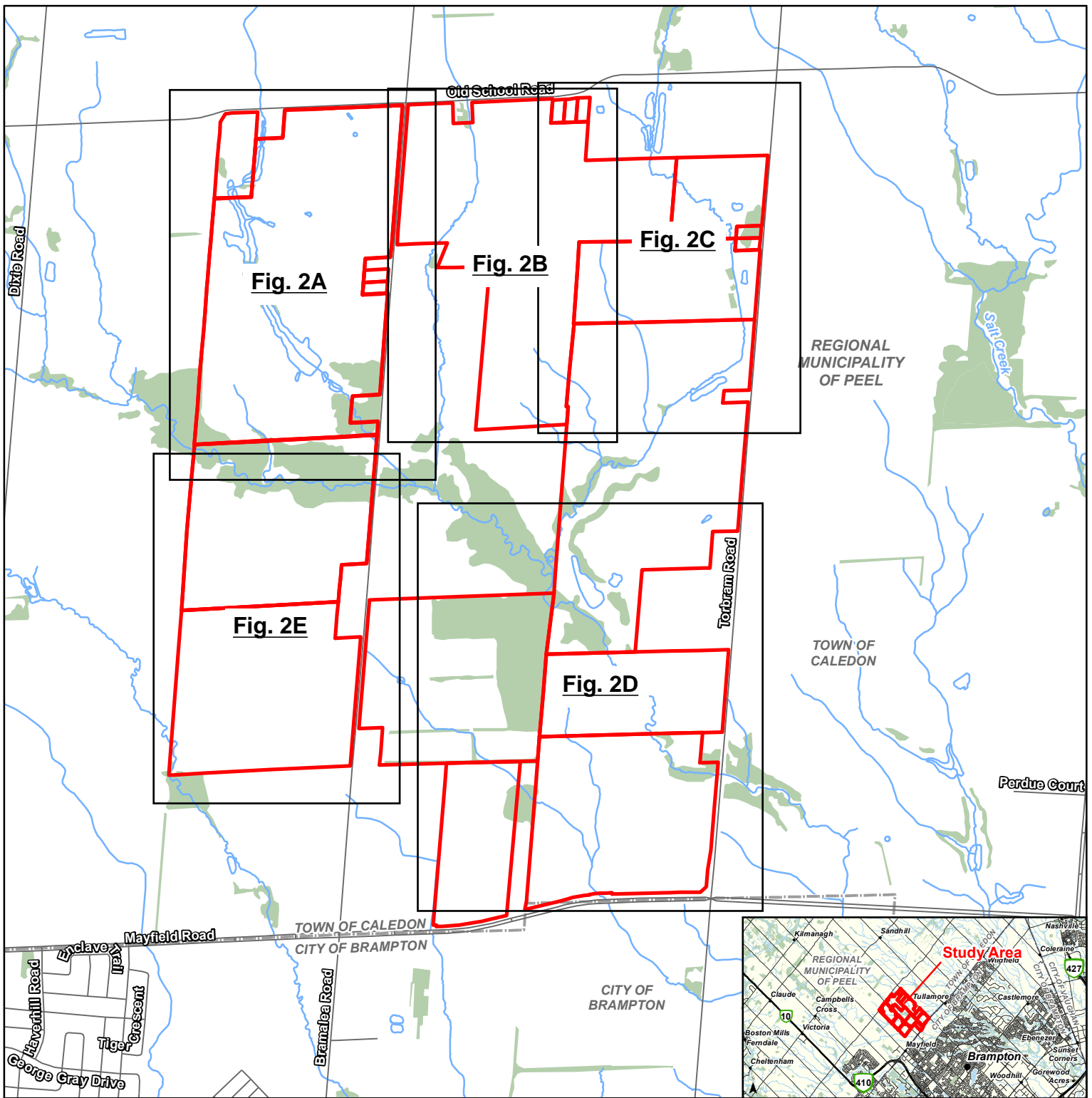
### **Figures**

Figure 1 – Site Location and Context Plan  
Figures 2A to 2E – Cross-Section, Photograph and LTSTOS Plans  
Figures 3A to 3T – Detailed Slope Cross-Sections  
Figure 4 – LTSTOS Model

### **Enclosures:**

Enclosure 1 – Slope Inspection and Rating Forms  
Enclosure 2 – Site and Slope Photographs

## FIGURES



Project 2400278

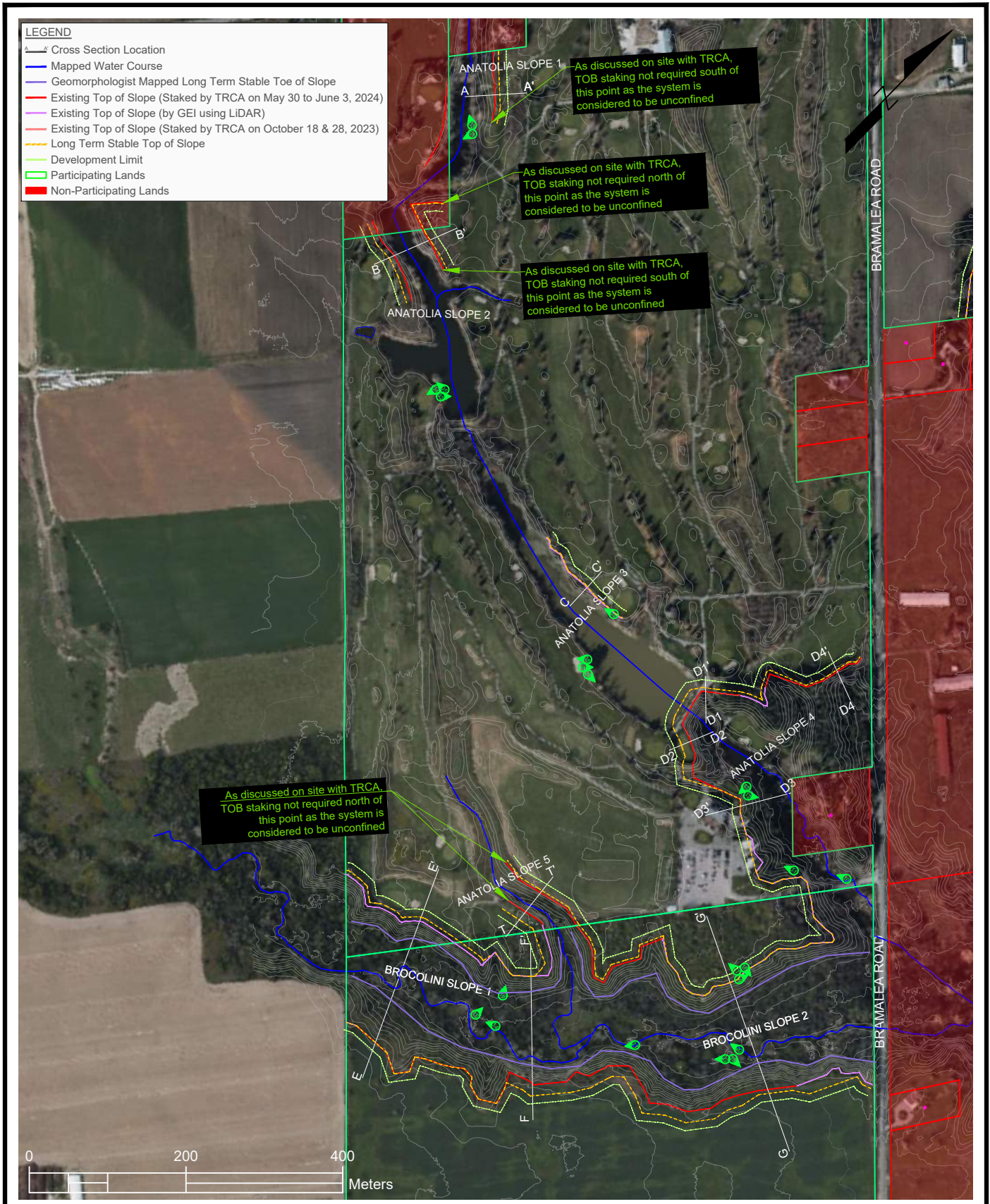
**NOTES:**  
 1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere.  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2024, © Town of Caledon, 2024.


- Legend**
- Study Area
  - Watercourse
  - Waterbody
  - Wooded Area

Mayfield Tullamore Landowner Group  
**Figure 1: Site Location and Context Plan**

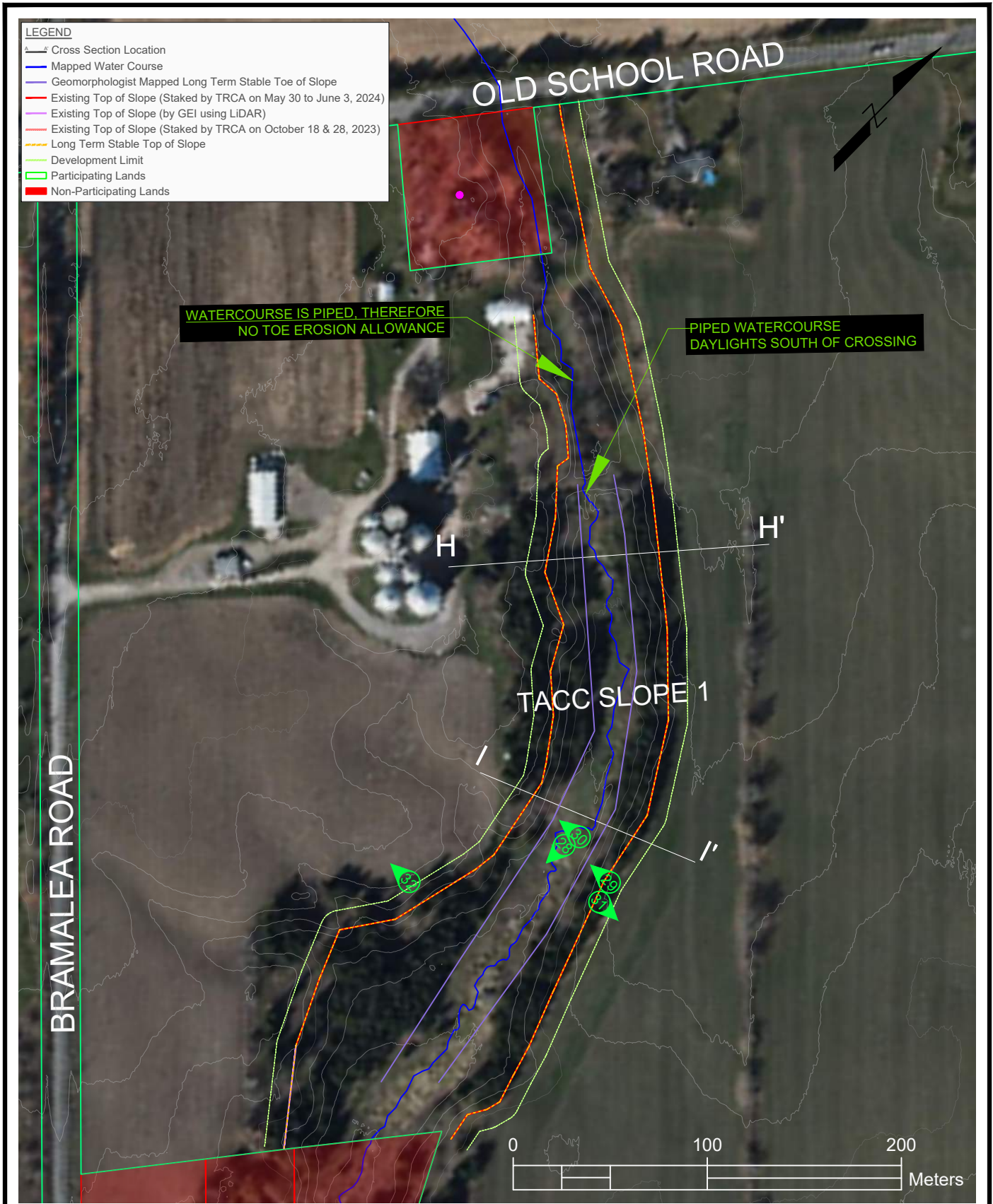






<p>Preliminary Slope Stability Assessment</p>		<p>CROSS-SECTION, PHOTOGRAPH &amp; LTSTOS LOCATION PLAN <i>Anatolia and Brocolini</i></p>
<p>Mayfield Tullamore Landowner Group Inc.</p>	<p>Project 2400278</p>	<p>June 2024 <span style="float: right;">Fig. 2A</span></p>





Preliminary Slope Stability Assessment

Mayfield Tullamore Landowner Group

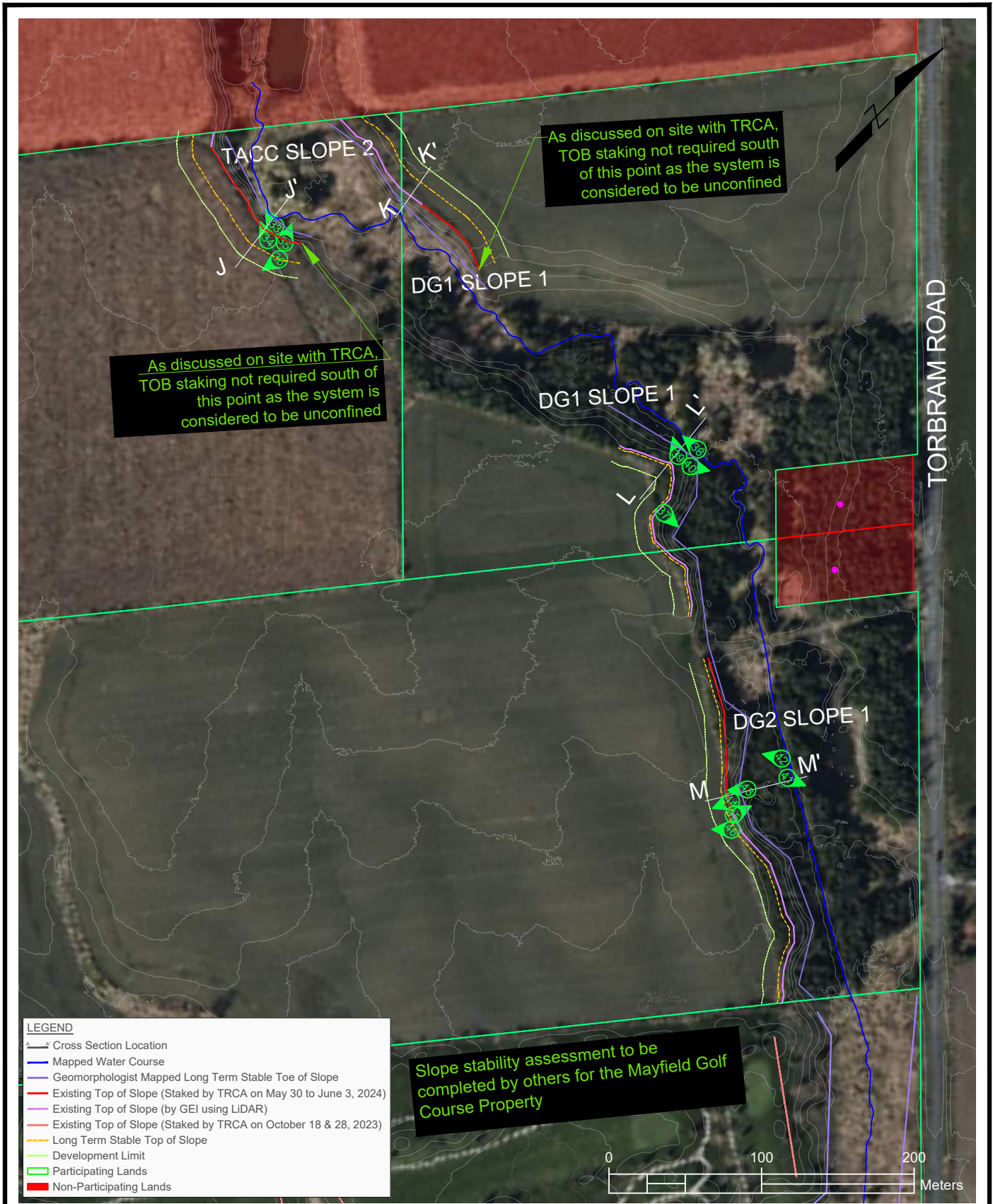
**GEI** Consultants

Project 2400278

CROSS-SECTION, PHOTOGRAPH & LTSTOS LOCATION PLAN  
TACC

June 2024

Fig. 2B



**LEGEND**

- Cross Section Location
- Mapped Water Course
- Geomorphologist Mapped Long Term Stable Toe of Slope
- Existing Top of Slope (Staked by TRCA on May 30 to June 3, 2024)
- Existing Top of Slope (by GEI using LiDAR)
- Existing Top of Slope (Staked by TRCA on October 18 & 28, 2023)
- Long Term Stable Top of Slope
- Development Limit
- Participating Lands
- Non-Participating Lands

Preliminary Slope Stability Assessment

Mayfield Tullamore Landowner Group



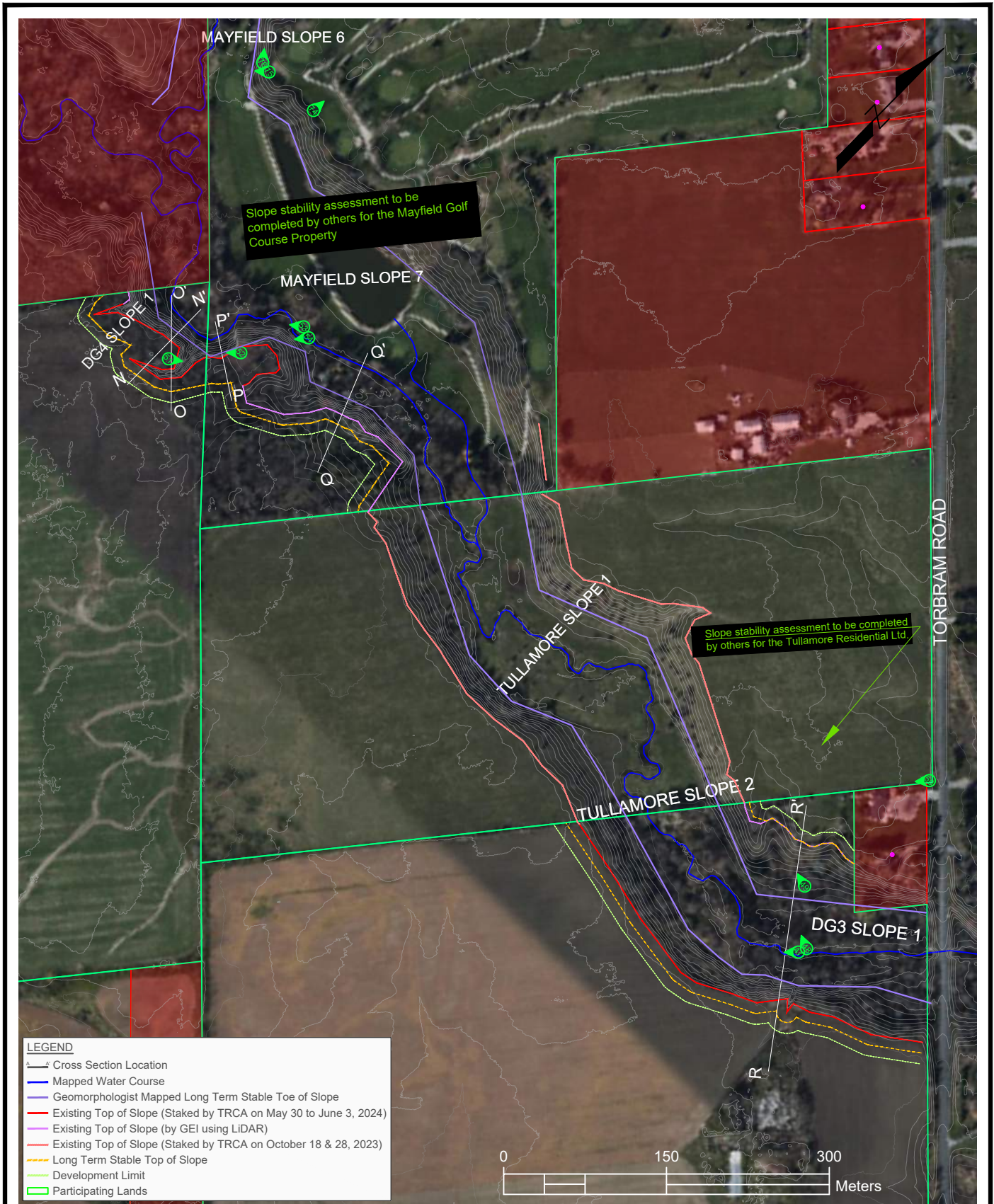
Project 2400278

CROSS-SECTION, PHOTOGRAPH &  
LTSTOS LOCATION PLAN  
*DG Group*

June 2024

Fig. 2C





Preliminary Slope Stability Assessment



CROSS-SECTION, PHOTOGRAPH &  
LTSTOS LOCATION PLAN  
DG Group, Mayfield Golf Course Inc.

Mayfield Tullamore Landowner Group

Project 2400278

June 2024

Fig. 2D





Preliminary Slope Stability Assessment

Mayfield Tullamore Landowner Group



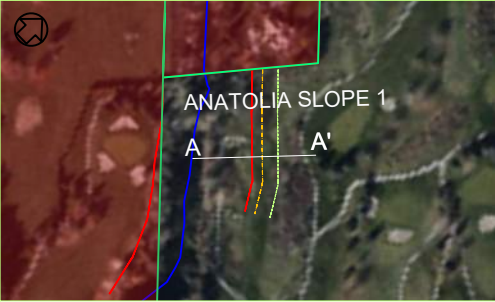
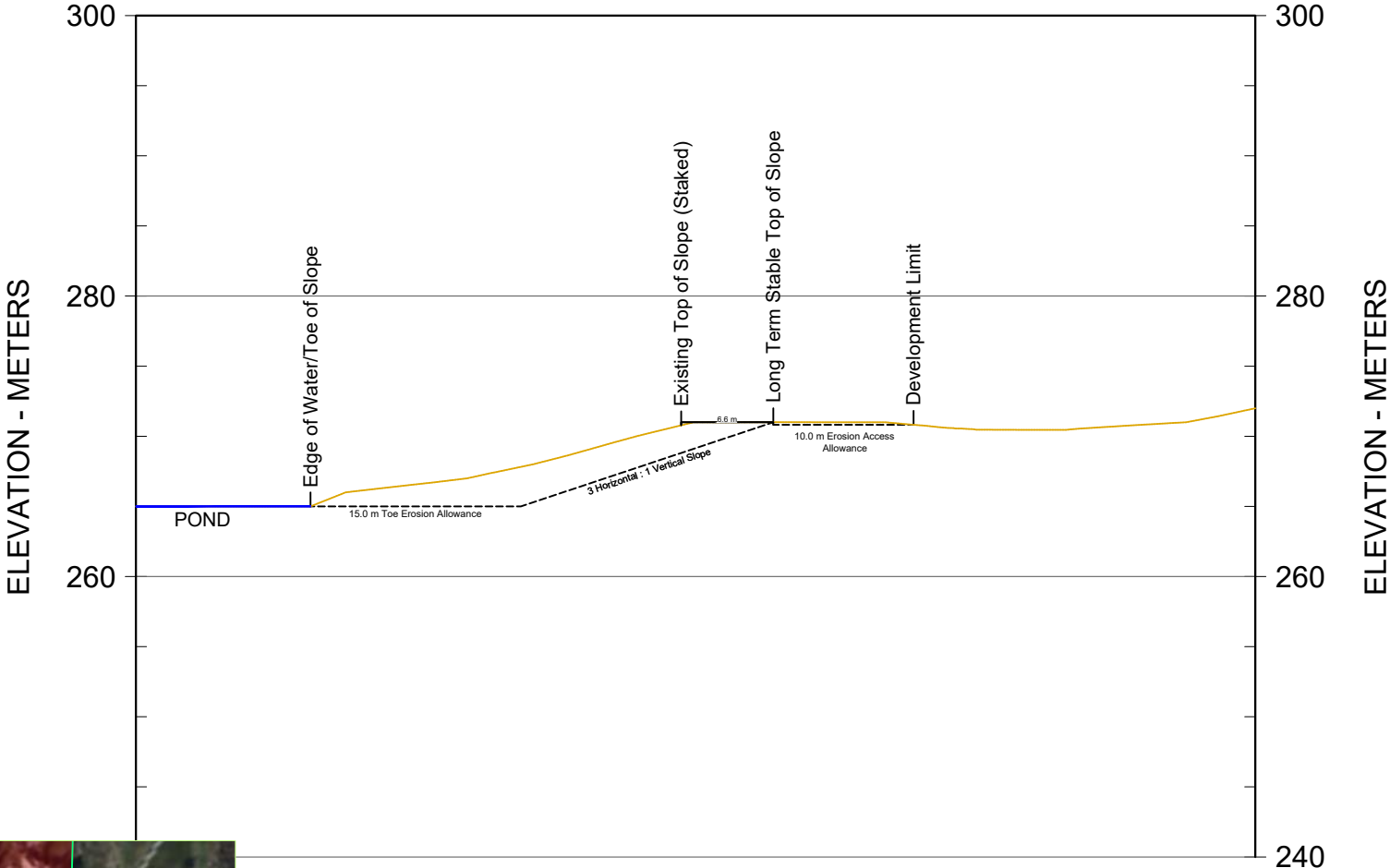
Project 2400278


CROSS-SECTION, PHOTOGRAPH & LTSTOS LOCATION PLAN  
Brocollini

June 2024

Fig. 2E

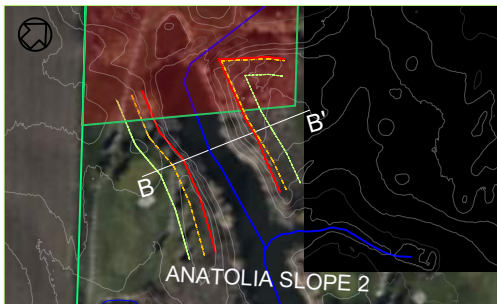
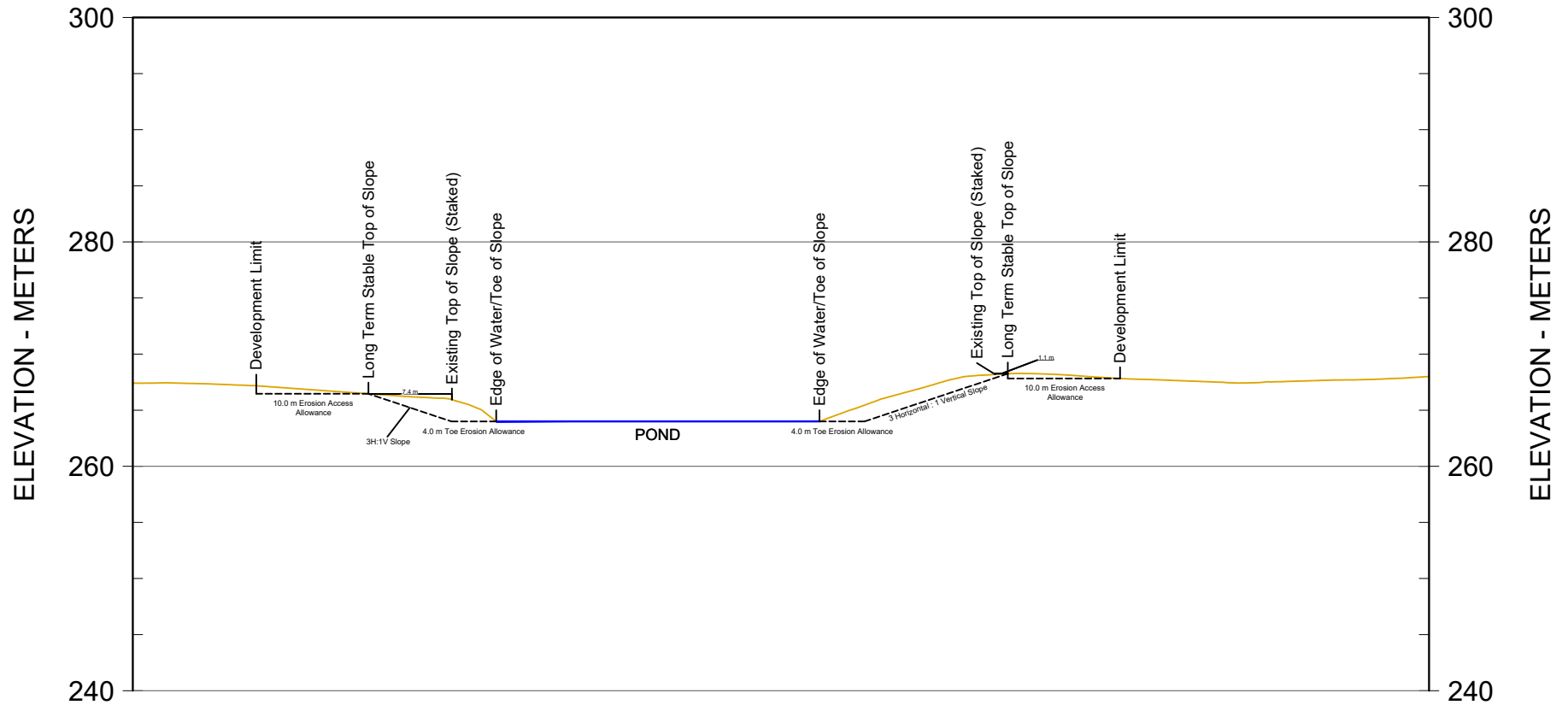
# CROSS SECTION A-A'




<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section A-A' (Anatolia Slope 1)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>	<p>Project 2400278</p>	<p>June 2024 <span style="float: right;">Fig. 3A</span></p>

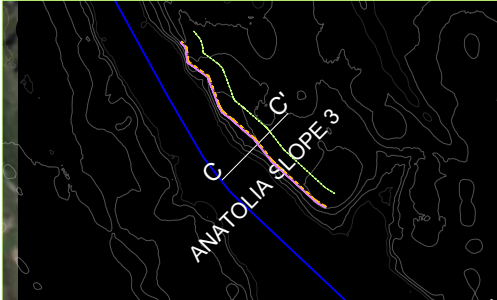
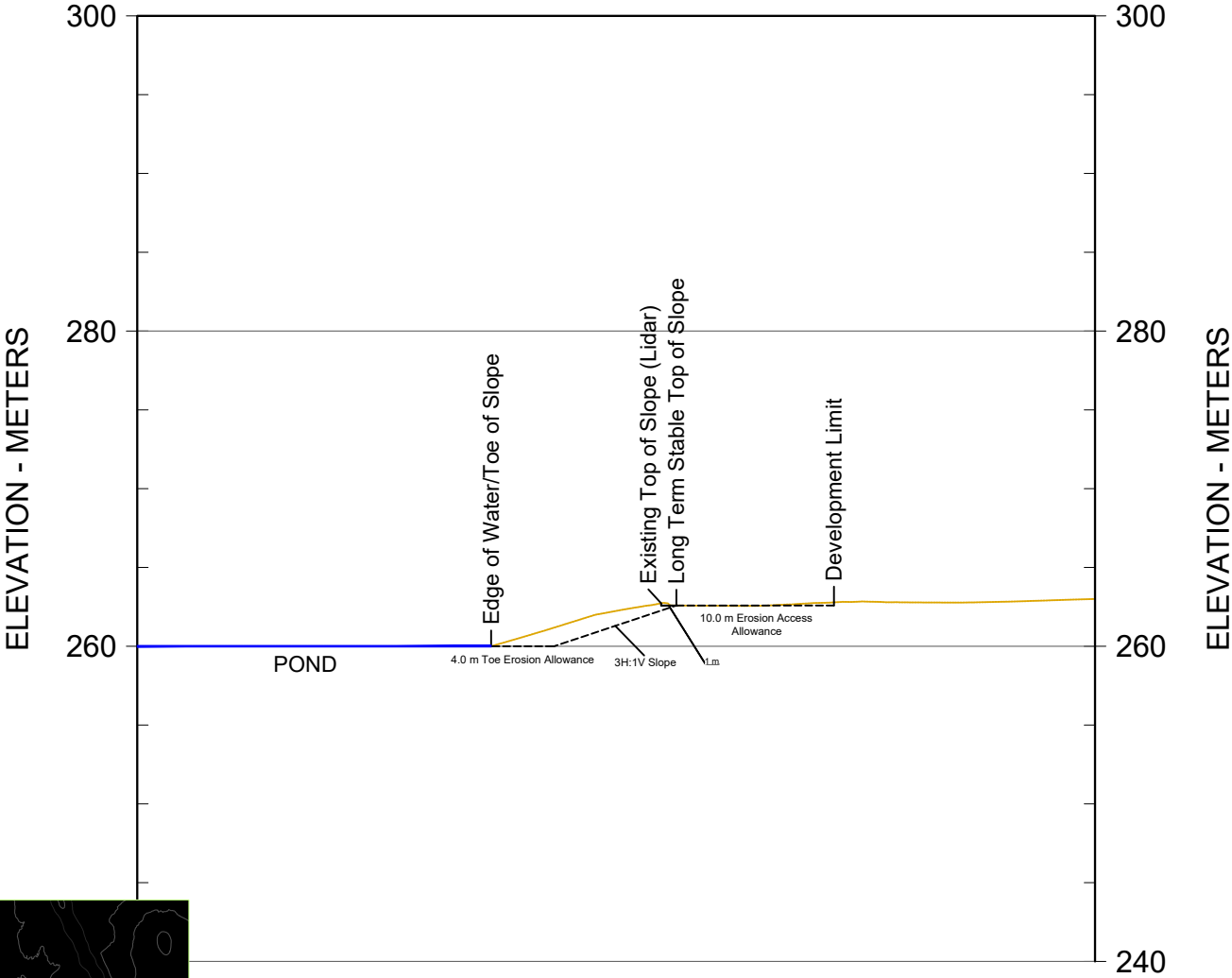


# CROSS SECTION B-B'



<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section B-B' (Anatolia Slope 2)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>	<p>Project 2400278</p>	<p>June 2024 <span style="float: right;">Fig. 3B</span></p>

# CROSS SECTION C-C'




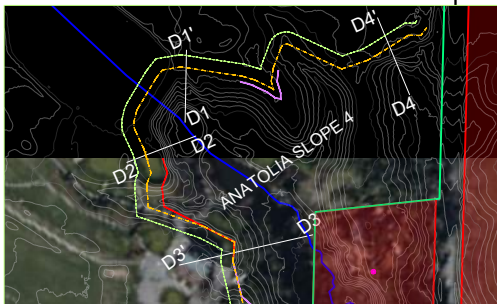
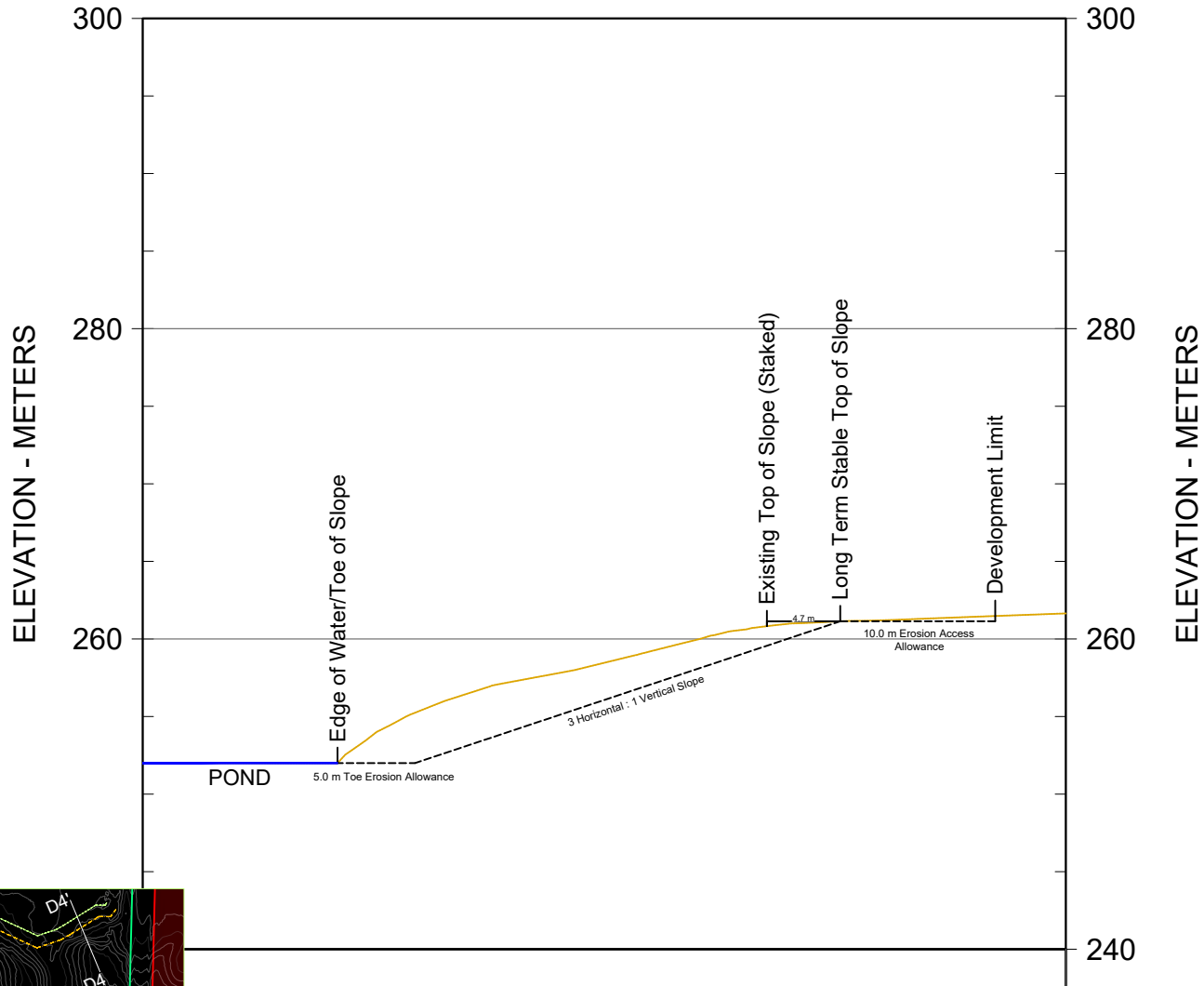

<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section C-C' (Anatolia Slope 3)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>		<p>Project 2400278</p>

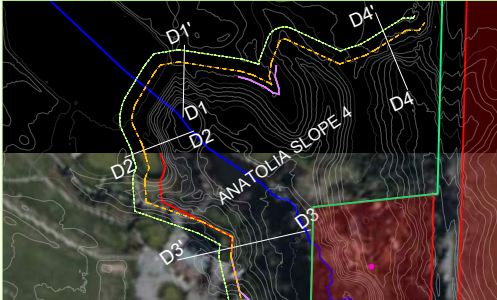
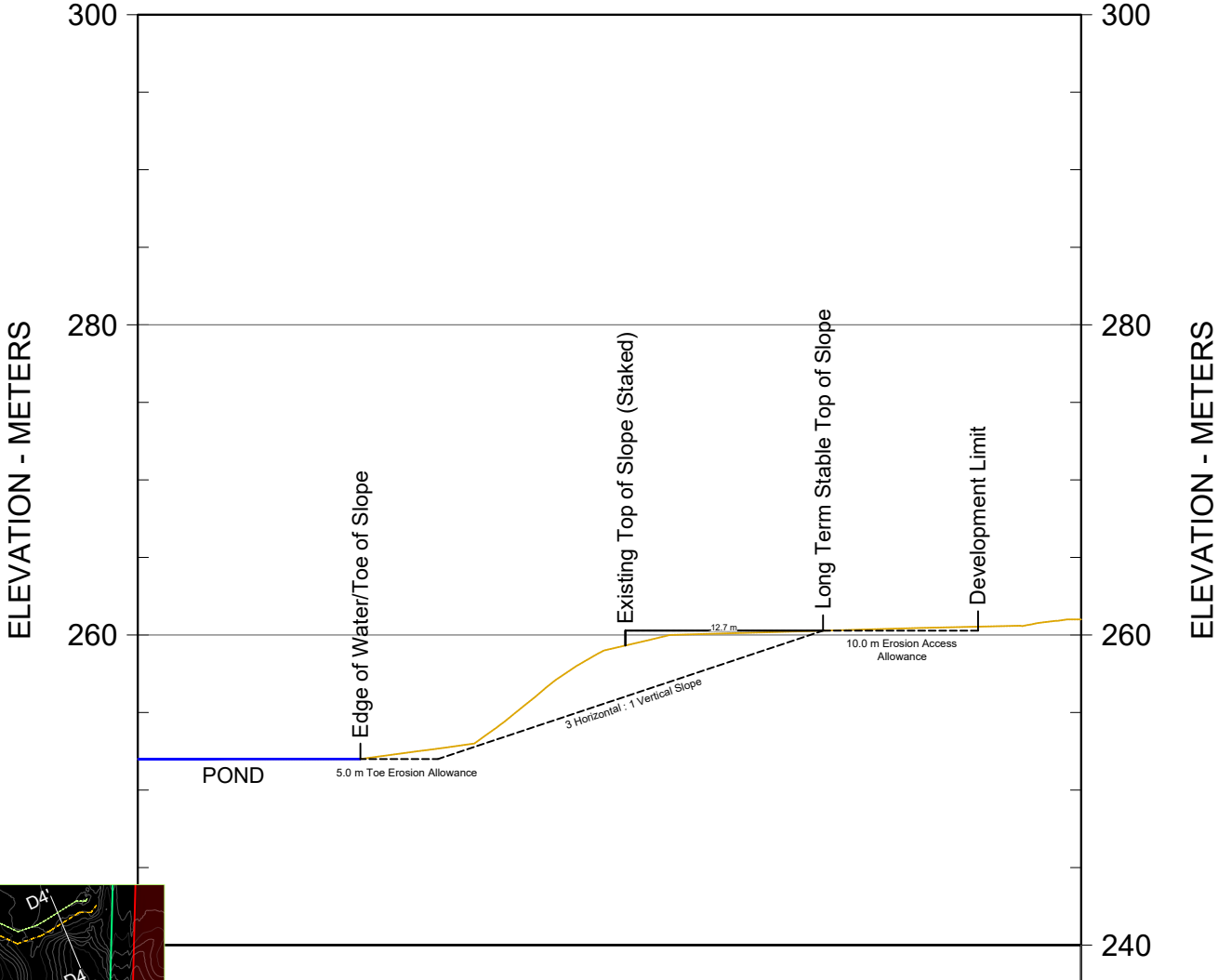
Fig. 3C


# CROSS SECTION D1-D1'



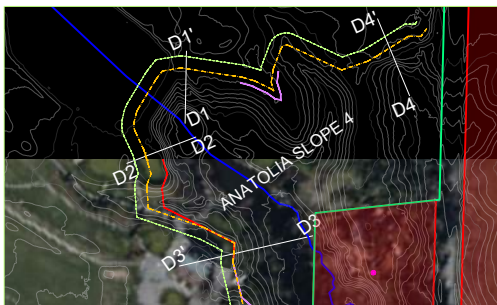
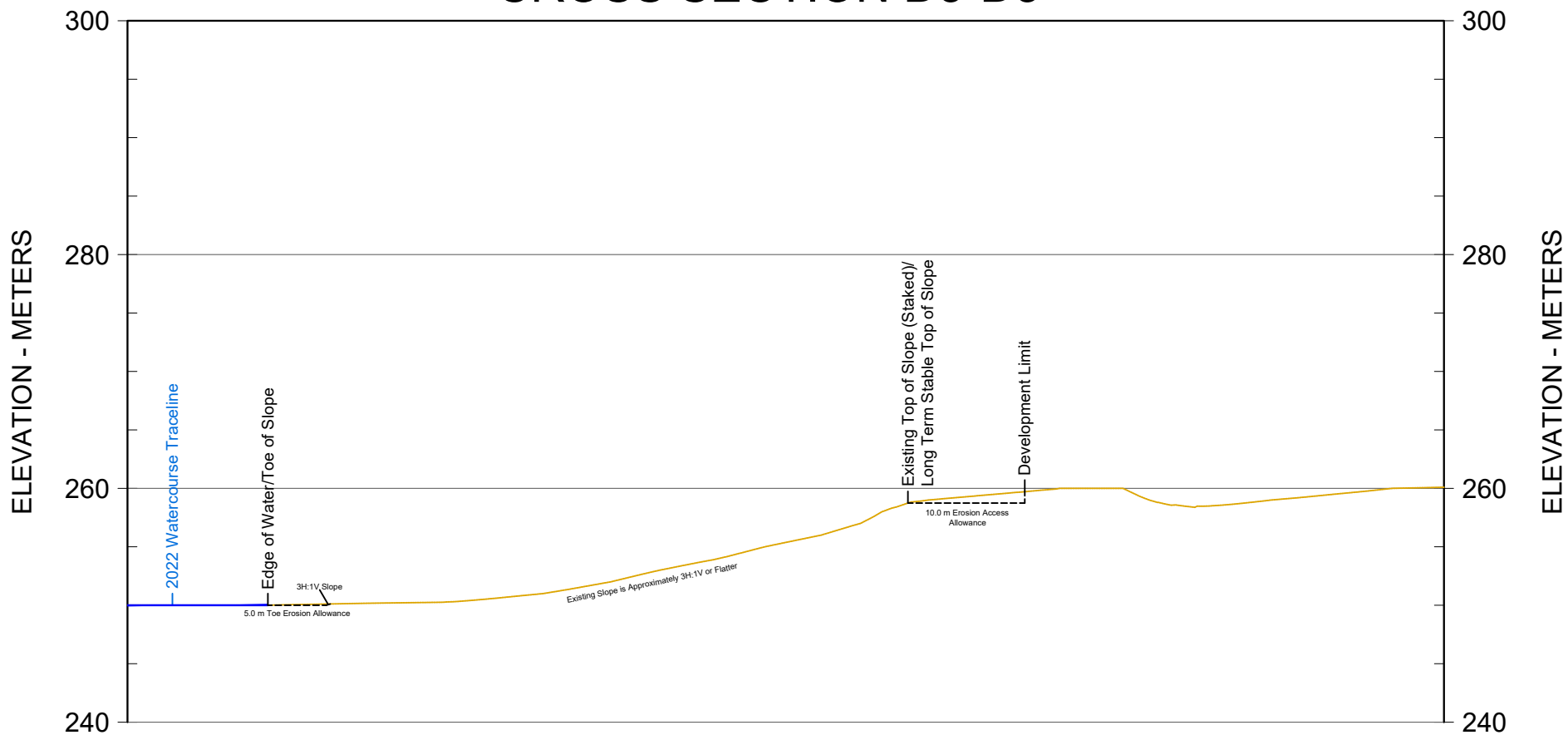
Preliminary Slope Stability Assessment		Cross Section D1-D1' (Anatolia Slope 4)
Mayfield Tullamore Landowner Group Inc.	Project 2400278	June 2024 <span style="float: right;">Fig. 3D1</span>

# CROSS SECTION D2-D2'



Preliminary Slope Stability Assessment		Cross Section D2-D2' (Anatolia Slope 4)
Mayfield Tullamore Landowner Group Inc.	Project 2400278	June 2024 <span style="float: right;">Fig. 3D2</span>

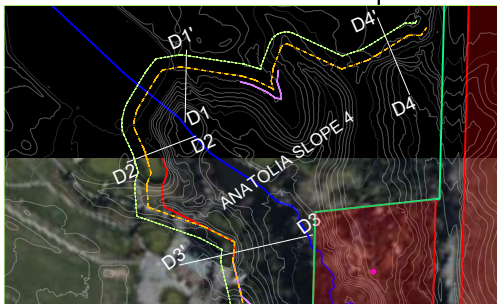
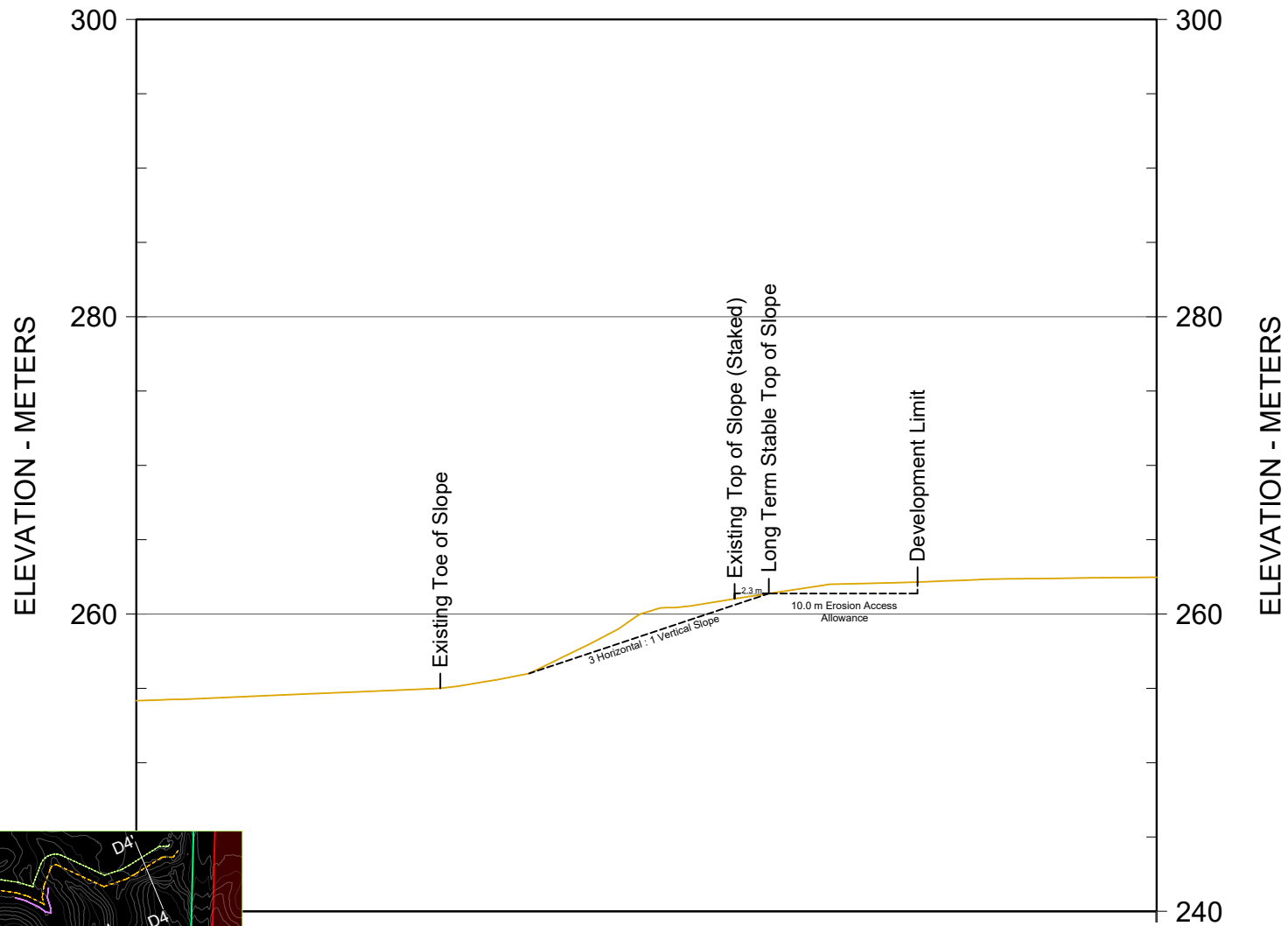
# CROSS SECTION D3-D3'




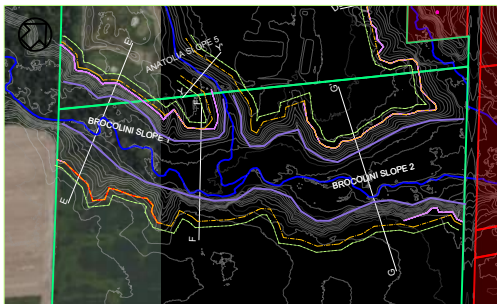
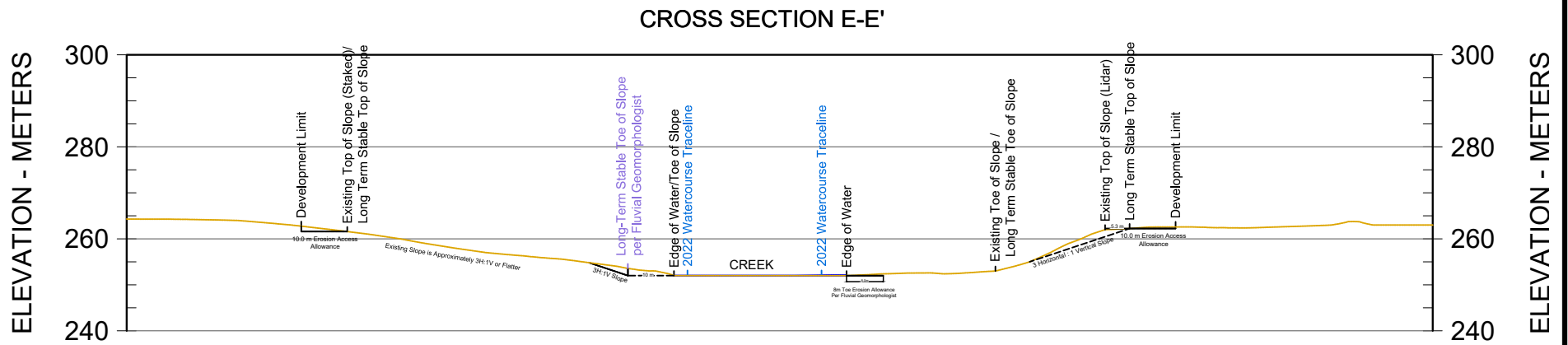
<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section D3-D3' (Anatolia Slope 4)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>	<p>Project 2400278</p>	<p>June 2024 <span style="float: right;">Fig. 3D3</span></p>



# CROSS SECTION D4-D4'

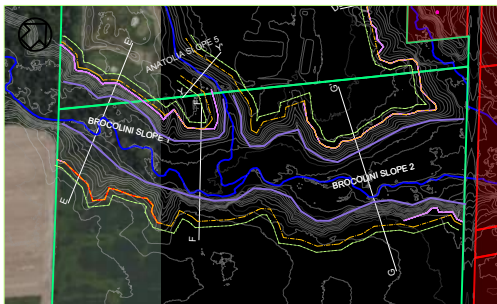
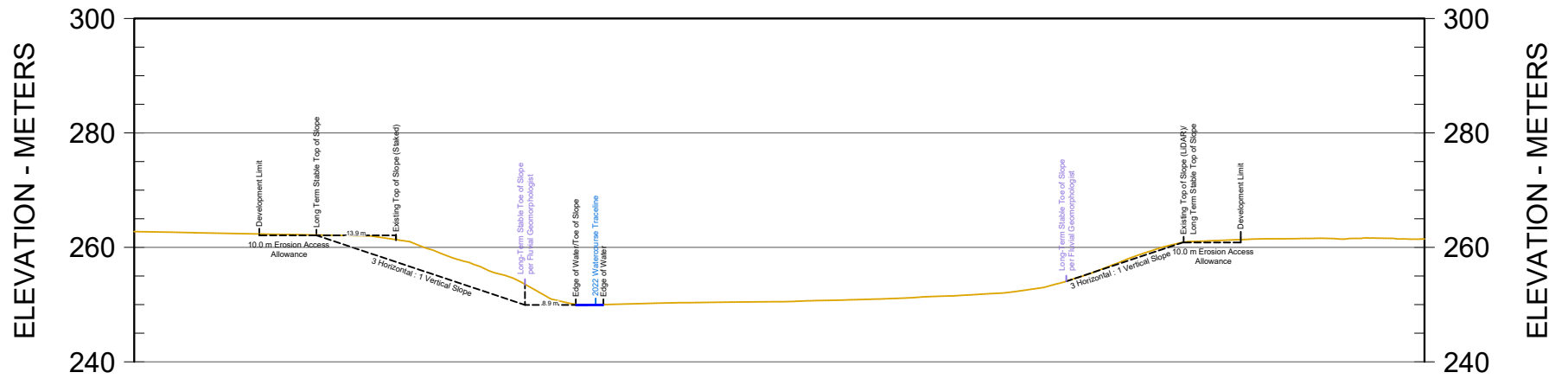


<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section D4-D4' (Anatolia Slope 4)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>		<p>Project 2400278 June 2024</p>



Preliminary Slope Stability Assessment		Cross Section E-E' (Brocolini Slope 1)
Mayfield Tullamore Landowner Group Inc.	Project 2400278	June 2024
		Fig. 3E

### CROSS SECTION F-F'




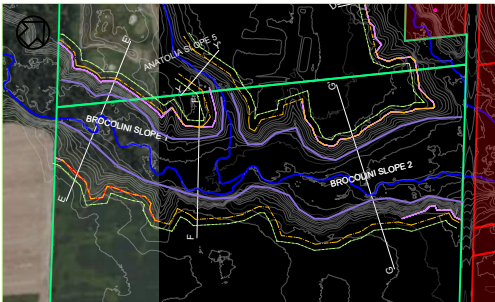
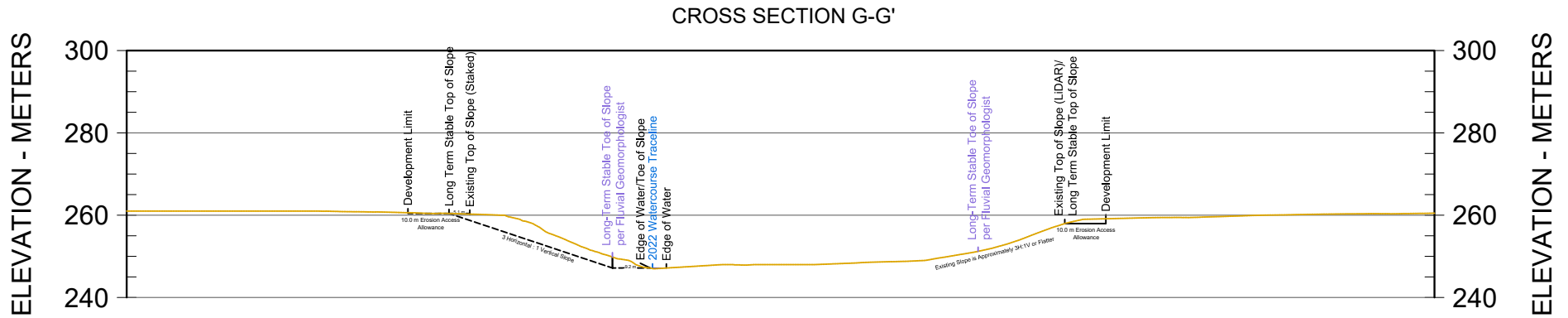

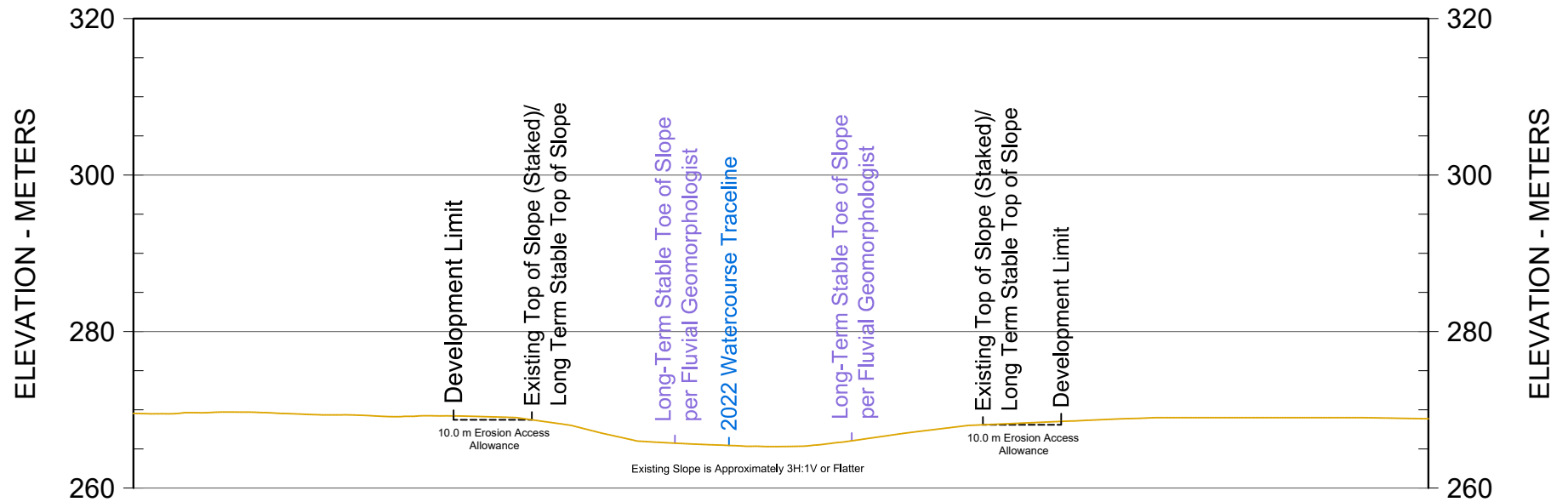
<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section F-F' (Brocolini Slope 1)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>		<p>Project 2400278</p>


Fig. 3F



<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section G-G' (Brocolini Slope 2)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>	<p>Project 2400278</p>	<p>June 2024</p>
		<p>Fig. 3G</p>

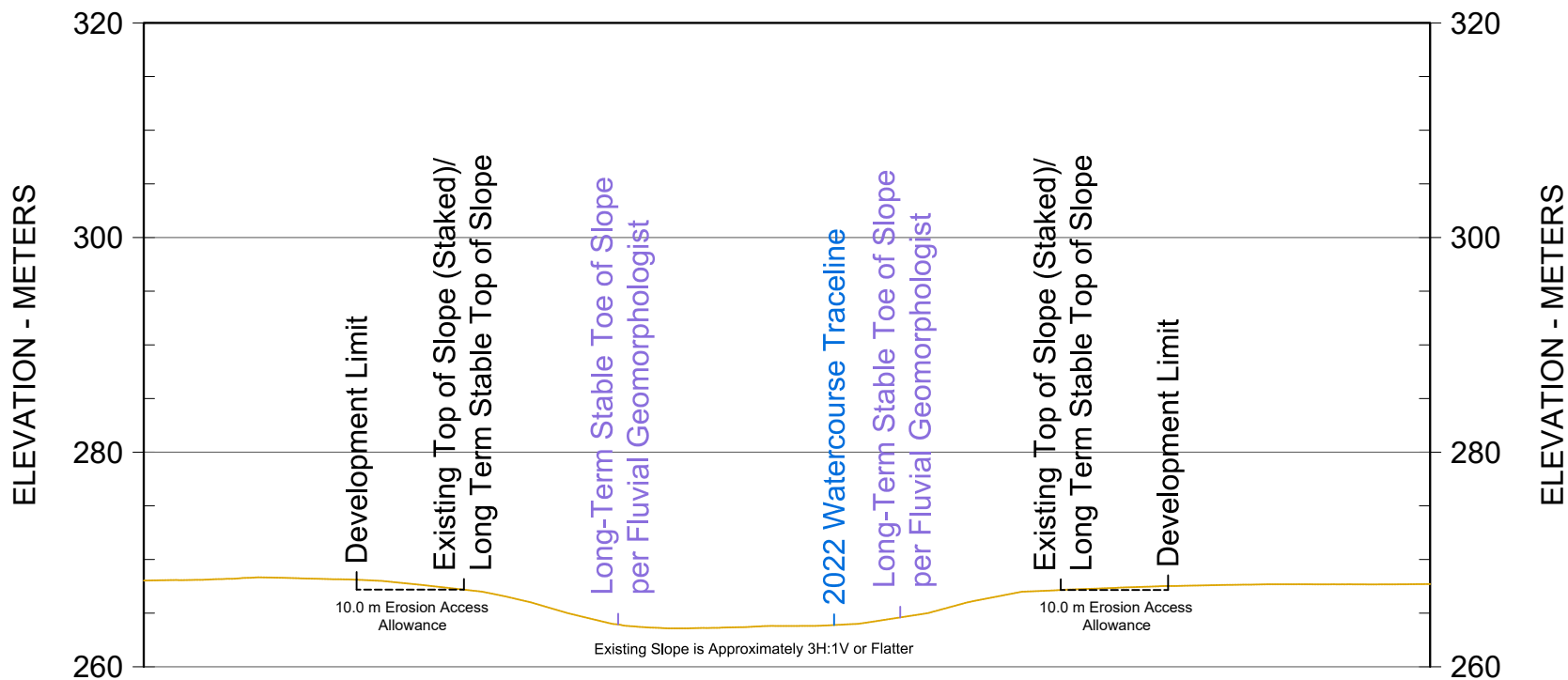
# CROSS SECTION H-H'



<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section H-H' (TACC Slope 1)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>		<p>Project 2400278    June 2024    Fig. 3H</p>



# CROSS SECTION I-I'



Preliminary Slope Stability Assessment



Cross Section I-I'  
(TACC Slope 1)

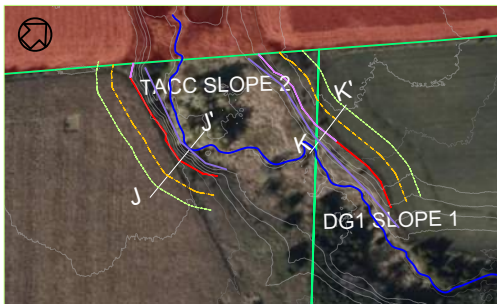
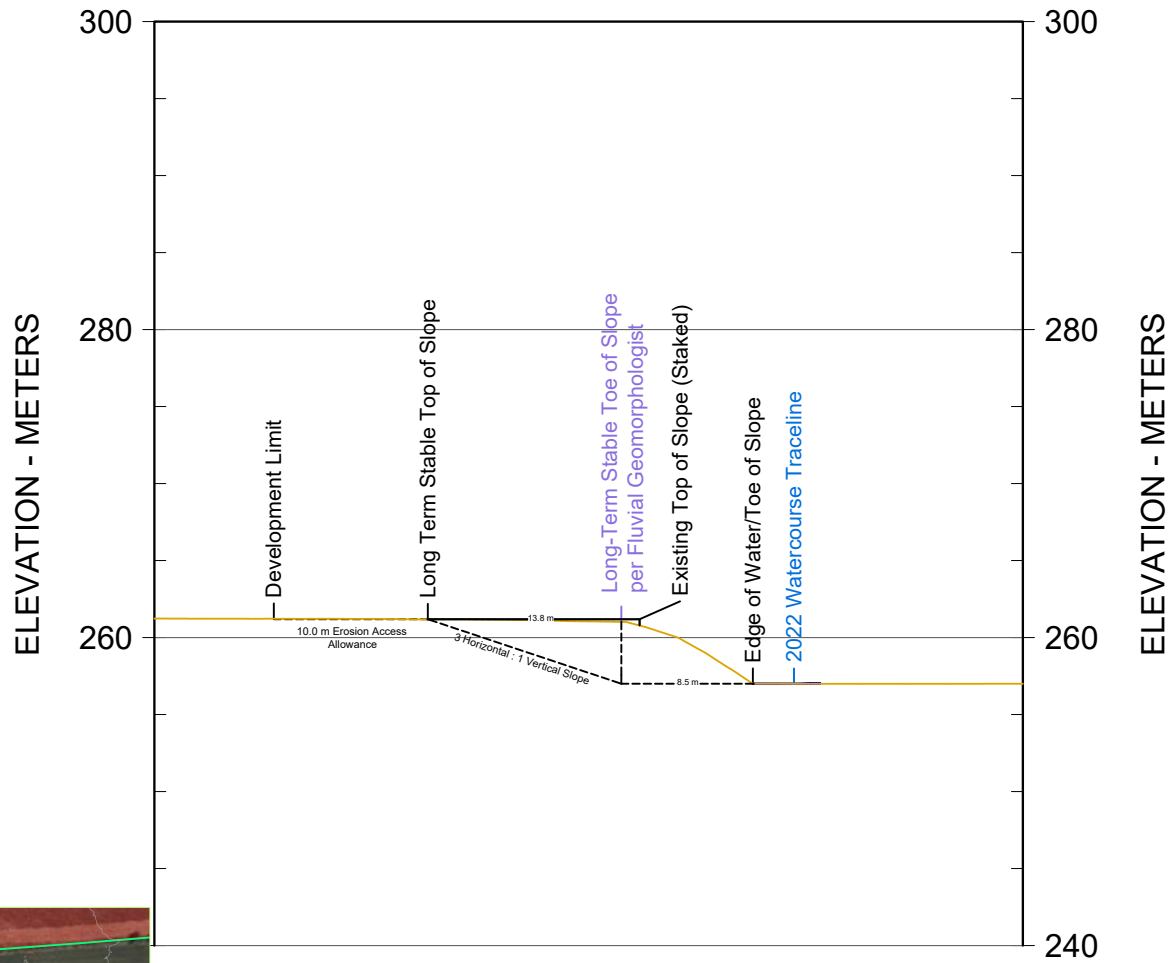
Mayfield Tullamore Landowner Group Inc.


Project 2400278

June 2024

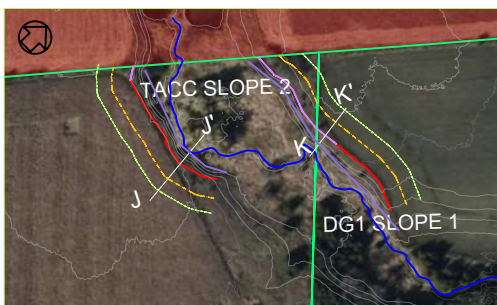
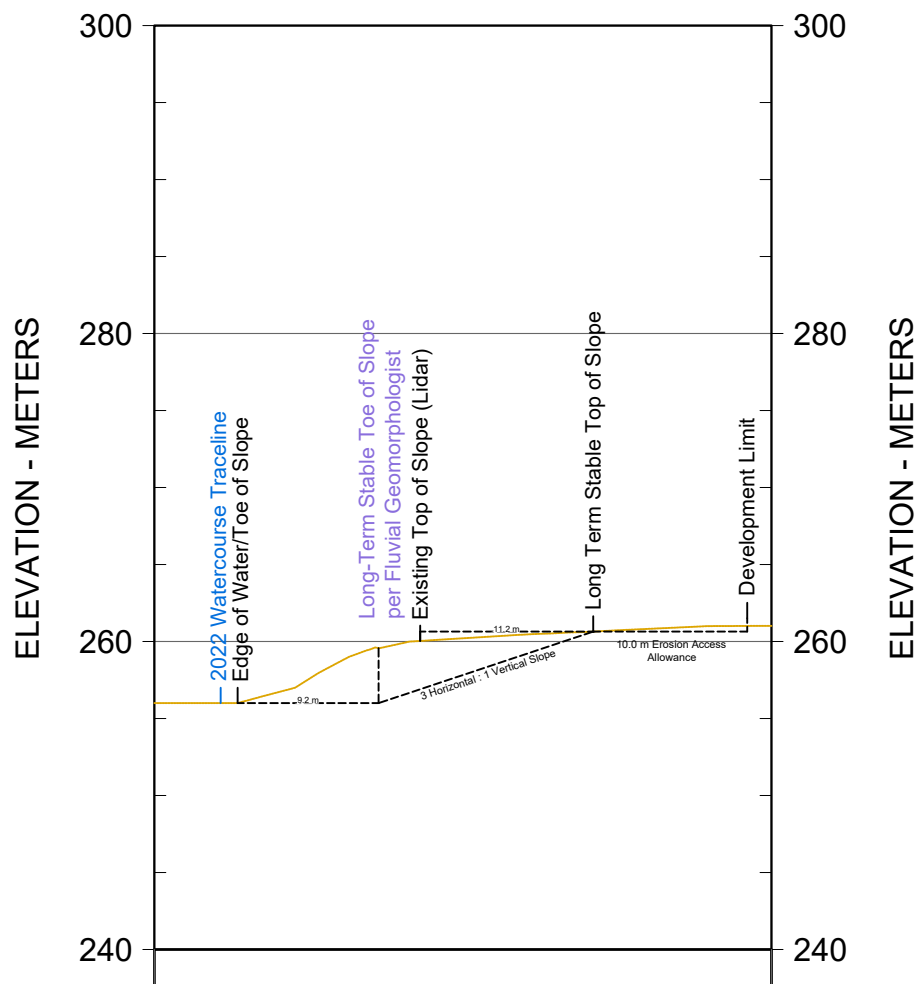
Fig. 3I


# CROSS SECTION J-J'



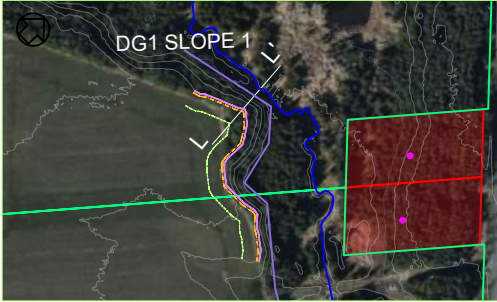
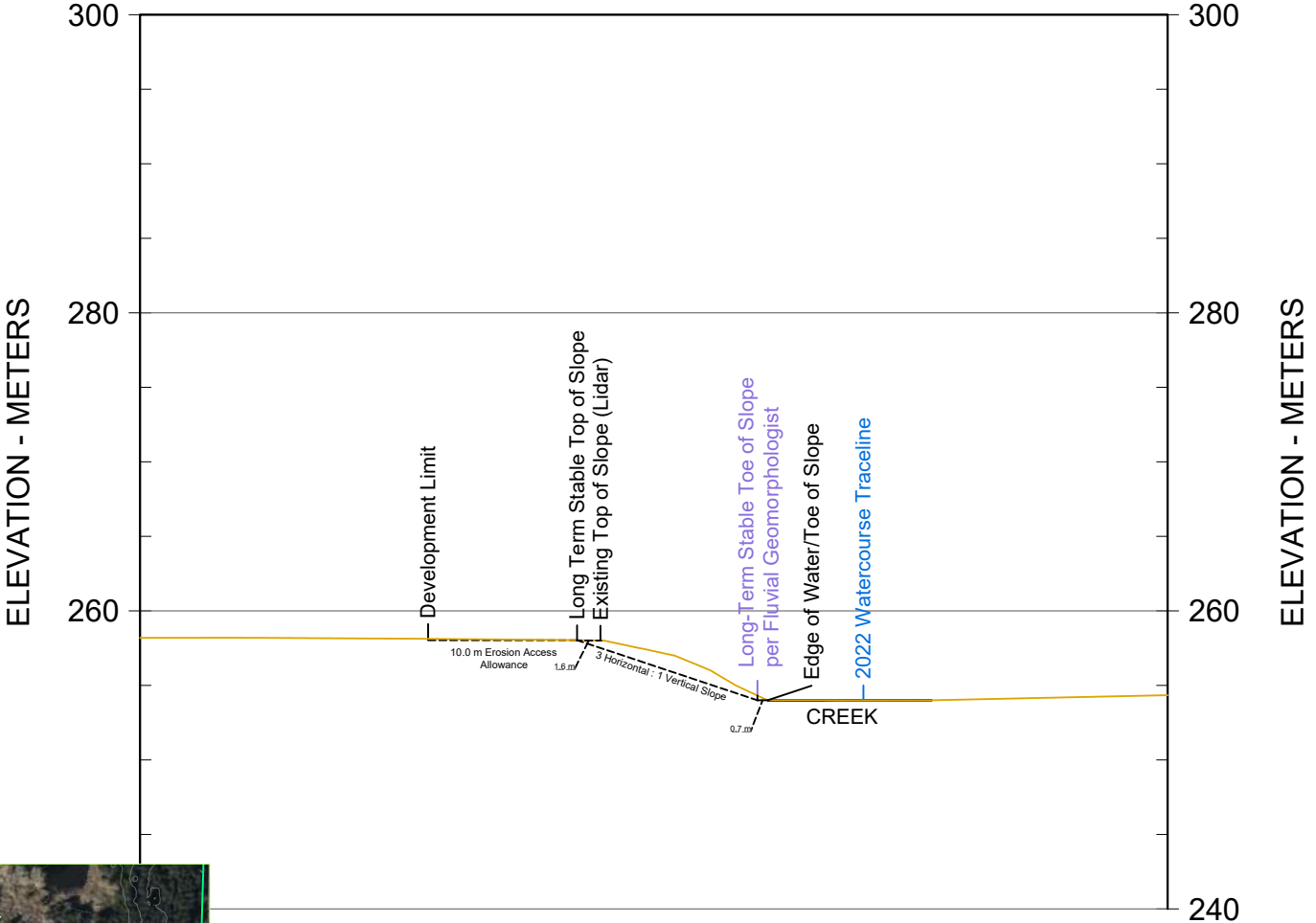
<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section J-J' (TACC Slope 2)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>	<p>Project 2400278</p>	<p>June 2024 <span style="float: right;">Fig. 3J</span></p>


# CROSS SECTION K-K'



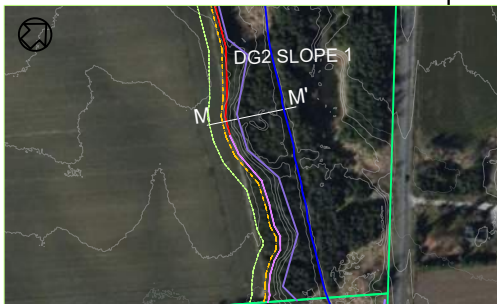
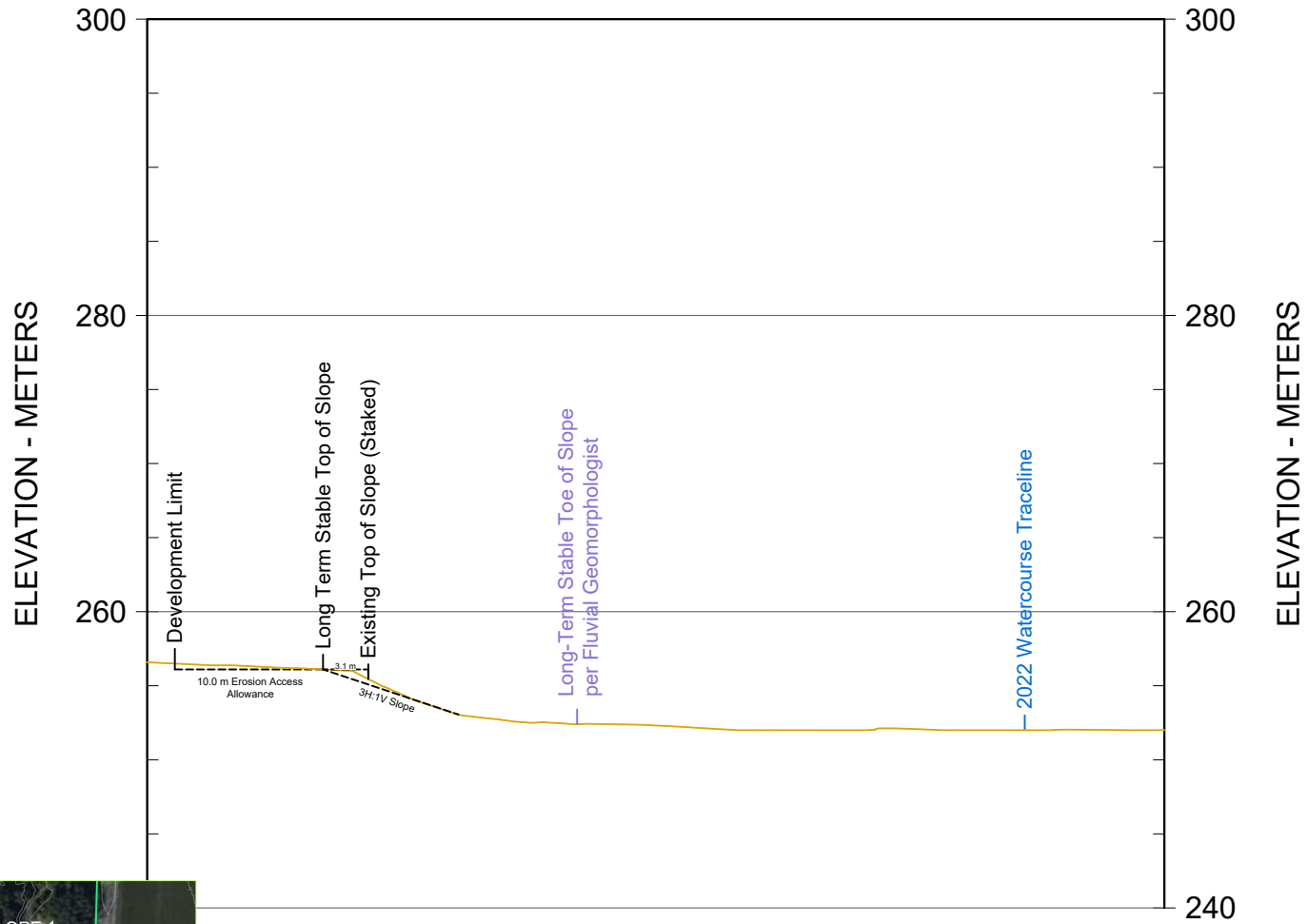
<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section K-K' (DG1 Slope 1)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>	<p>Project 2400278</p>	<p>June 2024 <span style="float: right;">Fig. 3K</span></p>


# CROSS SECTION L-L'



<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section L-L' (DG1 Slope 1)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>		<p>Project 2400278</p>

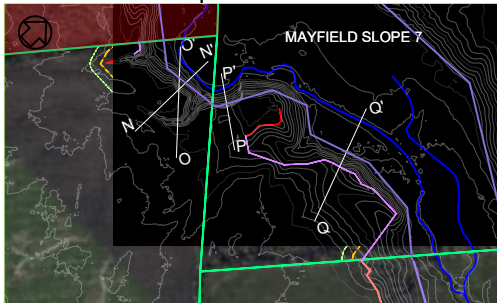
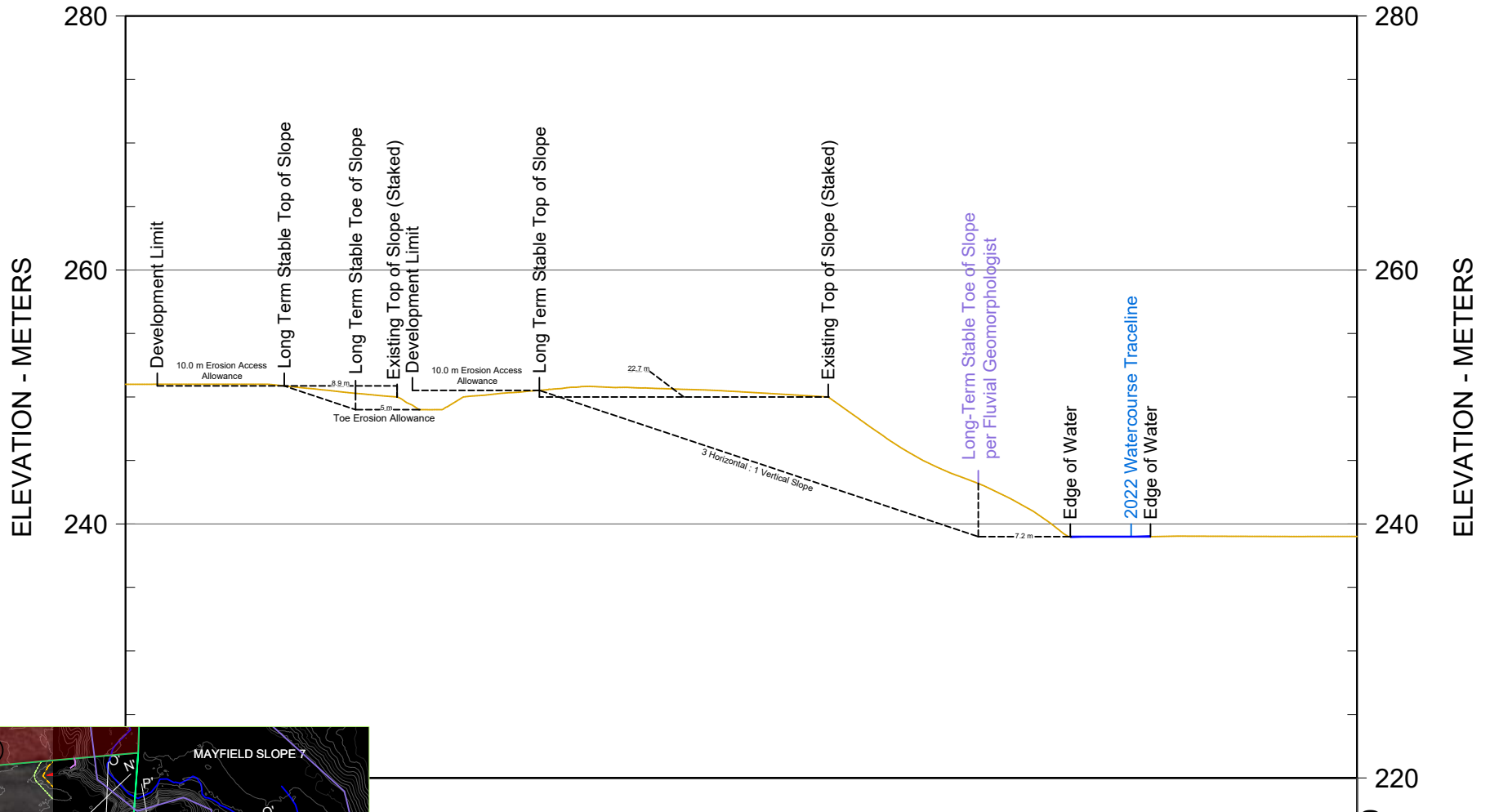
# CROSS SECTION M-M'



Preliminary Slope Stability Assessment		Cross Section M-M' (DG2 Slope 1)
Mayfield Tullamore Landowner Group Inc.	Project 2400278	June 2024 <span style="float: right;">Fig. 3M</span>



# CROSS SECTION N-N'




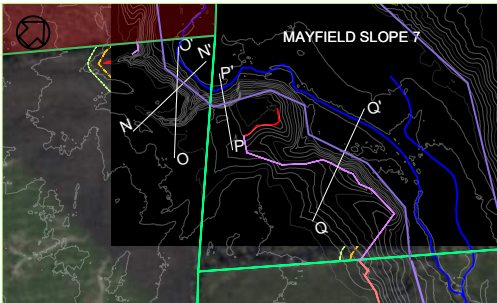
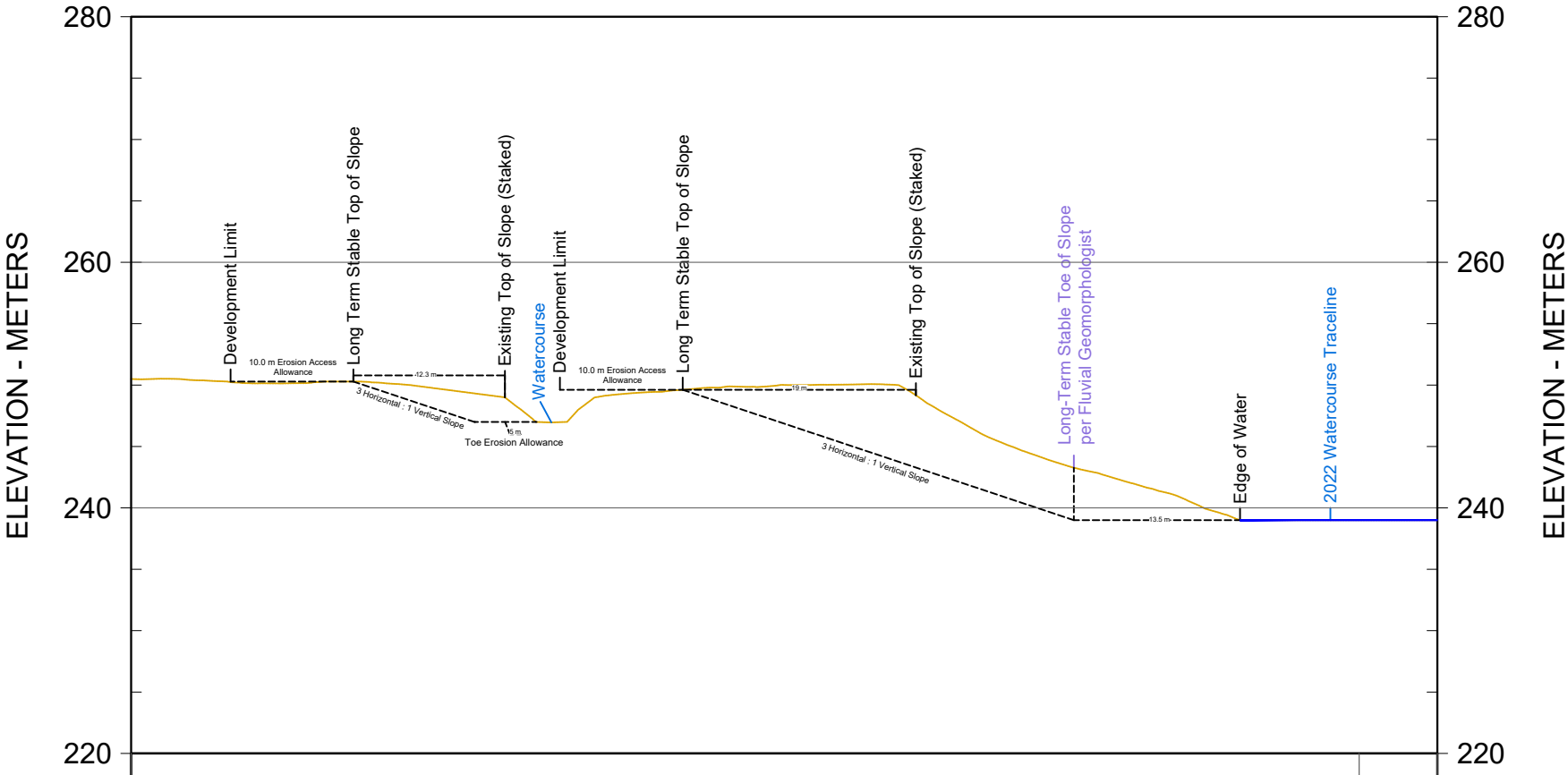
<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section N-N' (DG4 Slope 1)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>		

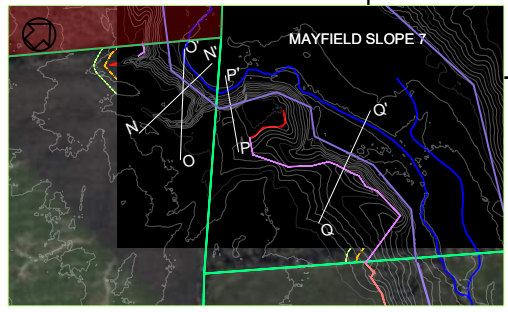
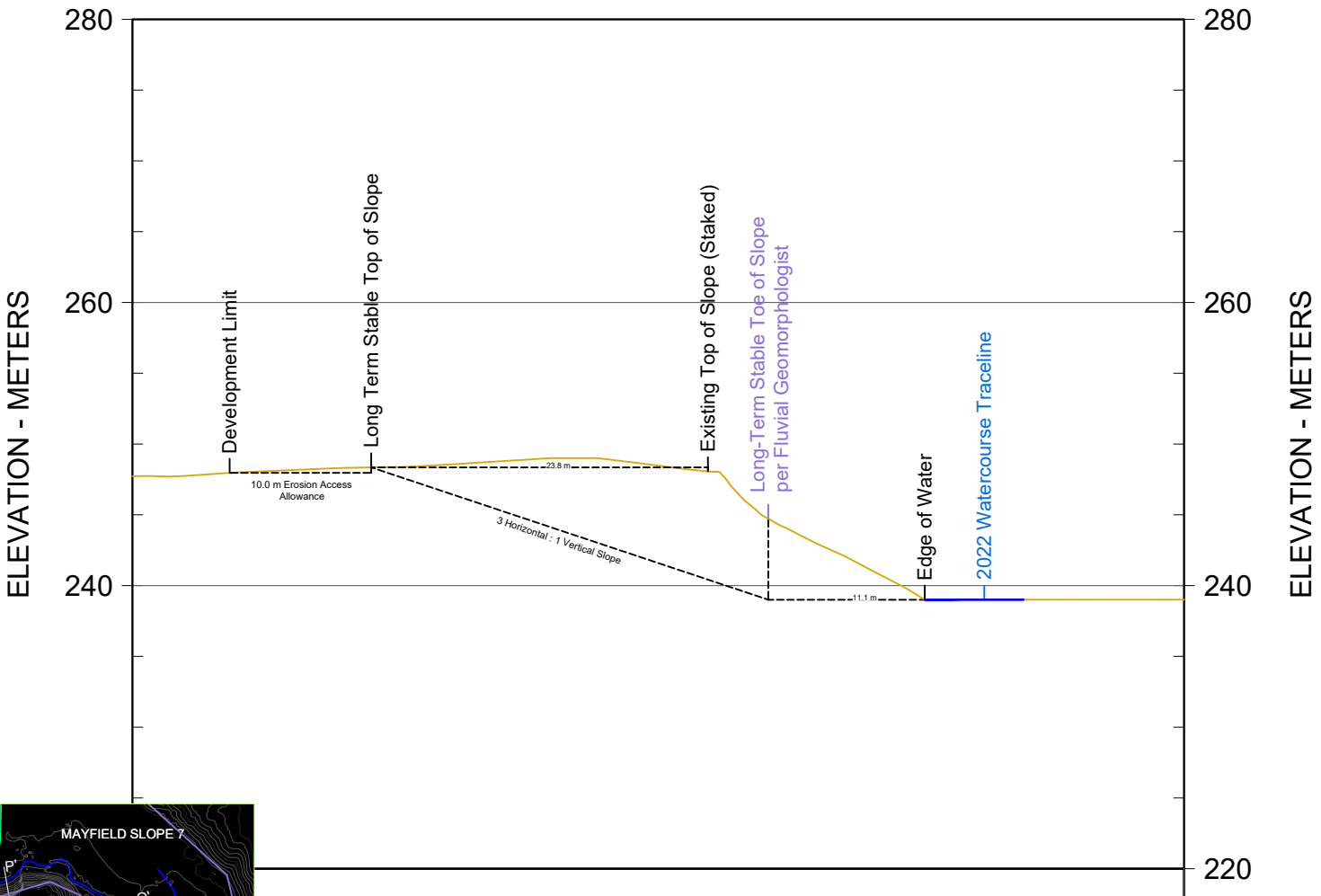
Fig. 3N


# CROSS SECTION O-O'



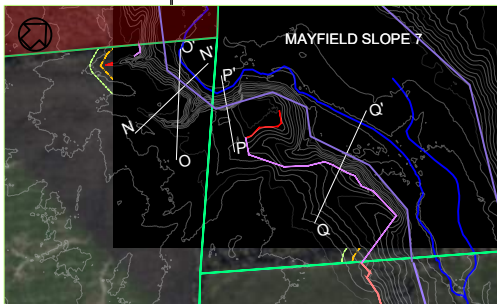
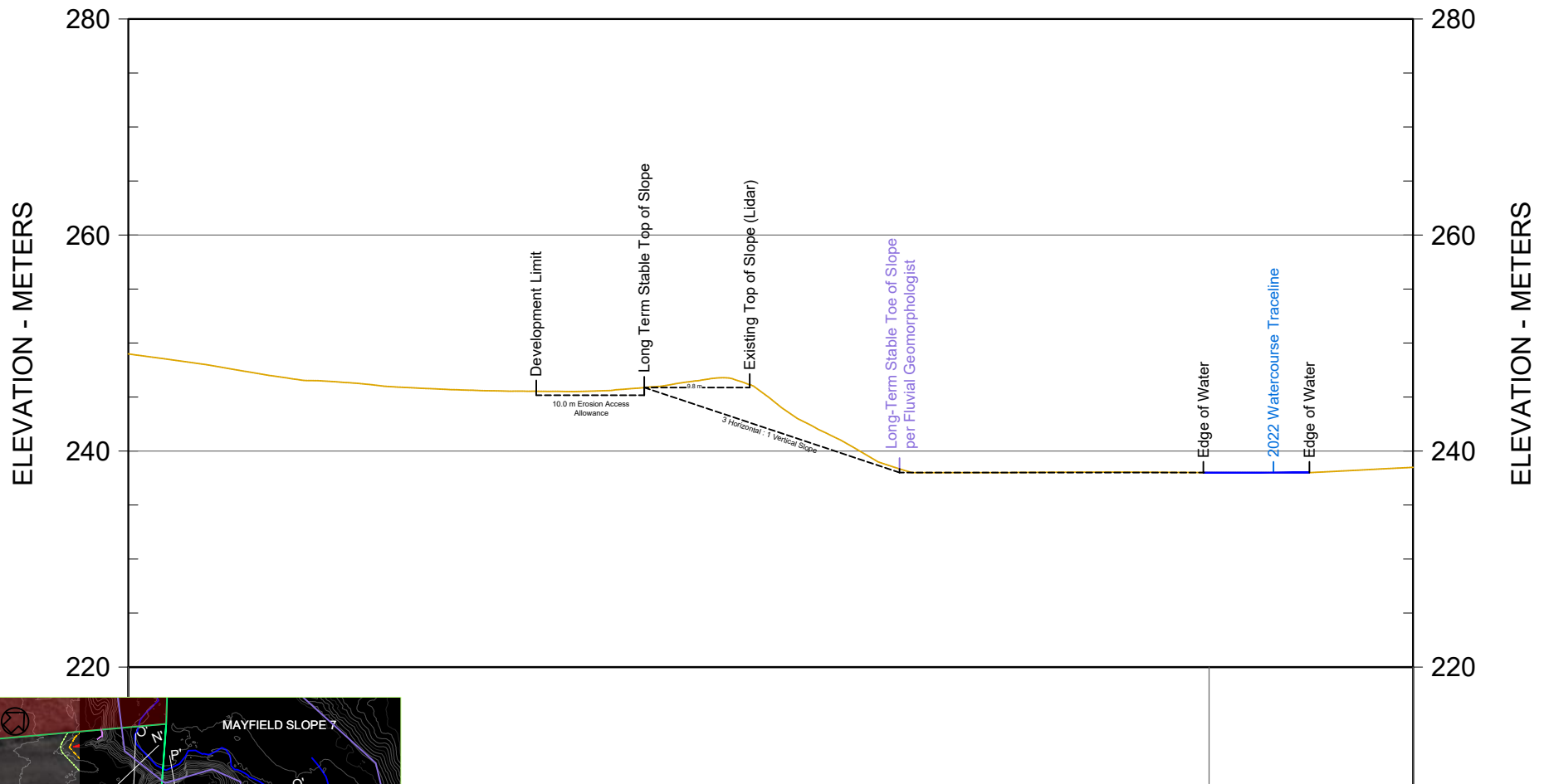
<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section O-O' (DG4 Slope 1)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>		<p>Project 2400278    June 2024    Fig. 30</p>

# CROSS SECTION P-P'



Preliminary Slope Stability Assessment		Cross Section P-P' (DG4 Slope 1)
Mayfield Tullamore Landowner Group Inc.	Project 2400278	June 2024 <span style="float: right;">Fig. 3P</span>

# CROSS SECTION Q-Q'



Preliminary Slope Stability Assessment

Mayfield Tullamore Landowner Group Inc.



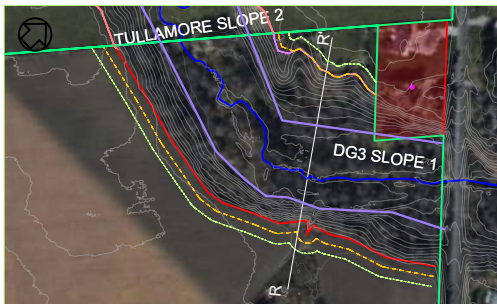
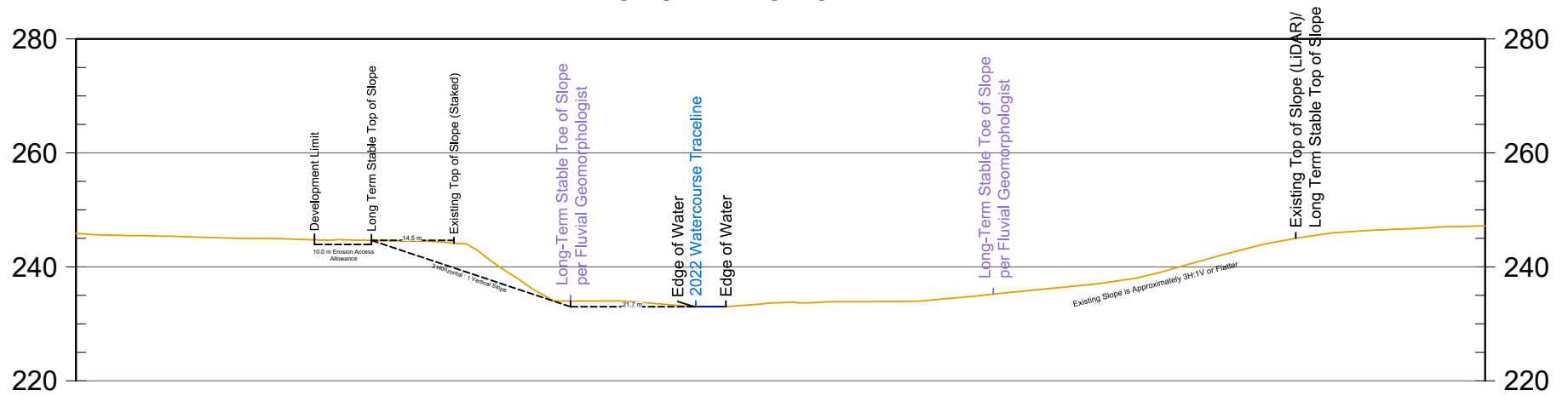
Project 2400278


Cross Section Q-Q'  
(Mayfield Slope 7)

June 2024

Fig. 3Q

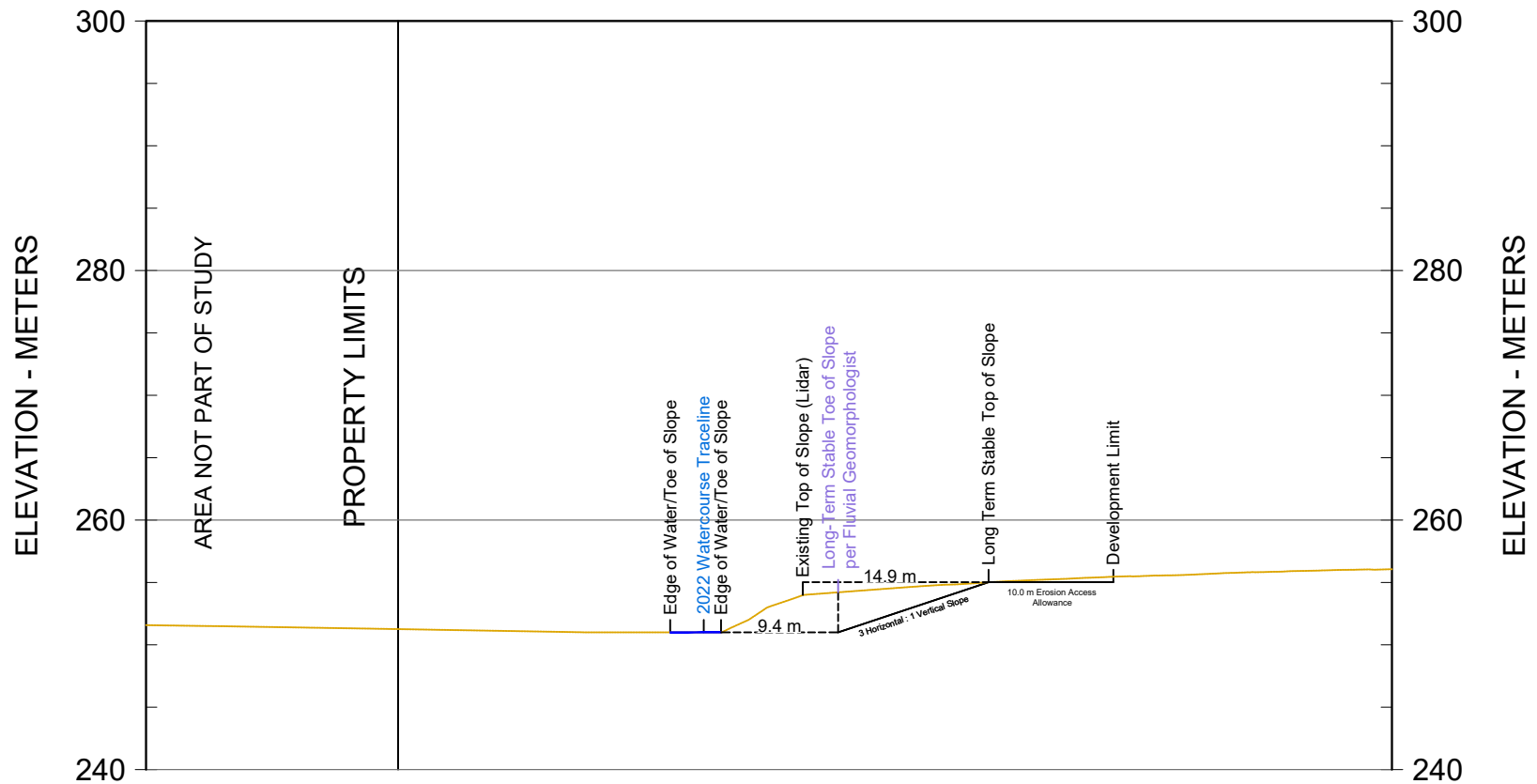
### CROSS SECTION R-R'




<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section R-R' (DG3 Slope 1)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>	<p>Project 2400278</p>	<p>June 2024 <span style="float: right;">Fig. 3R</span></p>

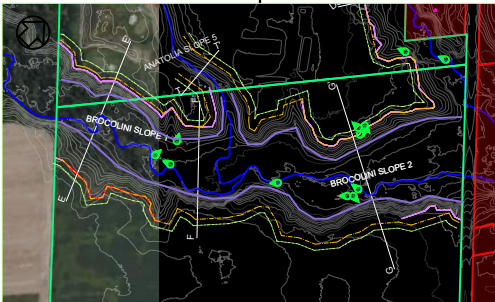
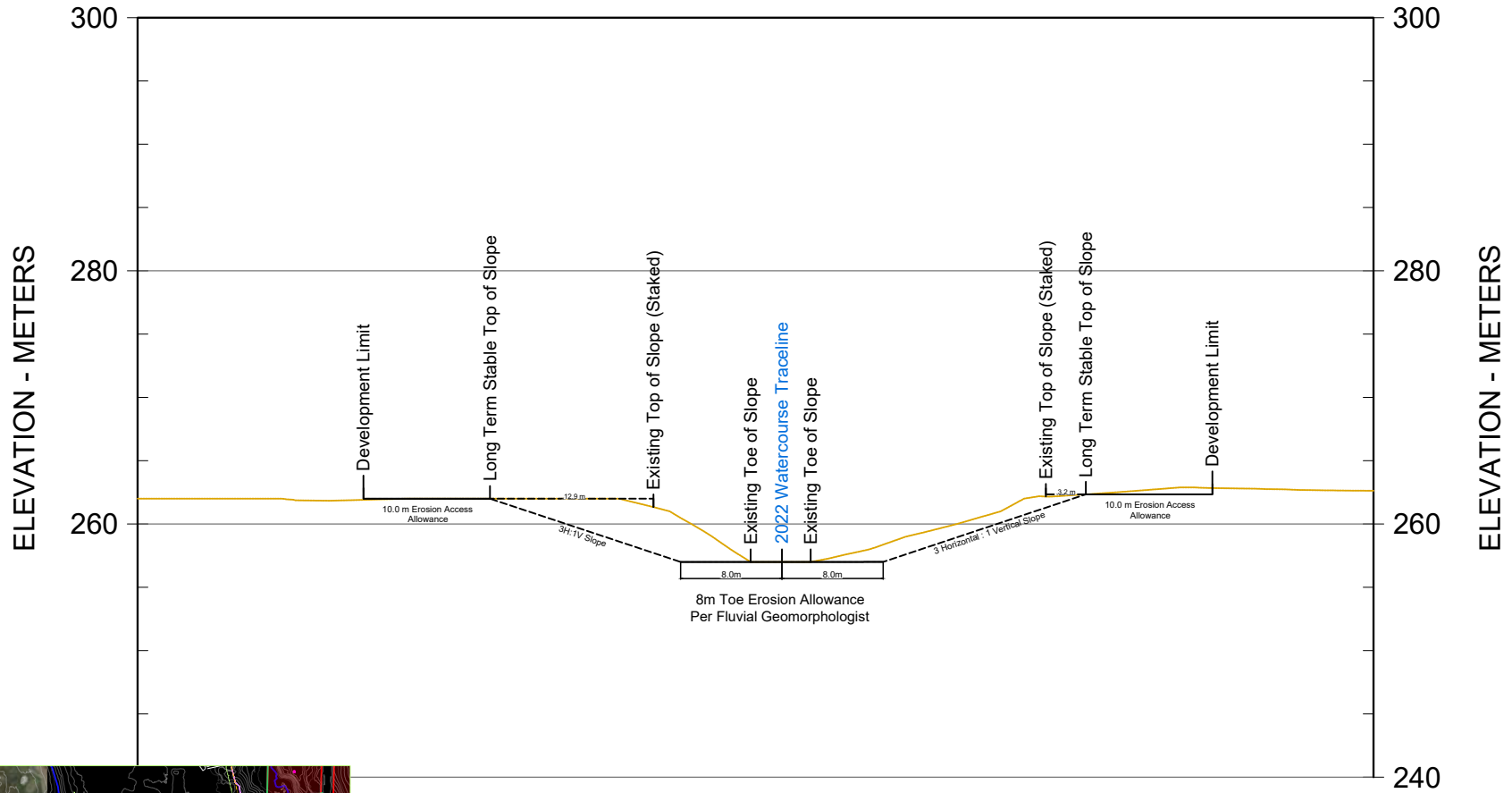


# CROSS SECTION S-S'



<p>Preliminary Slope Stability Assessment</p>		<p>Cross Section S-S' (Brocollini Slope 3)</p>
<p>Mayfield Tullamore Landowner Group Inc.</p>	<p>Project 2400278</p>	<p>June 2024 <span style="float: right;">Fig. 3S</span></p>

# CROSS SECTION T-T'



Preliminary Slope Stability Assessment

Mayfield Tullamore Landowner Group Inc.

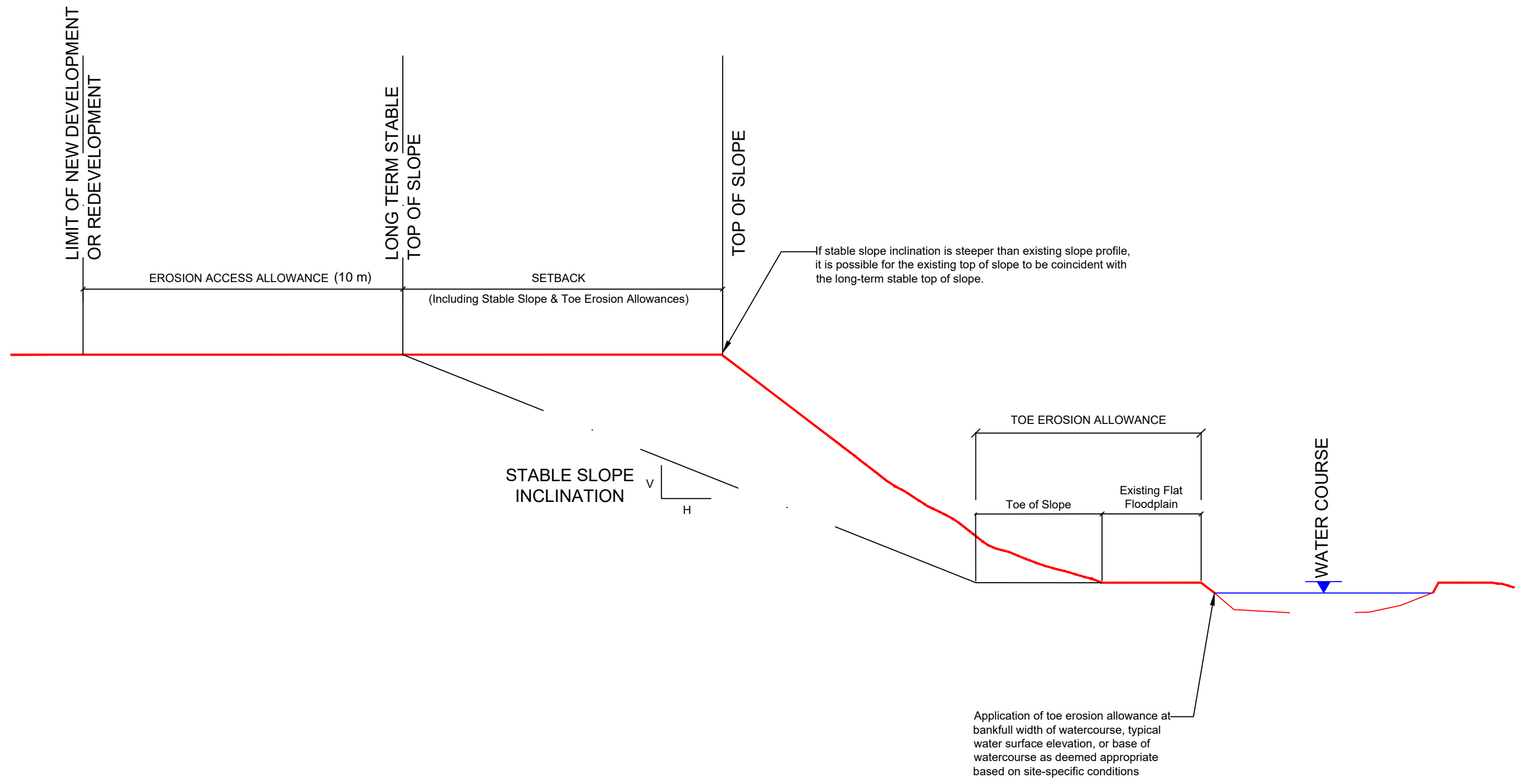


Project 2400278

Cross Section T-T'  
(Anatolia Slope 5)

June 2024

Fig. 3T



Project: Preliminary Slope Stability Assessment		
Title: Long Term Stable Top of Slope Model		
Mayfield Tullamore Landowner Group Inc.	Date: April 2024	Project No.: 2400278
	Scale: N.T.S	Figure No.: 4

# **ENCLOSURE 1**

## **Slope Inspection and Slope Rating Forms**

**File No:** 2400278  
**File Name:** Anatolia Slope 01  
**Inspection Date:** 2024/03/28  
**Inspected By (name):** IB/FH  
**Weather (circle):**  sunny  partly cloudy  overcast  
 clear  fog  rain  snow  
**Est. Air Temp. (°C):** 8

calm  breezy  windy  
 cold  cool  warm  hot

**Site Location / Directions (describe main roads, features):**  
 Banty's Roost Golf Course at 12600 Bramalea Rd, Caledon East, ON.

**Site Location Sketch:**

**Property Ownership (name, address, phone):**  
 Anatolia

**Legal Description:**  
 Lot 22  
 Concession 4  
 Township Caledon  
 County Peel

**Watershed:** Humber River  
**Governing Regional Body:** Caledon  
**Governing Conservation Authority:** TRCA

**Current Land Use (circle and describe):**

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites



**SLOPE DATA****Height**

3 - 6 m     6 - 10 m     10 - 15 m     15 - 20 m  
 20 - 25 m     25 - 30 m     >30 m

Estimated height (m): 6.5

**Inclination / Shape**

4:1 or flatter (25% / 14°)     Up to 3:1 (33% / 18.5°)     Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)     Up to 0.5:1 (200% / 63.5°)     Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP

Sheet Drainage.

FACE

Sheet Drainage.

BOTTOM

Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP

Sand, silt, and clay.

FACE

Sand, silt, and clay.

BOTTOM

Sand, silt, and clay.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

None.

PONDS, BAYS, LAKES

Pond.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Well vegetated with grass and mature trees.

FACE

Well vegetated with grass and mature trees.

BOTTOM

Well vegetated with grass.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

Walking path.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

None.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.

Site Location: Anatolia Slope 01  
 Property Owner: Anatolia  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/28  
 Weather: Partly cloudy

1. SLOPE INSPECTION			Rating Value	
	Degrees	Horiz. : Vert.		
a)	18 or less	3 : 1 or flatter	0	<input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6	<input checked="" type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16	<input type="checkbox"/>
2. SOIL STRATIGRAPHY				
a)	Shale, Limestone, Granite (Bedrock)		0	<input type="checkbox"/>
b)	Sand, Gravel		6	<input type="checkbox"/>
c)	Glacial Till		9	<input type="checkbox"/>
d)	Clay, Silt		12	<input checked="" type="checkbox"/>
e)	Fill		16	<input checked="" type="checkbox"/>
f)	Leda Clay		24	<input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE				
a)	None or Near bottom only		0	<input checked="" type="checkbox"/>
b)	Near mid-slope only		6	<input type="checkbox"/>
c)	Near crest only or from several levels		12	<input type="checkbox"/>
4. SLOPE HEIGHT				
a)	2 metres or less		0	<input type="checkbox"/>
b)	2.1 to 5 metres		2	<input type="checkbox"/>
c)	5.1 to 10 metres		4	<input checked="" type="checkbox"/>
d)	Greater than 10 metres		8	<input type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE				
a)	Well vegetated; heavy shrubs or forested with mature trees		0	<input checked="" type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4	<input type="checkbox"/>
c)	No vegetation; bare		8	<input type="checkbox"/>
6. TABLELAND DRAINAGE				
a)	Tableland flat, no apparent drainage over slope		0	<input checked="" type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2	<input type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4	<input type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE				
a)	15 metres or more from slope toe		0	<input type="checkbox"/>
b)	Less than 15 metres from slope toe		6	<input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY				
a)	No		0	<input checked="" type="checkbox"/>
b)	Yes		6	<input type="checkbox"/>
			<b>TOTAL</b>	
			<b>32</b>	
SLOPE INSTABILITY RATING	RATING VALUE TOTAL	INVESTIGATION REQUIREMENTS		

- |    |                    |       |  |
|----|--------------------|-------|--|
| 1. | Low potential      | <24   | Site inspection only, confirmation, report letter.                 |
| 2. | Slight potential   | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. | Moderate potential | >35   | Boreholes, piezometers, lab tests, surveying, detailed report.     |

**NOTES:**

a) Choose only one from each category; compare total rating value with above requirements.

b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** Anatolia Slope 02  
**Inspection Date:** 2024/03/28  
**Inspected By (name):** IB/FH  
**Weather (circle):**  sunny  partly cloudy  overcast  
 clear  fog  rain  snow  
**Est. Air Temp. (°C):** 8

calm  breezy  windy  
 cold  cool  warm  hot

**Site Location / Directions (describe main roads, features):**  
 Banty's Roost Golf Course at 12600 Bramalea Rd, Caledon East, ON.

**Site Location Sketch:**

**Property Ownership (name, address, phone):**  
 Anatolia

**Legal Description:**  
 Lot 22  
 Concession 4  
 Township Caledon  
 County Peel

**Watershed:** Humber River  
**Governing Regional Body:** Caledon  
**Governing Conservation Authority:** TRCA

**Current Land Use (circle and describe):**

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites



**SLOPE DATA**

**Height**

- 3 - 6 m       6 - 10 m       10 - 15 m       15 - 20 m  
 20 - 25 m       25 - 30 m       >30 m  
Estimated height (m):   3

**Inclination / Shape**

- 4:1 or flatter (25% / 14°)       Up to 3:1 (33% / 18.5°)       Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)       Up to 0.5:1 (200% / 63.5°)       Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP  
Sheet Drainage.

FACE  
Sheet Drainage.

BOTTOM  
Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP  
Sand, silt, and clay.

FACE  
Sand, silt, and clay.

BOTTOM  
Sand, silt, and clay.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

None.

PONDS, BAYS, LAKES

Pond.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Well vegetated with grass and mature trees.

FACE

Well vegetated with grass and mature trees.

BOTTOM

Well vegetated with grass.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

Walking path.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

None.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.

Site Location: Anatolia Slope 02  
 Property Owner: Anatolia  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/28  
 Weather: Partly cloudy

1. SLOPE INSPECTION			Rating Value	
	Degrees	Horiz. : Vert.		
a)	18 or less	3 : 1 or flatter	0	<input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6	<input checked="" type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16	<input type="checkbox"/>
2. SOIL STRATIGRAPHY				
a)	Shale, Limestone, Granite (Bedrock)		0	<input type="checkbox"/>
b)	Sand, Gravel		6	<input type="checkbox"/>
c)	Glacial Till		9	<input checked="" type="checkbox"/>
d)	Clay, Silt		12	<input type="checkbox"/>
e)	Fill		16	<input type="checkbox"/>
f)	Leda Clay		24	<input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE				
a)	None or Near bottom only		0	<input checked="" type="checkbox"/>
b)	Near mid-slope only		6	<input type="checkbox"/>
c)	Near crest only or from several levels		12	<input type="checkbox"/>
4. SLOPE HEIGHT				
a)	2 metres or less		0	<input type="checkbox"/>
b)	2.1 to 5 metres		2	<input checked="" type="checkbox"/>
c)	5.1 to 10 metres		4	<input type="checkbox"/>
d)	Greater than 10 metres		8	<input type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE				
a)	Well vegetated; heavy shrubs or forested with mature trees		0	<input type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4	<input checked="" type="checkbox"/>
c)	No vegetation; bare		8	<input type="checkbox"/>
6. TABLELAND DRAINAGE				
a)	Tableland flat, no apparent drainage over slope		0	<input type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2	<input checked="" type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4	<input type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE				
a)	15 metres or more from slope toe		0	<input type="checkbox"/>
b)	Less than 15 metres from slope toe		6	<input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY				
a)	No		0	<input checked="" type="checkbox"/>
b)	Yes		6	<input type="checkbox"/>
			<b>TOTAL</b>	
			<b>29</b>	
SLOPE INSTABILITY RATING	RATING VALUE TOTAL	INVESTIGATION REQUIREMENTS		

- |    |                    |       |  |
|----|--------------------|-------|--|
| 1. | Low potential      | <24   | Site inspection only, confirmation, report letter.                 |
| 2. | Slight potential   | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. | Moderate potential | >35   | Boreholes, piezometers, lab tests, surveying, detailed report.     |

**NOTES:**

a) Choose only one from each category; compare total rating value with above requirements.

b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** Anatolia Slope 03  
**Inspection Date:** 2024/03/28  
**Inspected By (name):** IB/FH  
**Weather (circle):**  sunny  partly cloudy  overcast  
 clear  fog  rain  snow  
**Est. Air Temp. (°C):** 8

calm  breezy  windy  
 cold  cool  warm  hot

**Site Location / Directions (describe main roads, features):**  
 Banty's Roost Golf Course at 12600 Bramalea Rd, Caledon East, ON.

**Site Location Sketch:**

**Property Ownership (name, address, phone):**  
 Anatolia

**Legal Description:**

Lot 21  
 Concession 4  
 Township Caledon  
 County Peel

**Watershed:** Humber River

**Governing Regional Body:** Caledon

**Governing Conservation Authority:** TRCA

**Current Land Use (circle and describe):**

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites



**SLOPE DATA**

**Height**

- 3 - 6 m       6 - 10 m       10 - 15 m       15 - 20 m  
 20 - 25 m       25 - 30 m       >30 m  
Estimated height (m):   3

**Inclination / Shape**

- 4:1 or flatter (25% / 14°)       Up to 3:1 (33% / 18.5°)       Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)       Up to 0.5:1 (200% / 63.5°)       Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP  
Sheet Drainage.

FACE  
Sheet Drainage.

BOTTOM  
Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP  
Sand, silt, and clay.

FACE  
Sand, silt, and clay.

BOTTOM  
Sand, silt, and clay.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

None.

PONDS, BAYS, LAKES

Pond.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Well vegetated with grass and some mature trees.

FACE

Well vegetated with grass and some mature trees.

BOTTOM

Well vegetated with grass.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

Walking path.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

None.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.

Site Location: Anatolia Slope 03  
 Property Owner: Anatolia  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/28  
 Weather: Partly cloudy

1. SLOPE INSPECTION			Rating Value	
	Degrees	Horiz. : Vert.		
a)	18 or less	3 : 1 or flatter	0	<input checked="" type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6	<input type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16	<input type="checkbox"/>
2. SOIL STRATIGRAPHY				
a)	Shale, Limestone, Granite (Bedrock)		0	<input type="checkbox"/>
b)	Sand, Gravel		6	<input type="checkbox"/>
c)	Glacial Till		9	<input checked="" type="checkbox"/>
d)	Clay, Silt		12	<input checked="" type="checkbox"/>
e)	Fill		16	<input type="checkbox"/>
f)	Leda Clay		24	<input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE				
a)	None or Near bottom only		0	<input checked="" type="checkbox"/>
b)	Near mid-slope only		6	<input type="checkbox"/>
c)	Near crest only or from several levels		12	<input type="checkbox"/>
4. SLOPE HEIGHT				
a)	2 metres or less		0	<input type="checkbox"/>
b)	2.1 to 5 metres		2	<input checked="" type="checkbox"/>
c)	5.1 to 10 metres		4	<input type="checkbox"/>
d)	Greater than 10 metres		8	<input type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE				
a)	Well vegetated; heavy shrubs or forested with mature trees		0	<input type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4	<input checked="" type="checkbox"/>
c)	No vegetation; bare		8	<input type="checkbox"/>
6. TABLELAND DRAINAGE				
a)	Tableland flat, no apparent drainage over slope		0	<input checked="" type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2	<input type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4	<input type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE				
a)	15 metres or more from slope toe		0	<input type="checkbox"/>
b)	Less than 15 metres from slope toe		6	<input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY				
a)	No		0	<input checked="" type="checkbox"/>
b)	Yes		6	<input type="checkbox"/>
			<b>TOTAL</b>	
			<u>24</u>	
SLOPE INSTABILITY RATING	RATING VALUE TOTAL	INVESTIGATION REQUIREMENTS		

- |    |                    |       |  |
|----|--------------------|-------|--|
| 1. | Low potential      | <24   | Site inspection only, confirmation, report letter.                 |
| 2. | Slight potential   | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. | Moderate potential | >35   | Boreholes, piezometers, lab tests, surveying, detailed report.     |

**NOTES:** a) Choose only one from each category; compare total rating value with above requirements.  
 b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** Anatolia Slope 04  
**Inspection Date:** 2024/03/28  
**Inspected By (name):** IB/FH  
**Weather (circle):**  sunny  partly cloudy  overcast  
 clear  fog  rain  snow  
**Est. Air Temp. (°C):** 8

calm  breezy  windy  
 cold  cool  warm  hot

**Site Location / Directions (describe main roads, features):**  
 Banty's Roost Golf Course at 12600 Bramalea Rd, Caledon East, ON.

**Site Location Sketch:**

**Property Ownership (name, address, phone):**  
 Anatolia

**Legal Description:**

Lot 21  
 Concession 4  
 Township Caledon  
 County Peel

**Watershed:** Humber River

**Governing Regional Body:** Caledon

**Governing Conservation Authority:** TRCA

**Current Land Use (circle and describe):**

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites



**SLOPE DATA**

**Height**

- 3 - 6 m       6 - 10 m       10 - 15 m       15 - 20 m  
 20 - 25 m       25 - 30 m       >30 m  
Estimated height (m): 10

**Inclination / Shape**

- 4:1 or flatter (25% / 14°)       Up to 3:1 (33% / 18.5°)       Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)       Up to 0.5:1 (200% / 63.5°)       Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP  
Sheet Drainage.

FACE  
Sheet Drainage.

BOTTOM  
Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP  
Sand, silt, and clay.

FACE  
Sand, silt, and clay.

BOTTOM  
Sand, silt, and clay.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

Stream.

PONDS, BAYS, LAKES

None.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Well vegetated with grass and mature trees.

FACE

Well vegetated with grass and mature trees.

BOTTOM

Well vegetated with grass and mature trees.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

Building with deck and stairs.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

None.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.

Site Location: Anatolia Slope 04  
 Property Owner: Anatolia  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/28  
 Weather: Partly cloudy

1. SLOPE INSPECTION			Rating Value
	Degrees	Horiz. : Vert.	
a)	18 or less	3 : 1 or flatter	0 <input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6 <input type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16 <input checked="" type="checkbox"/>
2. SOIL STRATIGRAPHY			
a)	Shale, Limestone, Granite (Bedrock)		0 <input type="checkbox"/>
b)	Sand, Gravel		6 <input type="checkbox"/>
c)	Glacial Till		9 <input type="checkbox"/>
d)	Clay, Silt		12 <input checked="" type="checkbox"/>
e)	Fill		16 <input checked="" type="checkbox"/>
f)	Leda Clay		24 <input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE			
a)	None or Near bottom only		0 <input checked="" type="checkbox"/>
b)	Near mid-slope only		6 <input type="checkbox"/>
c)	Near crest only or from several levels		12 <input type="checkbox"/>
4. SLOPE HEIGHT			
a)	2 metres or less		0 <input type="checkbox"/>
b)	2.1 to 5 metres		2 <input type="checkbox"/>
c)	5.1 to 10 metres		4 <input type="checkbox"/>
d)	Greater than 10 metres		8 <input checked="" type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE			
a)	Well vegetated; heavy shrubs or forested with mature trees		0 <input checked="" type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4 <input type="checkbox"/>
c)	No vegetation; bare		8 <input type="checkbox"/>
6. TABLELAND DRAINAGE			
a)	Tableland flat, no apparent drainage over slope		0 <input type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2 <input checked="" type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4 <input type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE			
a)	15 metres or more from slope toe		0 <input type="checkbox"/>
b)	Less than 15 metres from slope toe		6 <input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY			
a)	No		0 <input checked="" type="checkbox"/>
b)	Yes		6 <input type="checkbox"/>
			<b>TOTAL</b>
			<b>48</b>
SLOPE INSTABILITY RATING	RATING VALUE TOTAL	INVESTIGATION REQUIREMENTS	

- |    |                    |       |  |
|----|--------------------|-------|--|
| 1. | Low potential      | <24   | Site inspection only, confirmation, report letter.                 |
| 2. | Slight potential   | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. | Moderate potential | >35   | Boreholes, piezometers, lab tests, surveying, detailed report.     |

**NOTES:**

a) Choose only one from each category; compare total rating value with above requirements.

b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** Broccolini Slope 01  
**Inspection Date:** 2024/03/28  
**Inspected By (name):** IB/FH  
**Weather (circle):**  sunny  partly cloudy  overcast  
 clear  fog  rain  snow  
**Est. Air Temp. (°C):** 8

calm  breezy  windy  
 cold  cool  warm  hot

**Site Location / Directions (describe main roads, features):**  
 West of Bramalea Road, south of Banty's Roost Golf Club, Caledon, ON.

**Site Location Sketch:**

**Property Ownership (name, address, phone):**

Broccolini

**Legal Description:**

Lot 20  
 Concession 4  
 Township Caledon  
 County Peel

**Watershed:** Humber River

**Governing Regional Body:** Caledon

**Governing Conservation Authority:** TRCA

**Current Land Use (circle and describe):**

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites



**SLOPE DATA**

**Height**

- 3 - 6 m       6 - 10 m       10 - 15 m       15 - 20 m  
 20 - 25 m       25 - 30 m       >30 m  
Estimated height (m): 10-12

**Inclination / Shape**

- 4:1 or flatter (25% / 14°)       Up to 3:1 (33% / 18.5°)       Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)       Up to 0.5:1 (200% / 63.5°)       Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE (describe):**

TOP  
Sheet Drainage.

FACE  
Sheet Drainage.

BOTTOM  
Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY (describe, positions, thicknesses, types):**

TOP  
Sand, silt, and clay.

FACE  
Sand, silt, and clay.

BOTTOM  
Sand, silt, and clay.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

Stream.

PONDS, BAYS, LAKES

None.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Densely vegetated with grass and mature trees.

FACE

Densely vegetated with grass and mature trees.

BOTTOM

Densely vegetated with grass and mature trees.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

None.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

Scour along stream edges, but not bottom of slope.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

Leaning tree.

Site Location: Broccolini Slope 01  
 Property Owner: Broccolini  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/28  
 Weather: Partly cloudy

1. SLOPE INSPECTION			Rating Value	
	Degrees	Horiz. : Vert.		
a)	18 or less	3 : 1 or flatter	0	<input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6	<input checked="" type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16	<input type="checkbox"/>
2. SOIL STRATIGRAPHY				
a)	Shale, Limestone, Granite (Bedrock)		0	<input type="checkbox"/>
b)	Sand, Gravel		6	<input type="checkbox"/>
c)	Glacial Till		9	<input checked="" type="checkbox"/>
d)	Clay, Silt		12	<input type="checkbox"/>
e)	Fill		16	<input type="checkbox"/>
f)	Leda Clay		24	<input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE				
a)	None or Near bottom only		0	<input checked="" type="checkbox"/>
b)	Near mid-slope only		6	<input type="checkbox"/>
c)	Near crest only or from several levels		12	<input type="checkbox"/>
4. SLOPE HEIGHT				
a)	2 metres or less		0	<input type="checkbox"/>
b)	2.1 to 5 metres		2	<input type="checkbox"/>
c)	5.1 to 10 metres		4	<input type="checkbox"/>
d)	Greater than 10 metres		8	<input checked="" type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE				
a)	Well vegetated; heavy shrubs or forested with mature trees		0	<input checked="" type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4	<input type="checkbox"/>
c)	No vegetation; bare		8	<input type="checkbox"/>
6. TABLELAND DRAINAGE				
a)	Tableland flat, no apparent drainage over slope		0	<input type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2	<input checked="" type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4	<input type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE				
a)	15 metres or more from slope toe		0	<input type="checkbox"/>
b)	Less than 15 metres from slope toe		6	<input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY				
a)	No		0	<input checked="" type="checkbox"/>
b)	Yes		6	<input type="checkbox"/>
			<b>TOTAL</b>	
			<b>31</b>	
SLOPE INSTABILITY RATING	RATING VALUE TOTAL	INVESTIGATION REQUIREMENTS		

- |    |                    |       |  |
|----|--------------------|-------|--|
| 1. | Low potential      | <24   | Site inspection only, confirmation, report letter.                 |
| 2. | Slight potential   | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. | Moderate potential | >35   | Boreholes, piezometers, lab tests, surveying, detailed report.     |

**NOTES:**

a) Choose only one from each category; compare total rating value with above requirements.

b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** Broccolini Slope 02  
**Inspection Date:** 2024/03/28  
**Inspected By (name):** IB/FH  
**Weather (circle):**  sunny  partly cloudy  overcast  
 clear  fog  rain  snow  
**Est. Air Temp. (°C):** 8

calm  breezy  windy  
 cold  cool  warm  hot

**Site Location / Directions (describe main roads, features):**  
 West of Bramalea Road, south of Banty's Roost Golf Club, Caledon, ON.

**Site Location Sketch:**

**Property Ownership (name, address, phone):**  
 Broccolini

**Legal Description:**  
 Lot 20  
 Concession 4  
 Township Caledon  
 County Peel

**Watershed:** Humber River  
**Governing Regional Body:** Caledon  
**Governing Conservation Authority:** TRCA

**Current Land Use (circle and describe):**

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites



**SLOPE DATA**

**Height**

- 3 - 6 m       6 - 10 m       10 - 15 m       15 - 20 m  
 20 - 25 m       25 - 30 m       >30 m

Estimated height (m): 12

**Inclination / Shape**

- 4:1 or flatter (25% / 14°)       Up to 3:1 (33% / 18.5°)       Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)       Up to 0.5:1 (200% / 63.5°)       Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE (describe):**

TOP

Sheet Drainage.

FACE

Sheet Drainage.

BOTTOM

Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY (describe, positions, thicknesses, types):**

TOP

Sand, silt, and clay.

FACE

Sand, silt, and clay.

BOTTOM

Sand, silt, and clay.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

Stream.

PONDS, BAYS, LAKES

None.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Densely vegetated with grass and mature trees.

FACE

Densely vegetated with grass and mature trees.

BOTTOM

Densely vegetated with grass and mature trees.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

None.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

Scour along stream edges, but not bottom of slope.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.

Site Location: Broccolini Slope 02  
 Property Owner: Broccolini  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/28  
 Weather: Partly cloudy

1. SLOPE INSPECTION			Rating Value	
	Degrees	Horiz. : Vert.		
a)	18 or less	3 : 1 or flatter	0	<input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6	<input checked="" type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16	<input type="checkbox"/>
2. SOIL STRATIGRAPHY				
a)	Shale, Limestone, Granite (Bedrock)		0	<input type="checkbox"/>
b)	Sand, Gravel		6	<input type="checkbox"/>
c)	Glacial Till		9	<input checked="" type="checkbox"/>
d)	Clay, Silt		12	<input type="checkbox"/>
e)	Fill		16	<input type="checkbox"/>
f)	Leda Clay		24	<input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE				
a)	None or Near bottom only		0	<input checked="" type="checkbox"/>
b)	Near mid-slope only		6	<input type="checkbox"/>
c)	Near crest only or from several levels		12	<input type="checkbox"/>
4. SLOPE HEIGHT				
a)	2 metres or less		0	<input type="checkbox"/>
b)	2.1 to 5 metres		2	<input type="checkbox"/>
c)	5.1 to 10 metres		4	<input type="checkbox"/>
d)	Greater than 10 metres		8	<input checked="" type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE				
a)	Well vegetated; heavy shrubs or forested with mature trees		0	<input checked="" type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4	<input type="checkbox"/>
c)	No vegetation; bare		8	<input type="checkbox"/>
6. TABLELAND DRAINAGE				
a)	Tableland flat, no apparent drainage over slope		0	<input type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2	<input type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4	<input checked="" type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE				
a)	15 metres or more from slope toe		0	<input type="checkbox"/>
b)	Less than 15 metres from slope toe		6	<input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY				
a)	No		0	<input checked="" type="checkbox"/>
b)	Yes		6	<input type="checkbox"/>
			<b>TOTAL</b>	
			<b>33</b>	
SLOPE INSTABILITY RATING	RATING VALUE TOTAL	INVESTIGATION REQUIREMENTS		

- |    |                    |       |  |
|----|--------------------|-------|--|
| 1. | Low potential      | <24   | Site inspection only, confirmation, report letter.                 |
| 2. | Slight potential   | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. | Moderate potential | >35   | Boreholes, piezometers, lab tests, surveying, detailed report.     |

**NOTES:**

a) Choose only one from each category; compare total rating value with above requirements.

b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** Broccolini Slope 03  
**Inspection Date:** 2024/03/28  
**Inspected By (name):** IB/FH  
**Weather (circle):**  sunny  partly cloudy  overcast  
 clear  fog  rain  snow  
**Est. Air Temp. (°C):** 8

calm  breezy  windy  
 cold  cool  warm  hot

**Site Location / Directions (describe main roads, features):**  
 West of Bramalea Road, south of Banty's Roost Golf Club, Caledon, ON.

**Site Location Sketch:**

**Property Ownership (name, address, phone):**  
 Broccolini

**Legal Description:**

Lot	<u>20</u>
Concession	<u>4</u>
Township	<u>Caledon</u>
County	<u>Peel</u>

**Watershed:** Humber River  
**Governing Regional Body:** Caledon  
**Governing Conservation Authority:** TRCA

**Current Land Use (circle and describe):**

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites



**SLOPE DATA**

**Height**

- 3 - 6 m     6 - 10 m     10 - 15 m     15 - 20 m  
 20 - 25 m     25 - 30 m     >30 m  
Estimated height (m):   3

**Inclination / Shape**

- 4:1 or flatter (25% / 14°)     Up to 3:1 (33% / 18.5°)     Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)     Up to 0.5:1 (200% / 63.5°)     Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP  
Sheet Drainage.

FACE  
Sheet Drainage.

BOTTOM  
Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP  
Topsoil from active farmland.

FACE  
Sand, silt, and clay.

BOTTOM  
Sand, silt, and clay.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

Stream.

PONDS, BAYS, LAKES

None.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Densely vegetated with grass and small trees.

FACE

Densely vegetated with grass and small trees.

BOTTOM

Densely vegetated with grass and small trees.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

None.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

Scour along stream edges, but not bottom of slope.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.

Site Location: Broccolini Slope 03  
 Property Owner: Broccolini  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/28  
 Weather: Partly cloudy

1. SLOPE INSPECTION			Rating Value	
	Degrees	Horiz. : Vert.		
a)	18 or less	3 : 1 or flatter	0	<input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6	<input type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16	<input checked="" type="checkbox"/>
2. SOIL STRATIGRAPHY				
a)	Shale, Limestone, Granite (Bedrock)		0	<input type="checkbox"/>
b)	Sand, Gravel		6	<input type="checkbox"/>
c)	Glacial Till		9	<input checked="" type="checkbox"/>
d)	Clay, Silt		12	<input type="checkbox"/>
e)	Fill		16	<input type="checkbox"/>
f)	Leda Clay		24	<input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE				
a)	None or Near bottom only		0	<input checked="" type="checkbox"/>
b)	Near mid-slope only		6	<input type="checkbox"/>
c)	Near crest only or from several levels		12	<input type="checkbox"/>
4. SLOPE HEIGHT				
a)	2 metres or less		0	<input type="checkbox"/>
b)	2.1 to 5 metres		2	<input checked="" type="checkbox"/>
c)	5.1 to 10 metres		4	<input type="checkbox"/>
d)	Greater than 10 metres		8	<input type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE				
a)	Well vegetated; heavy shrubs or forested with mature trees		0	<input checked="" type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4	<input type="checkbox"/>
c)	No vegetation; bare		8	<input type="checkbox"/>
6. TABLELAND DRAINAGE				
a)	Tableland flat, no apparent drainage over slope		0	<input checked="" type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2	<input type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4	<input type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE				
a)	15 metres or more from slope toe		0	<input type="checkbox"/>
b)	Less than 15 metres from slope toe		6	<input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY				
a)	No		0	<input checked="" type="checkbox"/>
b)	Yes		6	<input type="checkbox"/>

<b>SLOPE INSTABILITY RATING</b>	<b>RATING VALUE TOTAL</b>	<b>INVESTIGATION REQUIREMENTS</b>	<b>TOTAL 33</b>
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1.	Low potential	<24	Site inspection only, confirmation, report letter.
2.	Slight potential	25-35	Site inspection and surveying, preliminary study, detailed report.
3.	Moderate potential	>35	Boreholes, piezometers, lab tests, surveying, detailed report.

**NOTES:**

a) Choose only one from each category; compare total rating value with above requirements.

b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** DG1 Slope 01  
**Inspection Date:** 2024/03/27  
**Inspected By (name):** IB/FH  
**Weather (circle):**     sunny    partly cloudy    overcast  
                                   clear    fog    rain    snow  
**Est. Air Temp. (°C):**    6

calm    breezy    windy  
 cold    cool    warm    hot

**Site Location / Directions** (describe main roads, features):

South-east of Old School Rd and Bramalea Rd.

**Site Location Sketch:**

**Property Ownership** (name, address, phone):

DG Group (Sentinel Holdings)

**Legal Description:**

Lot                    22  
 Concession        5  
 Township          Caledon  
 County              Peel

**Watershed:** Humber River

**Governing Regional Body:** Caledon

**Governing Conservation Authority:** TRCA

**Current Land Use** (circle and describe):

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites



**SLOPE DATA**

**Height**

- 3 - 6 m       6 - 10 m       10 - 15 m       15 - 20 m  
 20 - 25 m       25 - 30 m       >30 m

Estimated height (m): 5

**Inclination / Shape**

- 4:1 or flatter (25% / 14°)       Up to 3:1 (33% / 18.5°)       Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)       Up to 0.5:1 (200% / 63.5°)       Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP

Sheet Drainage.

FACE

Sheet Drainage.

BOTTOM

Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP

Topsoil, well vegetated with mature trees.

FACE

Topsoil, well vegetated with mature trees.

BOTTOM

Grassland, well vegetated.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

Small stream.

PONDS, BAYS, LAKES

None.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Densely vegetated with grass and mature trees.

FACE

Densely vegetated with grass and mature trees.

BOTTOM

Well vegetated with grasses.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

None.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

Scour along stream edge.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.

Site Location: DG1 Slope 01  
 Property Owner: DG Group (Sentinel Holdings)  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/27  
 Weather: Cloudy

1. SLOPE INSPECTION			Rating Value
	Degrees	Horiz. : Vert.	
a)	18 or less	3 : 1 or flatter	0 <input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6 <input type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16 <input checked="" type="checkbox"/>
2. SOIL STRATIGRAPHY			
a)	Shale, Limestone, Granite (Bedrock)		0 <input type="checkbox"/>
b)	Sand, Gravel		6 <input type="checkbox"/>
c)	Glacial Till		9 <input checked="" type="checkbox"/>
d)	Clay, Silt		12 <input type="checkbox"/>
e)	Fill		16 <input type="checkbox"/>
f)	Leda Clay		24 <input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE			
a)	None or Near bottom only		0 <input checked="" type="checkbox"/>
b)	Near mid-slope only		6 <input type="checkbox"/>
c)	Near crest only or from several levels		12 <input type="checkbox"/>
4. SLOPE HEIGHT			
a)	2 metres or less		0 <input type="checkbox"/>
b)	2.1 to 5 metres		2 <input checked="" type="checkbox"/>
c)	5.1 to 10 metres		4 <input type="checkbox"/>
d)	Greater than 10 metres		8 <input type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE			
a)	Well vegetated; heavy shrubs or forested with mature trees		0 <input type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4 <input checked="" type="checkbox"/>
c)	No vegetation; bare		8 <input type="checkbox"/>
6. TABLELAND DRAINAGE			
a)	Tableland flat, no apparent drainage over slope		0 <input checked="" type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2 <input type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4 <input type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE			
a)	15 metres or more from slope toe		0 <input type="checkbox"/>
b)	Less than 15 metres from slope toe		6 <input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY			
a)	No		0 <input checked="" type="checkbox"/>
b)	Yes		6 <input type="checkbox"/>
			<b>TOTAL</b>
			<b>37</b>
SLOPE INSTABILITY RATING	RATING VALUE TOTAL	INVESTIGATION REQUIREMENTS	

- |    |                    |       |  |
|----|--------------------|-------|--|
| 1. | Low potential      | <24   | Site inspection only, confirmation, report letter.                 |
| 2. | Slight potential   | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. | Moderate potential | >35   | Boreholes, piezometers, lab tests, surveying, detailed report.     |

**NOTES:**

a) Choose only one from each category; compare total rating value with above requirements.

b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** DG2 Slope 01  
**Inspection Date:** 2024/03/27  
**Inspected By (name):** IB/FH  
**Weather (circle):**     sunny    partly cloudy    overcast  
                                   clear    fog    rain    snow  
**Est. Air Temp. (°C):**    6

calm    breezy    windy  
 cold    cool    warm    hot

**Site Location / Directions (describe main roads, features):**  
 East of Bramalea Road between Old School Road and Mayfield Road.

**Site Location Sketch:**

**Property Ownership (name, address, phone):**  
 DG Group

**Legal Description:**

Lot                    21  
 Concession        5  
 Township          Caledon  
 County              Peel

**Watershed:** Humber River

**Governing Regional Body:** Caledon

**Governing Conservation Authority:** TRCA

**Current Land Use (circle and describe):**

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites



**SLOPE DATA**

**Height**

- 3 - 6 m       6 - 10 m       10 - 15 m       15 - 20 m  
 20 - 25 m       25 - 30 m       >30 m  
Estimated height (m): 5

**Inclination / Shape**

- 4:1 or flatter (25% / 14°)       Up to 3:1 (33% / 18.5°)       Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)       Up to 0.5:1 (200% / 63.5°)       Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP

Sheet Drainage.

FACE

Sheet Drainage.

BOTTOM

Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP

Topsoil, well vegetated with mature trees.

FACE

Topsoil, well vegetated with mature trees.

BOTTOM

Grassland, well vegetated.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

Small stream.

PONDS, BAYS, LAKES

None.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Actively farmed area with some trees.

FACE

Densely vegetated with grass and mature trees.

BOTTOM

Well vegetated with grasses.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

Fencing.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

Scour along stream edge.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.

Site Location: DG2 Slope 01  
 Property Owner: DG Group  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/27  
 Weather: Cloudy

1. SLOPE INSPECTION			Rating Value	
	Degrees	Horiz. : Vert.		
a)	18 or less	3 : 1 or flatter	0	<input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6	<input checked="" type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16	<input type="checkbox"/>
2. SOIL STRATIGRAPHY				
a)	Shale, Limestone, Granite (Bedrock)		0	<input type="checkbox"/>
b)	Sand, Gravel		6	<input type="checkbox"/>
c)	Glacial Till		9	<input checked="" type="checkbox"/>
d)	Clay, Silt		12	<input type="checkbox"/>
e)	Fill		16	<input type="checkbox"/>
f)	Leda Clay		24	<input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE				
a)	None or Near bottom only		0	<input checked="" type="checkbox"/>
b)	Near mid-slope only		6	<input type="checkbox"/>
c)	Near crest only or from several levels		12	<input type="checkbox"/>
4. SLOPE HEIGHT				
a)	2 metres or less		0	<input type="checkbox"/>
b)	2.1 to 5 metres		2	<input checked="" type="checkbox"/>
c)	5.1 to 10 metres		4	<input type="checkbox"/>
d)	Greater than 10 metres		8	<input type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE				
a)	Well vegetated; heavy shrubs or forested with mature trees		0	<input checked="" type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4	<input type="checkbox"/>
c)	No vegetation; bare		8	<input type="checkbox"/>
6. TABLELAND DRAINAGE				
a)	Tableland flat, no apparent drainage over slope		0	<input checked="" type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2	<input type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4	<input type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE				
a)	15 metres or more from slope toe		0	<input checked="" type="checkbox"/>
b)	Less than 15 metres from slope toe		6	<input type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY				
a)	No		0	<input checked="" type="checkbox"/>
b)	Yes		6	<input type="checkbox"/>
			<b>TOTAL</b>	
			<u>17</u>	
SLOPE INSTABILITY RATING	RATING VALUE TOTAL	INVESTIGATION REQUIREMENTS		

- 1. Low potential <24 Site inspection only, confirmation, report letter.
- 2. Slight potential 25-35 Site inspection and surveying, preliminary study, detailed report.
- 3. Moderate potential >35 Boreholes, piezometers, lab tests, surveying, detailed report.

**NOTES:** a) Choose only one from each category; compare total rating value with above requirements.  
 b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.





**SLOPE DATA**

**Height**

- 3 - 6 m       6 - 10 m       10 - 15 m       15 - 20 m  
 20 - 25 m       25 - 30 m       >30 m

Estimated height (m): 10-12

**Inclination / Shape**

- 4:1 or flatter (25% / 14°)       Up to 3:1 (33% / 18.5°)       Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)       Up to 0.5:1 (200% / 63.5°)       Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP

Sheet Drainage.

FACE

Sheet Drainage.

BOTTOM

Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP

Topsoil, well vegetated with mature trees.

FACE

Topsoil, well vegetated with mature trees.

BOTTOM

Grassland, well vegetated.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

Small stream.

PONDS, BAYS, LAKES

None.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Densely vegetated with grass and mature trees.

FACE

Densely vegetated with grass and mature trees.

BOTTOM

Well vegetated with grasses.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

Fencing. There is a dwelling on the tableland back from the slope.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

Scour along stream edge.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.

Site Location: DG3 Slope 01  
 Property Owner: DG Group  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/27  
 Weather: Cloudy

1. SLOPE INSPECTION			Rating Value	
	Degrees	Horiz. : Vert.		
a)	18 or less	3 : 1 or flatter	0	<input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6	<input checked="" type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16	<input type="checkbox"/>
2. SOIL STRATIGRAPHY				
a)	Shale, Limestone, Granite (Bedrock)		0	<input type="checkbox"/>
b)	Sand, Gravel		6	<input type="checkbox"/>
c)	Glacial Till		9	<input checked="" type="checkbox"/>
d)	Clay, Silt		12	<input type="checkbox"/>
e)	Fill		16	<input type="checkbox"/>
f)	Leda Clay		24	<input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE				
a)	None or Near bottom only		0	<input checked="" type="checkbox"/>
b)	Near mid-slope only		6	<input type="checkbox"/>
c)	Near crest only or from several levels		12	<input type="checkbox"/>
4. SLOPE HEIGHT				
a)	2 metres or less		0	<input type="checkbox"/>
b)	2.1 to 5 metres		2	<input type="checkbox"/>
c)	5.1 to 10 metres		4	<input type="checkbox"/>
d)	Greater than 10 metres		8	<input checked="" type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE				
a)	Well vegetated; heavy shrubs or forested with mature trees		0	<input checked="" type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4	<input type="checkbox"/>
c)	No vegetation; bare		8	<input type="checkbox"/>
6. TABLELAND DRAINAGE				
a)	Tableland flat, no apparent drainage over slope		0	<input type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2	<input type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4	<input checked="" type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE				
a)	15 metres or more from slope toe		0	<input checked="" type="checkbox"/>
b)	Less than 15 metres from slope toe		6	<input type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY				
a)	No		0	<input checked="" type="checkbox"/>
b)	Yes		6	<input type="checkbox"/>

<b>SLOPE INSTABILITY RATING</b>	<b>RATING VALUE TOTAL</b>	<b>INVESTIGATION REQUIREMENTS</b>	<b>TOTAL</b> <b>25</b>
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1.	Low potential	<24	Site inspection only, confirmation, report letter.
2.	Slight potential	25-35	Site inspection and surveying, preliminary study, detailed report.
3.	Moderate potential	>35	Boreholes, piezometers, lab tests, surveying, detailed report.

**NOTES:** a) Choose only one from each category; compare total rating value with above requirements.  
 b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** Mayfield Tullamore - DG4 Slope 1  
**Inspection Date:** May 30, 2024  
**Inspected By (name):** RW / FH  
**Weather (circle):**  sunny  partly cloudy  overcast  
 clear  fog  rain  snow  
**Est. Air Temp. (°C):** 25 C

calm  breezy  windy  
 cold  cool  warm  hot

**Site Location / Directions (describe main roads, features):**

Northeast corner of DG Group property, east of Bramalea Road, North of Mayfield Road and west of Torbram Road.

**Site Location Sketch:**

**Property Ownership (name, address, phone):**

DG Group

**Legal Description:**

Lot \_\_\_\_\_  
 Concession \_\_\_\_\_  
 Township \_\_\_\_\_  
 County \_\_\_\_\_

**Watershed:** West Humber River

**Governing Regional Body:** Town of Caledon

**Governing Conservation Authority:** TRCA

**Current Land Use (circle and describe):**

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites

**SLOPE DATA****Height**

3 - 6 m       6 - 10 m       10 - 15 m       15 - 20 m  
 20 - 25 m       25 - 30 m       >30 m  
Estimated height (m): 12 m

**Inclination / Shape**

4:1 or flatter (25% / 14°)       Up to 3:1 (33% / 18.5°)       Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)       Up to 0.5:1 (200% / 63.5°)       Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP

Two distinct erosion gullies were observed on site, extending from the tableland to the bottom of the slope. The gullies appear to originate from tile drains actively discharging water. Both gullies extend back into the tableland and have over-steepened sidewalls with exposed roots and active erosion.

FACE

See above

BOTTOM

See above

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP

Hard clayey silt glacial till.

FACE

Hard clayey silt glacial till.

BOTTOM

Hard clayey silt glacial till.



**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

Two drainage gullies down the slope face.

STREAMS, CREEKS, RIVERS

West Humber River flows at the slope toe.

PONDS, BAYS, LAKES

SPRINGS, SEEPS, MARSHY GROUND

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Slope crest well vegetated with mature trees, and then farmland further back on the tableland.

FACE

Mostly well vegetated with mature trees. The slope failure area contains only sparse grasses. Fallen trees in the slope failure area.

BOTTOM

Mostly well vegetated with mature trees. The slope failure area contains only sparse grasses.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

None observed.

FACE

None observed.

BOTTOM

None observed.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

Erosion gullies extend down the slope face. Both gullies extend back into the tableland and have over-steepened sidewalls with exposed roots and active erosion.

FACE

Erosion gullies extend down the slope face. Both gullies extend back into the tableland and have over-steepened sidewalls with exposed roots and active erosion.

BOTTOM

Active slope toe erosion from Humber River which is adjacent to the slope toe.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

A large rotational, bowl-shaped slope failure was observed extending from the top to bottom of the slope, expected to be the result of toe erosion and downcutting undermining the slope. The scarp was near-vertical. Fallen / tilting trees in the failure area.

FACE

A large rotational, bowl-shaped slope failure was observed extending from the top to bottom of the slope, expected to be the result of toe erosion and downcutting undermining the slope. The scarp was near-vertical. Fallen / tilting trees in the failure area.

BOTTOM

A large rotational, bowl-shaped slope failure was observed extending from the top to bottom of the slope, expected to be the result of toe erosion and downcutting undermining the slope. The scarp was near-vertical. Fallen / tilting trees in the failure area.

Site Location: DG4 Slope 1  
 Property Owner: DG Group  
 Inspected By: RW and FH

File No: 2400278  
 Inspection Date: May 30, 2024  
 Weather: Sunny, hot.

1. SLOPE INSPECTION			Rating Value
	Degrees	Horiz. : Vert.	
a)	18 or less	3 : 1 or flatter	0 <input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6 <input type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16 <input checked="" type="checkbox"/>
2. SOIL STRATIGRAPHY			
a)	Shale, Limestone, Granite (Bedrock)		0 <input type="checkbox"/>
b)	Sand, Gravel		6 <input type="checkbox"/>
c)	Glacial Till		9 <input checked="" type="checkbox"/>
d)	Clay, Silt		12 <input type="checkbox"/>
e)	Fill		16 <input type="checkbox"/>
f)	Leda Clay		24 <input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE			
a)	None or Near bottom only		0 <input checked="" type="checkbox"/>
b)	Near mid-slope only		6 <input type="checkbox"/>
c)	Near crest only or from several levels		12 <input type="checkbox"/>
4. SLOPE HEIGHT			
a)	2 metres or less		0 <input type="checkbox"/>
b)	2.1 to 5 metres		2 <input type="checkbox"/>
c)	5.1 to 10 metres		4 <input type="checkbox"/>
d)	Greater than 10 metres		8 <input checked="" type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE			
a)	Well vegetated; heavy shrubs or forested with mature trees		0 <input checked="" type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4 <input type="checkbox"/>
c)	No vegetation; bare		8 <input type="checkbox"/>
6. TABLELAND DRAINAGE			
a)	Tableland flat, no apparent drainage over slope		0 <input type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2 <input type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4 <input checked="" type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE			
a)	15 metres or more from slope toe		0 <input type="checkbox"/>
b)	Less than 15 metres from slope toe		6 <input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY			
a)	No		0 <input type="checkbox"/>
b)	Yes		6 <input checked="" type="checkbox"/>
			<b>TOTAL</b>
<b>SLOPE INSTABILITY RATING</b>		<b>RATING VALUE TOTAL</b>	<b>49</b>
<b>INVESTIGATION REQUIREMENTS</b>			

- |    |                    |       |  |
|----|--------------------|-------|--|
| 1. | Low potential      | <24   | Site inspection only, confirmation, report letter.                 |
| 2. | Slight potential   | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. | Moderate potential | >35   | Boreholes, piezometers, lab tests, surveying, detailed report.     |

**NOTES:**

a) Choose only one from each category; compare total rating value with above requirements.

b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** TACC Slope 01  
**Inspection Date:** 2024/03/27  
**Inspected By (name):** IB/FH  
**Weather (circle):**     sunny    partly cloudy    overcast  
                                   clear    fog    rain    snow  
**Est. Air Temp. (°C):**    6

calm    breezy    windy  
 cold    cool    warm    hot

**Site Location / Directions** (describe main roads, features):

South-east of Old School Rd and Bramalea Rd. Slope inspection along watercourse, south of 5061 Old School Road, Caledon.

**Site Location Sketch:**

**Property Ownership** (name, address, phone):

TACC Development

**Legal Description:**

Lot                            22  
 Concession                5  
 Township                  Caledon  
 County                      Peel

**Watershed:** Humber River

**Governing Regional Body:** Caledon

**Governing Conservation Authority:** TRCA

**Current Land Use** (circle and describe):

- Vacant – Field, bush, woods, forest, wilderness, tundra
- Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools
- Active – Habitable structures, residential, commercial, industrial, warehousing, storage
- Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites

**SLOPE DATA**

**Height**

- 3 - 6 m     6 - 10 m     10 - 15 m     15 - 20 m  
 20 - 25 m     25 - 30 m     >30 m

Estimated height (m):   -6 - 8  

**Inclination / Shape**

- 4:1 or flatter (25% / 14°)     Up to 3:1 (33% / 18.5°)     Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)     Up to 0.5:1 (200% / 63.5°)     Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP  
Sheet Drainage.

FACE  
Sheet Drainage.

BOTTOM  
Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP  
Topsoil, farmland, some trees.

FACE  
Topsoil, well vegetated with mature trees.

BOTTOM  
Grassland, well vegetated.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

Small stream.

PONDS, BAYS, LAKES

None.

SPRINGS, SEEPS, MARSHY GROUND

Potential wetland during springtime.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Actively farmed area with some trees.

FACE

Densely vegetated with grass and mature trees.

BOTTOM

Well vegetated with grasses.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

None.

FACE

None.

BOTTOM

None.



**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

None.

FACE

None.

BOTTOM

None.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.

Site Location: TACC Slope 01  
 Property Owner: TACC Developments  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/27  
 Weather: Cloudy

1. SLOPE INSPECTION			Rating Value	
	Degrees	Horiz. : Vert.		
a)	18 or less	3 : 1 or flatter	0	<input checked="" type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6	<input type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16	<input type="checkbox"/>
2. SOIL STRATIGRAPHY				
a)	Shale, Limestone, Granite (Bedrock)		0	<input type="checkbox"/>
b)	Sand, Gravel		6	<input checked="" type="checkbox"/>
c)	Glacial Till		9	<input checked="" type="checkbox"/>
d)	Clay, Silt		12	<input checked="" type="checkbox"/>
e)	Fill		16	<input type="checkbox"/>
f)	Leda Clay		24	<input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE				
a)	None or Near bottom only		0	<input checked="" type="checkbox"/>
b)	Near mid-slope only		6	<input type="checkbox"/>
c)	Near crest only or from several levels		12	<input type="checkbox"/>
4. SLOPE HEIGHT				
a)	2 metres or less		0	<input type="checkbox"/>
b)	2.1 to 5 metres		2	<input type="checkbox"/>
c)	5.1 to 10 metres		4	<input checked="" type="checkbox"/>
d)	Greater than 10 metres		8	<input type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE				
a)	Well vegetated; heavy shrubs or forested with mature trees		0	<input checked="" type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4	<input type="checkbox"/>
c)	No vegetation; bare		8	<input type="checkbox"/>
6. TABLELAND DRAINAGE				
a)	Tableland flat, no apparent drainage over slope		0	<input checked="" type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2	<input type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4	<input type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE				
a)	15 metres or more from slope toe		0	<input type="checkbox"/>
b)	Less than 15 metres from slope toe		6	<input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY				
a)	No		0	<input checked="" type="checkbox"/>
b)	Yes		6	<input type="checkbox"/>
			<b>TOTAL</b>	
			<b>22</b>	
SLOPE INSTABILITY RATING	RATING VALUE TOTAL	INVESTIGATION REQUIREMENTS		

1. Low potential <24 Site inspection only, confirmation, report letter.

2. Slight potential 25-35 Site inspection and surveying, preliminary study, detailed report.

3. Moderate potential >35 Boreholes, piezometers, lab tests, surveying, detailed report.

**NOTES:** a) Choose only one from each category; compare total rating value with above requirements.  
 b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

**File No:** 2400278  
**File Name:** TACC Slope 02  
**Inspection Date:** 2024/03/27  
**Inspected By (name):** IB/FH  
**Weather (circle):**  sunny  partly cloudy  overcast  
 clear  fog  rain  snow  
**Est. Air Temp. (°C):** 6

calm  breezy  windy  
 cold  cool  warm  hot

**Site Location / Directions (describe main roads, features):**  
 South-west of Old School Road and Torbram Road, south of 5317 Old School Rd, Caledon, ON.

**Site Location Sketch:**

**Property Ownership (name, address, phone):**  
 TACC Development

**Legal Description:**

Lot 22  
 Concession 5  
 Township Caledon  
 County Peel

**Watershed:** Humber River  
**Governing Regional Body:** Caledon  
**Governing Conservation Authority:** TRCA

**Current Land Use (circle and describe):**

Vacant – Field, bush, woods, forest, wilderness, tundra  
 Passive – Recreational parks, golf courses, non-habitable structures, buried utilities, swimming pools  
 Active – Habitable structures, residential, commercial, industrial, warehousing, storage  
 Infrastructure/Public Use – Stadiums, hospitals, schools, bridges, high voltage power lines, waste management sites

**SLOPE DATA****Height**

3 - 6 m     6 - 10 m     10 - 15 m     15 - 20 m  
 20 - 25 m     25 - 30 m     >30 m

Estimated height (m): 5.5

**Inclination / Shape**

4:1 or flatter (25% / 14°)     Up to 3:1 (33% / 18.5°)     Up to 2:1 (50% / 26.5°)  
 Up to 1:1 (100% / 45°)     Up to 0.5:1 (200% / 63.5°)     Steeper than 0.5:1 (>63.5°)

**SLOPE DRAINAGE** (describe):

TOP

Sheet Drainage.

FACE

Sheet Drainage.

BOTTOM

Sheet Drainage.

**SLOPE SOIL STRATIGRAPHY** (describe, positions, thicknesses, types):

TOP

Topsoil/farmland.

FACE

Grassland, well vegetated.

BOTTOM

Grassland, well vegetated.

**WATER COURSE FEATURES** (circle and describe):

SWALES, GULLIES, DITCHES, CHANNELS

None.

STREAMS, CREEKS, RIVERS

Stream.

PONDS, BAYS, LAKES

None.

SPRINGS, SEEPS, MARSHY GROUND

None.

**VEGETATION COVER** (grasses, weeds, shrubs, saplings, trees):

TOP

Actively farmed area.

FACE

Densely vegetated with grass and some small trees.

BOTTOM

Well vegetated with grasses.

**STRUCTURES** (buildings, walls, fences, sewers, roads, stairs, decks, towers):

TOP

None.

FACE

None.

BOTTOM

None.

**EROSION FEATURES** (scour, undercutting, bare areas, piping, rills, gully):

TOP

Some scour, slope right at bend of stream.

FACE

None.

BOTTOM

None.

**SLOPE SLIDE FEATURES** (tension cracks, scarps, slumps, bulges, grabens, ridges, bent trees):

TOP

None.

FACE

None.

BOTTOM

None.



Site Location: TACC Slope 02  
 Property Owner: TACC Development  
 Inspected By: IB/FH

File No: 2400278  
 Inspection Date: 2024/03/  
 Weather: Cloudy

1. SLOPE INSPECTION			Rating Value
	Degrees	Horiz. : Vert.	
a)	18 or less	3 : 1 or flatter	0 <input type="checkbox"/>
b)	18 to 26	2 : 1 to 3 : 1	6 <input type="checkbox"/>
c)	more than 26	steeper than 2 : 1	16 <input checked="" type="checkbox"/>
2. SOIL STRATIGRAPHY			
a)	Shale, Limestone, Granite (Bedrock)		0 <input type="checkbox"/>
b)	Sand, Gravel		6 <input type="checkbox"/>
c)	Glacial Till		9 <input checked="" type="checkbox"/>
d)	Clay, Silt		12 <input type="checkbox"/>
e)	Fill		16 <input type="checkbox"/>
f)	Leda Clay		24 <input type="checkbox"/>
3. SEEPAGE FROM SLOPE FACE			
a)	None or Near bottom only		0 <input checked="" type="checkbox"/>
b)	Near mid-slope only		6 <input type="checkbox"/>
c)	Near crest only or from several levels		12 <input type="checkbox"/>
4. SLOPE HEIGHT			
a)	2 metres or less		0 <input type="checkbox"/>
b)	2.1 to 5 metres		2 <input type="checkbox"/>
c)	5.1 to 10 metres		4 <input checked="" type="checkbox"/>
d)	Greater than 10 metres		8 <input type="checkbox"/>
5. VEGETATION COVER ON SLOPE FACE			
a)	Well vegetated; heavy shrubs or forested with mature trees		0 <input type="checkbox"/>
b)	Light vegetation; Mostly grass, weeds, occasional trees, shrubs		4 <input checked="" type="checkbox"/>
c)	No vegetation; bare		8 <input type="checkbox"/>
6. TABLELAND DRAINAGE			
a)	Tableland flat, no apparent drainage over slope		0 <input checked="" type="checkbox"/>
b)	Minor drainage over slope, no active erosion		2 <input type="checkbox"/>
c)	Drainage over slope, active erosion, gullies		4 <input type="checkbox"/>
7. PROXIMITY OF WATERCOURSE TO SLOPE TOE			
a)	15 metres or more from slope toe		0 <input type="checkbox"/>
b)	Less than 15 metres from slope toe		6 <input checked="" type="checkbox"/>
8. PREVIOUS LANDSLIDE ACTIVITY			
a)	No		0 <input checked="" type="checkbox"/>
b)	Yes		6 <input type="checkbox"/>
			<b>TOTAL</b>
			<b>39</b>
SLOPE INSTABILITY RATING	RATING VALUE TOTAL	INVESTIGATION REQUIREMENTS	

- |    |                    |       |  |
|----|--------------------|-------|--|
| 1. | Low potential      | <24   | Site inspection only, confirmation, report letter.                 |
| 2. | Slight potential   | 25-35 | Site inspection and surveying, preliminary study, detailed report. |
| 3. | Moderate potential | >35   | Boreholes, piezometers, lab tests, surveying, detailed report.     |

**NOTES:**

a) Choose only one from each category; compare total rating value with above requirements.

b) If there is a water body (stream, creek, river, pond, bay, lake) at the slope toe; the potential for toe erosion and undercutting should be evaluated in detail and, protection provided if required.

## **ENCLOSURE 2**



### **Site and Slope Photographs**

<p>☼ 253°W (M) ● 17 N 595665 4848911 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 28 Mar 2024 10:49:30</p>	<p><b><u>PHOTOGRAPH 1</u></b></p> <p><b>Description:</b> View of the water body and slope at Anatolia Slope 01.</p> <p>(GEI 2024)</p>
<p>☼ 151°SE (M) ● 17 N 595663 4848910 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 28 Mar 2024 10:49:40</p>	<p><b><u>PHOTOGRAPH 2</u></b></p> <p><b>Description:</b> Side view of the slope face and top of slope of Anatolia Slope 01.</p> <p>(GEI 2024)</p>



<p>☼ 46°NE (M) ● 17 N 595870 4848647 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 28 Mar 2024, 10:40:24</p>	<p><b>PHOTOGRAPH 3</b></p> <p><b>Description:</b> View across water body south of Anatolia Slope 02.</p> <p>(GEI 2024)</p>
<p>☼ 227°SW (M) ● 17 N 595871 4848647 ±13ft</p>  <p>2400278</p> <p>Mayfield Tullamore Landowner Group</p>	<p><b>PHOTOGRAPH 4</b></p> <p><b>Description:</b> View of top of slope near Anatolia Slope 02. Typical tableland across Anatolia site.</p> <p>(GEI 2024)</p>



<p>☼ 281°W (M) ● 17 N 595863 4848651 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 28 Mar 2024, 10:41:06</p>	<p><b>PHOTOGRAPH 5</b></p> <p><b>Description:</b> View of unconfined areas south of Anatolia Slope 02.</p> <p>(GEI 2024)</p>
<p>☼ 45°NE (M) ● 17 N 596247 4848527 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 28 Mar 2024, 10:31:11</p>	<p><b>PHOTOGRAPH 6</b></p> <p><b>Description:</b> View of pond near Anatolia Slope 03.</p> <p>(GEI 2024)</p>



<p>☼ 110°E (M) ● 17 N 596239 4848536 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 28 Mar 2024, 10:31:35</p>	<p><b>PHOTOGRAPH 7</b></p> <p><b>Description:</b> View of tableland near Anatolia Slope 03.</p> <p>(GEI 2024)</p>
<p>☼ 234°SW (M) ● 17 N 596248 4848529 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 28 Mar 2024, 10:31:17</p>	<p><b>PHOTOGRAPH 8</b></p> <p><b>Description:</b> View of top of slope near Anatolia Slope 03. Typical tableland across Anatolia site.</p> <p>(GEI 2024)</p>



<p>☼ 258°W (M) ● 17 N 596227 4848603 ±9ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 28 Mar 2024 11:01:06</p>	<p><b><u>PHOTOGRAPH 9</u></b></p> <p><b>Description:</b> View of the top of slope and slope face at Anatolia Slope 03.</p> <p>(GEI 2024)</p>
<p>☼ 279°W (M) ● 17 N 596676 4848575 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 28 Mar 2024 09:19:34</p>	<p><b><u>PHOTOGRAPH 10</u></b></p> <p><b>Description:</b> Floodplain and watercourse at Anatolia Slope 04.</p> <p>(GEI 2024)</p>





**PHOTOGRAPH 11**

**Description:**  
Floodplain and slope  
at Anatolia Slope 04.

(GEI 2024)



**PHOTOGRAPH 12**

**Description:**  
View of slope face of  
Anatolia Slope 04  
from top of slope.

(GEI 2024)

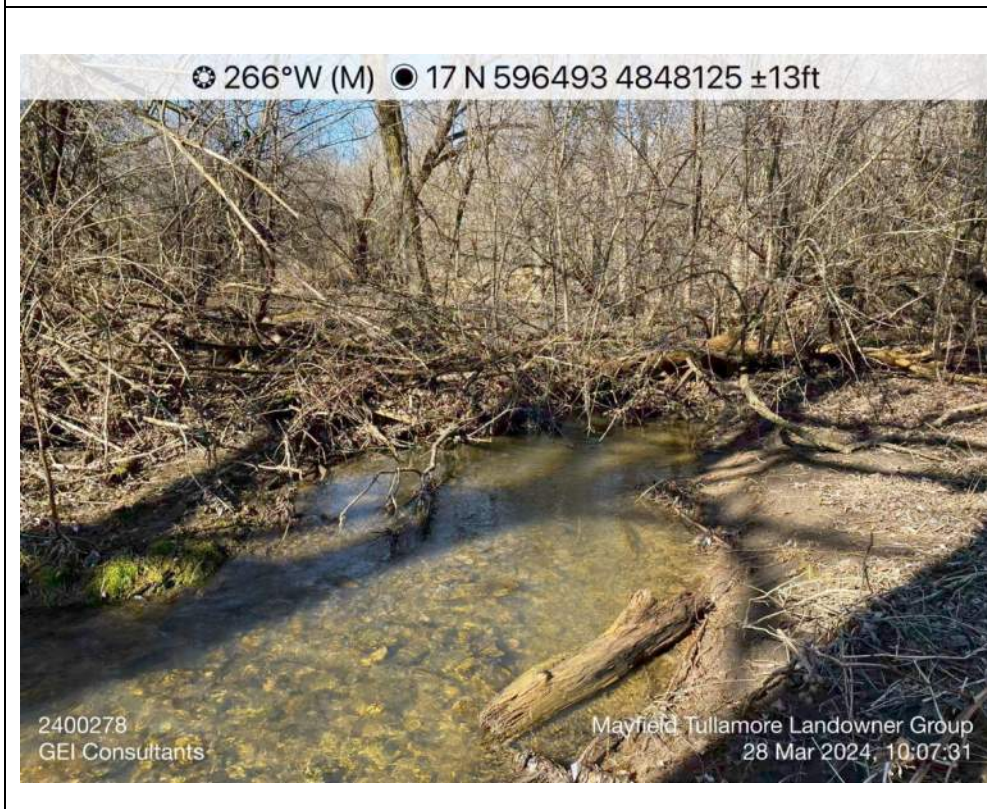




**PHOTOGRAPH 13**

**Description:**  
Golf Course club house at top of Anatolia Slope 04.

(GEI 2024)

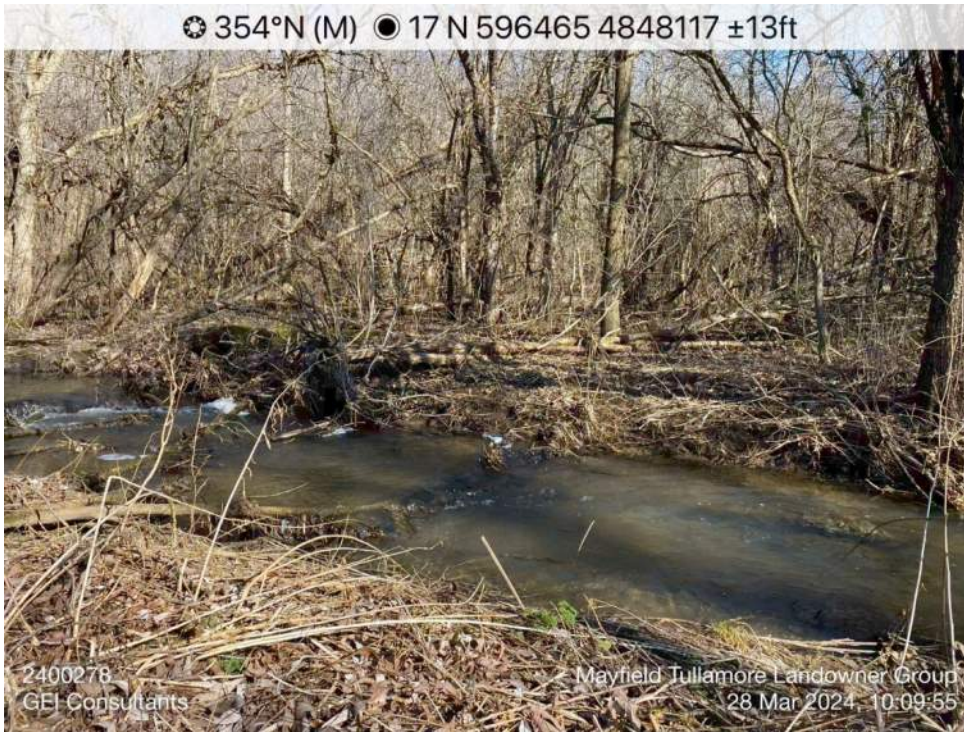


**PHOTOGRAPH 14**

**Description:**  
Water feature at Broccolini Slope 01.

(GEI 2024)





**PHOTOGRAPH 15**

**Description:**  
Water feature and  
floodplain at  
Broccolini Slope 01.

(GEI 2024)



**PHOTOGRAPH 16**

**Description:**  
Slope face from  
bottom of slope at  
Broccolini Slope 01.

(GEI 2024)





**PHOTOGRAPH 17**

**Description:**  
Top of northern slope  
at Broccolini Slope  
02.

(GEI 2024)



**PHOTOGRAPH 18**



**Description:**  
Face of northern  
slope from top of  
Broccolini Slope 02.

(GEI 2024)



<p>☼ 30°NE (M) ● 17 N 596669 4848378 ±16ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 28 Mar 2024, 09:36:49</p>	<p><b>PHOTOGRAPH 19</b></p> <p><b>Description:</b> Face of northern slope from side of Broccolini Slope 02.</p> <p>(GEI 2024)</p>
<p>☼ 272°W (M) ● 17 N 596734 4848324 ±4m</p>  <p>2400278 GEI Consultants</p> <p>Mayfield-Tullamore 28 Mar 2024, 09:47:21</p>	<p><b>PHOTOGRAPH 20</b></p> <p><b>Description:</b> Water feature at Broccolini Slope 02.</p> <p>(GEI 2024)</p>



<p>☼ 201°S (M) ● 17 N 596636 4848234 ±3m</p>  <p>2400278 GEI Consultants</p> <p>Mayfield-Tullamore 28 Mar 2024 09:53:35</p>	<p><b><u>PHOTOGRAPH 21</u></b></p> <p><b>Description:</b> Water feature and base of slope at Broccolini Slope 02. Evidence of scour at bank of water feature.</p> <p>(GEI 2024)</p>
<p>☼ 213°SW (M) ● 17 N 596730 4848303 ±4m</p>  <p>2400278 GEI Consultants</p> <p>Mayfield-Tullamore 28 Mar 2024 09:47:49</p>	<p><b><u>PHOTOGRAPH 22</u></b></p> <p><b>Description:</b> Floodplain at Broccolini Slope 02.</p> <p>(GEI 2024)</p>





**PHOTOGRAPH 23**

**Description:**  
Base and face of  
Broccolini Slope 02.

(GEI 2024)



**PHOTOGRAPH 24**

**Description:**  
Top of slope and  
tableland at  
Broccolini Slope 03.

(GEI 2024)

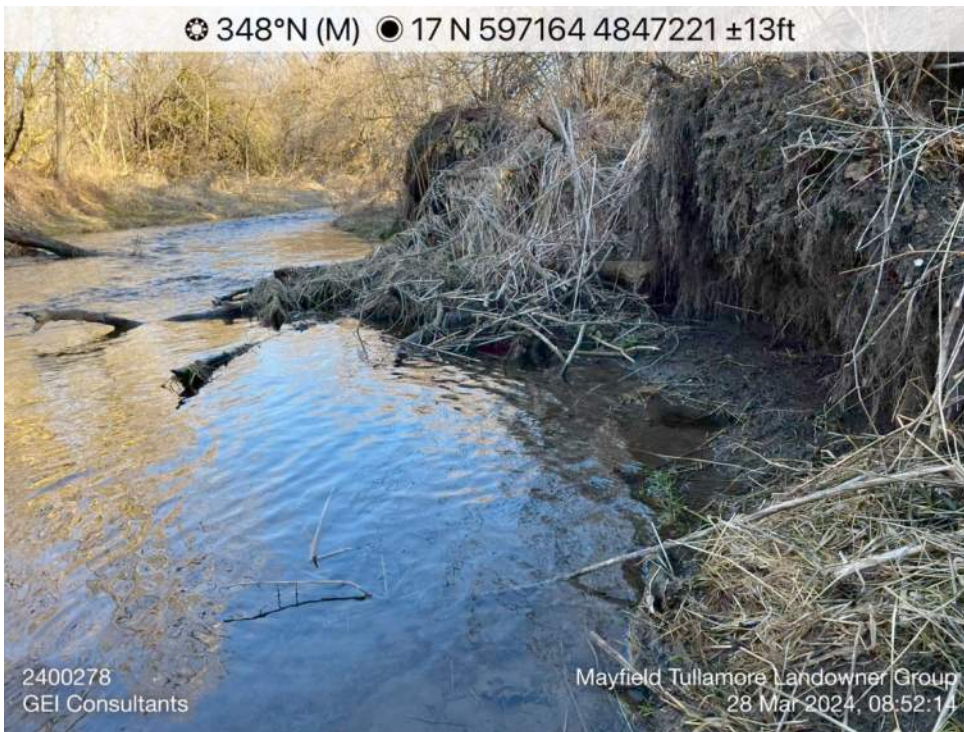




**PHOTOGRAPH 25**

**Description:**  
Water feature at  
Broccolini Slope 03.

(GEI 2024)



**PHOTOGRAPH 26**

**Description:**  
Scour at water edge  
of Broccolini Slope  
03.

(GEI 2024)





**PHOTOGRAPH 27**

**Description:**  
Unconfined area  
south of Broccolini  
Slope 03.

(GEI 2024)



**PHOTOGRAPH 28**



**Description:**  
Water feature and  
floodplain of TACC  
Slope 01.

(GEI 2024)



<p>☼ 262°W (M) ● 17 N 596297 4849404 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024 15:07:43</p>	<p><b><u>PHOTOGRAPH 29</u></b></p> <p><b>Description:</b> Eastern slope face from top of slope of TACC Slope 01.</p> <p>(GEI 2024)</p>
<p>☼ 258°W (M) ● 17 N 596269 4849397 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024 15:07:11</p>	<p><b><u>PHOTOGRAPH 30</u></b></p> <p><b>Description:</b> Western slope face from bottom of slope of TACC Slope 01.</p> <p>(GEI 2024)</p>



<p>☼ 262°W (M) ● 17 N 596297 4849405 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024 15:07:47</p>	<p><b>PHOTOGRAPH 31</b></p> <p><b>Description:</b> Top of eastern slope and tableland of TACC Slope 01.</p> <p>(GEI 2024)</p>
<p>☼ 101°E (M) ● 17 N 596224 4849331 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024 15:12:31</p>	<p><b>PHOTOGRAPH 32</b></p> <p><b>Description:</b> Top of western slope and tableland of TACC Slope 01.</p> <p>(GEI 2024)</p>



<p>☼ 244°SW (M) ● 17 N 596627 4849996 ±9ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024, 11:37:46</p>	<p><b>PHOTOGRAPH 33</b></p> <p><b>Description:</b> Water feature at TACC Slope 02. Scour at slope toe observed.</p> <p>(GEI 2024)</p>
<p>☼ 300°NW (M) ● 17 N 596630 4849993 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024, 11:38:27</p>	<p><b>PHOTOGRAPH 34</b></p> <p><b>Description:</b> Face of TACC Slope 02 from side of slope.</p> <p>(GEI 2024)</p>





**PHOTOGRAPH 35**

**Description:**  
Face of TACC Slope  
02 from top of slope.

(GEI 2024)



**PHOTOGRAPH 36**

**Description:**  
Top of slope and  
tableland of TACC  
Slope 02.

(GEI 2024)





**PHOTOGRAPH 37**

**Description:**  
Top of DG1 Slope 01.

(GEI 2024)



**PHOTOGRAPH 38**

**Description:**  
Water feature and  
base of slope at DG1  
Slope 01.

(GEI 2024)





**PHOTOGRAPH 39**

**Description:**  
Face of slope at DG1  
Slope 01 from top of  
slope.

(GEI 2024)



**PHOTOGRAPH 40**

**Description:**  
Face of slope at DG1  
Slope 01 from side of  
slope.

(GEI 2024)



<p>☼ 43°NE (M) ● 17 N 597120 4849979 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024 11:09:07</p>	<p><b>PHOTOGRAPH 41</b></p> <p><b>Description:</b> Water feature at DG2 Slope 01.</p> <p>(GEI 2024)</p>
<p>☼ 219°SW (M) ● 17 N 597123 4849974 ±19ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024 11:09:31</p>	<p><b>PHOTOGRAPH 42</b></p> <p><b>Description:</b> Floodplain at DG2 Slope 01.</p> <p>(GEI 2024)</p>





**PHOTOGRAPH 43**

**Description:**  
Bottom of slope at  
DG2 Slope 01.

(GEI 2024)



**PHOTOGRAPH 44**

**Description:**  
Face of slope from  
bottom of slope at  
DG2 Slope 01.

(GEI 2024)



<p>☼ 51°NE (M) ● 17 N 597098 4849940 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024, 11:11:53</p>	<p><b><u>PHOTOGRAPH 45</u></b></p> <p><b>Description:</b> Face of slope from top of slope at DG2 Slope 01.</p> <p>(GEI 2024)</p>
<p>☼ 51°NE (M) ● 17 N 597098 4849940 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024, 11:11:56</p>	<p><b><u>PHOTOGRAPH 46</u></b></p> <p><b>Description:</b> Top of slope and tableland at DG2 Slope 01.</p> <p>(GEI 2024)</p>





**PHOTOGRAPH 47**

**Description:**  
Water feature at DG3  
Slope 01. Scour  
along water edge.

(GEI 2024)



**PHOTOGRAPH 48**

**Description:**  
Floodplain at DG3  
Slope 01.

(GEI 2024)



<p>☼ 306°NW (M) ● 17 N 598360 4848715 ±13ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024 13:59:29</p>	<p><b>PHOTOGRAPH 49</b></p> <p><b>Description:</b> Bottom of slope at DG3 Slope 01.</p> <p>(GEI 2024)</p>
<p>☼ 230°SW (M) ● 17 N 598372 4848865 ±16ft</p>  <p>2400278 GEI Consultants</p> <p>Mayfield Tullamore Landowner Group 27 Mar 2024 14:08:13</p>	<p><b>PHOTOGRAPH 50</b></p> <p><b>Description:</b> Top of slope and tableland at DG3 Slope 01.</p> <p>(GEI 2024)</p>





**PHOTOGRAPH 51**

**Description:**

Large erosion gully cutting into the slope at DG4 slope. Flowing water within the gully observed from an outletting tile drain.

(GEI 2024)



**PHOTOGRAPH 52**

**Description:**

Large rotational slope failure at DG4 slope. Likely caused by active toe erosion from the river.

(GEI 2024)





**PHOTOGRAPH 53**

**Description:**  
West Humber River  
tributary near the  
DG4 slope.

(GEI 2024)



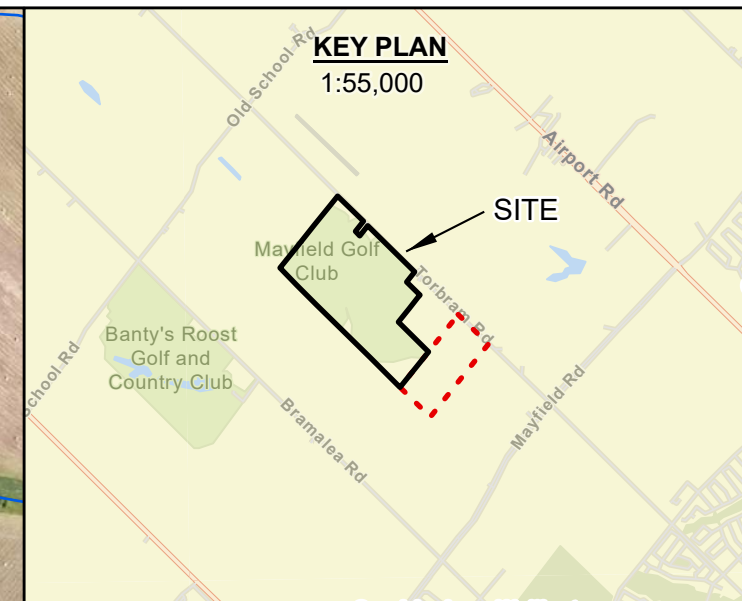
**PHOTOGRAPH 54**

**Description:**  
West Humber River  
tributary near the  
DG4 slope. Active  
erosion at water edge  
/ slope toe observed.

(GEI 2024)

## **Appendix E11 – Slope Stability Setback Plan Drawings – Properties 9 & 10 (GEMTEC)**





- Legend**
- TOP OF STABLE SLOPE
  - EROSION ACCESS ALLOWANCE
  - APPROXIMATE MAYFIELD GOLF COURSE LANDS BOUNDARY
  - WATERBODY
  - WATERCOURSE

- NOTES:**
1. All locations approximate
  2. Coordinate system: NAD 1983 UTM Zone 17N
  3. Geographic dataset source: Ontario GeoHub.
  4. Contains information licensed under the Open Government Licence – Ontario.
  5. Service Layer Credits: World Street Map: Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada



Drawing **EROSION HAZARD ANALYSIS (WHOLE SITE)**

Client: **MAYFIELD GOLF COURSE INC.**

Project **MAYFIELD GOLF COURSE REDEVELOPMENT  
12552 AND 12580 TORBRAM ROAD  
CALEDON, ONTARIO**

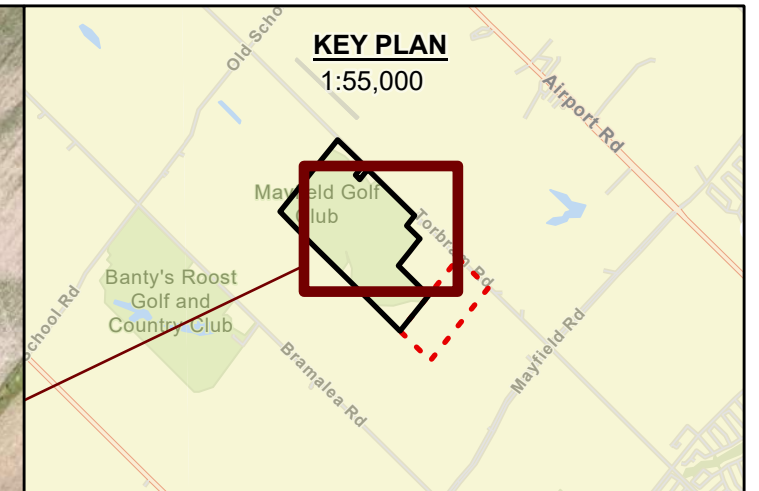
Drwn By:	S.J.	Chkd By:	D.M.F.
Project No.	101987.001	Revision No.	0
Date	JUNE 2024	<b>FIGURE:</b>	<b>1</b>

**GEMTEC**  
CONSULTING ENGINEERS AND SCIENTISTS

6695 Millcreek DR #7,  
Mississauga, ON L5N 5M4  
T: (416) 347-7427  
www.gemtec.ca  
graeme.skinner@gemtec.ca

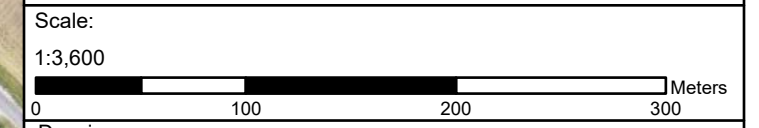
Satellite Imagery Provided by Google Earth Pro, (June, 2018)  
"Concept Plan" provided by MGP, July 18, 2023





- Legend**
- TOP OF STABLE SLOPE
  - EROSION ACCESS ALLOWANCE
  - APPROXIMATE MAYFIELD GOLF COURSE LANDS BOUNDARY
  - WATERBODY
  - WATERCOURSE

- NOTES:**
1. All locations approximate
  2. Coordinate system: NAD 1983 UTM Zone 17N
  3. Geographic dataset source: Ontario GeoHub.
  4. Contains information licensed under the Open Government Licence – Ontario.
  5. Service Layer Credits: World Street Map: Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada



Drawing **EROSION HAZARD ANALYSIS (GOLF COURSE SITE)**

Client: **MAYFIELD GOLF COURSE INC.**

Project **MAYFIELD GOLF COURSE REDEVELOPMENT  
12552 AND 12580 TORBRAM ROAD  
CALEDON, ONTARIO**

Drwn By:	S.J.	Chkd By:	D.M.F.
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Project No.	101987.001	Revision No.	0
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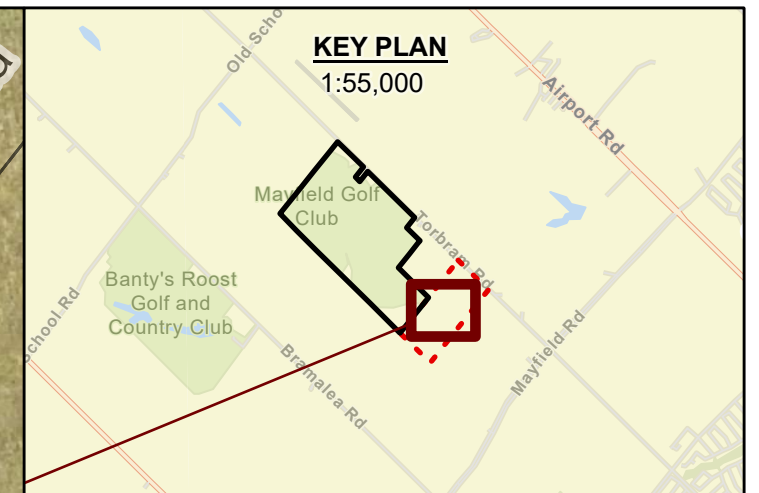
Date	JUNE 2024	<b>FIGURE: 2</b>
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**GEMTEC**  
CONSULTING ENGINEERS AND SCIENTISTS

6695 Millcreek DR #7,  
Mississauga, ON L5N 5M4  
T: (416) 347-7427  
www.gemtec.ca  
graeme.skinner@gemtec.ca

Satellite Imagery Provided by Google Earth Pro, (June, 2018)  
"Concept Plan" provided by MGP, July 18, 2023



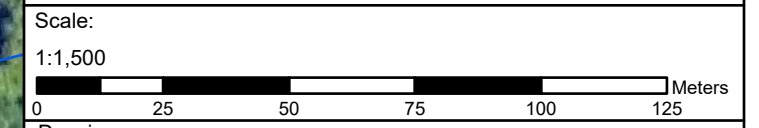


**Legend**

- TOP OF STABLE SLOPE
- EROSION ACCESS ALLOWANCE
- APPROXIMATE MAYFIELD GOLF COURSE LANDS BOUNDARY
- WATERBODY
- WATERCOURSE

NOTES:

1. All locations approximate
2. Coordinate system: NAD 1983 UTM Zone 17N
3. Geographic dataset source: Ontario GeoHub.
4. Contains information licensed under the Open Government Licence – Ontario.
5. Service Layer Credits: World Street Map: Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada



Drawing **EROSION HAZARD ANALYSIS (SOUTH LANDS)**

Client: **MAYFIELD GOLF COURSE INC.**

Project **MAYFIELD GOLF COURSE REDEVELOPMENT  
12552 AND 12580 TORBRAM ROAD  
CALEDON, ONTARIO**

Drwn By: <b>S.J.</b>	Chkd By: <b>D.M.F.</b>
----------------------	------------------------

Project No. <b>101987.001</b>	Revision No. <b>0</b>
-------------------------------	-----------------------

Date <b>JUNE 2024</b>	<b>FIGURE: 3</b>
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<p><b>GEMTEC</b> CONSULTING ENGINEERS AND SCIENTISTS</p>	<p>6695 Millcreek DR #7, Mississauga, ON L5N 5M4 T: (416) 347-7427 www.gemtec.ca graeme.skinner@gemtec.ca</p>
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Satellite Imagery Provided by Google Earth Pro, (June, 2018)  
"Concept Plan" provided by MGP, July 18, 2023



## **APPENDIX F – Surface Water Quality**

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### **Surface Water Chemical Certificate of Analysis**

**C.O.C.: G113771**

**REPORT No: 24-013865 - Rev. 0**

**Report To:**

GEI Consultants  
 647 Welham Rd, Unit 14  
 Barrie, ON L4N 0B7

**CADUCEON Environmental Laboratories**

110 West Beaver Creek Rd  
 Unit #14  
 Richmond Hill, ON L4B 1J9

**Attention: Bethany Gruber**

DATE RECEIVED: 2024-May-15  
 DATE REPORTED: 2024-May-24  
 SAMPLE MATRIX: Surface Water

CUSTOMER PROJECT: 2400278  
 P.O. NUMBER:

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Anions (Liquid)	4	OTTAWA	PCURIEL	2024-May-16	A-IC-01	SM 4110B
BOD5 (Liquid)	4	KINGSTON	JWOLFE2	2024-May-17	BOD-001	SM 5210B
Cond/pH/Alk Auto (Liquid)	4	OTTAWA	SBOUDREAU	2024-May-16	COND-02/PH-02/A LK-02	SM 2510B/4500H/ 2320B
E.Coli m-TECH Media (Liquid)	4	KINGSTON	BBURTCH	2024-May-16	EC-001	MECP E3371
Fecal Coliforms (Liquid)	4	KINGSTON	BBURTCH	2024-May-16	FC-001	SM 9222D
ICP/MS Total (Liquid)	4	OTTAWA	TPRICE	2024-May-21	D-ICPMS-01	EPA 6020
ICP/OES Total (Liquid)	4	OTTAWA	APRUDYVUS	2024-May-17	D-ICP-01	SM 3120B
Ammonia & o-Phosphate (Liquid)	4	KINGSTON	JYEARWOOD	2024-May-17	NH3-001	SM 4500NH3
Oil & Grease (Liquid)	4	KINGSTON	MLANE	2024-May-16	O&G-001	SM 5520
SVOC - Semi-Volatiles (Liquid)	4	KINGSTON	EASIEDU	2024-May-18	NAB-W-001	EPA 8270D
Total Coliforms (m-Endo Media)	4	KINGSTON	BBURTCH	2024-May-16	TC-001	SM 9222B
TP & TKN (Liquid)	4	KINGSTON	KDIBBITS	2024-May-21	TPTKN-001	MECP E3516.2
TS (Liquid)	4	KINGSTON	JMACINNES	2024-May-23	TS-001	SM 2540
TSS (Liquid)	4	KINGSTON	DCASSIDY	2024-May-16	TSS-001	SM 2540D
Turbidity (Liquid)	4	OTTAWA	PLUSSIER	2024-May-17	A-TURB-01	SM 2130B

R.L. = Reporting Limit

NC = Not Calculated

Test methods may be modified from specified reference method unless indicated by an \*




**Michelle Dubien**  
**Data Specialist**

**CADUCEON Environmental Laboratories Certificate of Analysis**

**Final Report**  
**REPORT No: 24-013865 - Rev. 0**

Parameter	Units	R.L.	Limits	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	Sample I.D.	Sample I.D.	Sample I.D.
					Date Collected	Date Collected	Date Collected	Date Collected
					-	-	-	-
Total Coliform	CFU/100mL	1			560	540	320	620
Background	CFU/100mL	1			>4000	>4000	>4000	>4000
E coli	CFU/100mL	1	100	PWQO	23	66	53	62
Fecal Coliform	CFU/100mL	1			29	180	93	149
Alkalinity(CaCO3) to pH4.5	mg/L	5			238	292	262	268
TDS (Calc. from Cond.)	mg/L	3			342	538	396	404
Conductivity @25°C	uS/cm	1			658	1010	757	772
pH @25°C	pH units	-	8.5	PWQO	8.23	8.35	8.35	8.30
Turbidity	NTU	0.1			7.0	1.7	3.5	3.2
Chloride	mg/L	0.5			55.6	33.7	74.2	76.6
Nitrate (N)	mg/L	0.05			1.01	4.22	1.76	1.95
Nitrite (N)	mg/L	0.05			<0.05	<0.05	<0.05	<0.05
BOD5	mg/L	3			6	<3	<3	<3
Total Suspended Solids	mg/L	3			13	<3	<3	<3
Total Solids	mg/L	30			430	630	520	515
Phosphorus (Total)	µg/L	10	10	INTERIM	90	60	50	40
Total Kjeldahl Nitrogen	mg/L	0.1			1.9	1.3	1.1	1.1
Ammonia (N)-Total (NH3+NH4)	mg/L	0.05			0.07	<0.05	<0.05	<0.05
o-Phosphate (P)	mg/L	0.002			0.012	0.011	0.009	0.010
Hardness (as CaCO3)	mg/L as CaCO3	-			282	342	296	304
Aluminum (Total)	µg/L	10			110	60	80	70



**Michelle Dubien**  
**Data Specialist**

The analytical results reported herein refer to the samples as received and relate only to the items tested. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

CADUCEON Environmental Laboratories Certificate of Analysis

Final Report  
 REPORT No: 24-013865 - Rev. 0

Parameter	Units	R.L.	Limits	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	Sample I.D.	Sample I.D.	Sample I.D.
					24-013865-1	24-013865-2	24-013865-3	24-013865-4
				Date Collected	2024-May-14	2024-May-14	2024-May-14	2024-May-14
					-	-	-	-
Barium (Total)	µg/L	1			51	42	52	55
Boron (Total)	µg/L	5	200	INTERIM	30	37	32	32
Calcium (Total)	µg/L	20			87100	108000	90200	93300
Iron (Total)	µg/L	5	300	PWQO	409	75	212	208
Magnesium (Total)	µg/L	20			15600	17200	17100	17300
Manganese (Total)	µg/L	1			127	23	60	65
Potassium (Total)	µg/L	100			3300	4100	3400	3400
Silicon (Total)	µg/L	10			2220	630	1670	1900
Sodium (Total)	µg/L	200			33600	85000	44500	46600
Strontium (Total)	µg/L	1			299	282	308	312
Tin (Total)	µg/L	50			<50	<50	<50	<50
Titanium (Total)	µg/L	5			<5	<5	<5	<5
Tungsten (Total)	µg/L	10	30	INTERIM	<10	<10	<10	<10
Zinc (Total)	µg/L	5	20, 30	INTERIM, PWQO	<5	5	<5	<5
Zirconium (Total)	µg/L	3	4	INTERIM	<3	<3	<3	<3
Antimony (Total)	µg/L	0.1	20	INTERIM	0.3	0.4	0.3	0.3
Arsenic (Total)	µg/L	0.1	5, 5	INTERIM, PWQO	2.1	0.6	1.3	1.2
Beryllium (Total)	µg/L	0.1	11	PWQO	<0.1	<0.1	<0.1	<0.1
Cadmium (Total)	µg/L	0.015	0.1, 0.2	INTERIM, PWQO	<0.015	<0.015	<0.015	<0.015
Chromium (Total)	µg/L	1			<1	<1	<1	<1
Cobalt (Total)	µg/L	0.1	0.9	INTERIM	0.3	0.3	0.3	0.3



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 Data Specialist

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**Final Report**  
**REPORT No: 24-013865 - Rev. 0**

Parameter	Units	R.L.	Limits	INTERIM	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	24-013865-1	24-013865-2	24-013865-3	24-013865-4
					Date Collected	2024-May-14	2024-May-14	2024-May-14	2024-May-14
						-	-	-	-
Copper (Total)	µg/L	0.1	5	INTERIM	1.2	2.0	1.4	1.4	
Lead (Total)	µg/L	0.02	1, 5	INTERIM, PWQO	0.15	0.06	0.09	0.08	
Molybdenum (Total)	µg/L	0.1	40	INTERIM	0.6	0.4	0.5	0.5	
Nickel (Total)	µg/L	0.2	25	PWQO	0.6	1.0	0.7	0.8	
Selenium (Total)	µg/L	1	100	PWQO	<1	<1	<1	<1	
Silver (Total)	µg/L	0.1	0.1	PWQO	<0.1	<0.1	<0.1	<0.1	
Thallium (Total)	µg/L	0.05	0.3, 0.3	INTERIM, PWQO	<0.05	<0.05	<0.05	<0.05	
Uranium (Total)	µg/L	0.05	5	INTERIM	0.89	1.15	0.86	0.84	
Vanadium (Total)	µg/L	0.1	6	INTERIM	0.5	0.4	0.4	0.4	

Parameter	Units	R.L.	Limits	INTERIM <th>Client I.D.</th> <th>SW-64</th> <th>SW-65</th> <th>SW-66</th> <th>SW-67</th>	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	24-013865-1	24-013865-2	24-013865-3	24-013865-4
					Date Collected	2024-May-14	2024-May-14	2024-May-14	2024-May-14
						-	-	-	-
Oil & Grease (Total)	mg/L	1.0			2.9	4.5	4.4	3.1	



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**Data Specialist**

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Final Report  
REPORT No: 24-013865 - Rev. 0

Parameter	Units	R.L.	Limits	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	Sample I.D.	Sample I.D.	Sample I.D.
Date Collected					24-013865-1	24-013865-2	24-013865-3	24-013865-4
					2024-May-14	2024-May-14	2024-May-14	2024-May-14
					-	-	-	-
Acenaphthene	µg/L	0.05			<0.08	<0.05	<0.05	<0.05
Acenaphthylene	µg/L	0.05			<0.06	<0.05	<0.05	<0.05
Anthracene	µg/L	0.05	0.0008	PWQO	<0.05	<0.05	<0.05	<0.05
Benzo[a]anthracene	µg/L	0.05	0.0004	INTERIM	<0.15	<0.07 (14)	<0.06	<0.06
Benzo(a)pyrene	µg/L	0.01			<0.03	<0.02	<0.01	<0.01
Benzo(b)fluoranthene	µg/L	0.05			<0.06	<0.05	<0.05	<0.05
Benzo(b+k)fluoranthene	µg/L	0.1			<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	0.05	0.00002	INTERIM	<0.06	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05
Chrysene	µg/L	0.05	0.0001	INTERIM	<0.06	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L	0.05	0.002	INTERIM	<0.06	<0.05	<0.05	<0.05
Fluoranthene	µg/L	0.05	0.0008	INTERIM	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/L	0.05	0.2	INTERIM	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3,-cd)Pyrene	µg/L	0.05			<0.06	<0.05	<0.05	<0.05
Methylnaphthalene,1-	µg/L	0.05	2	INTERIM	<0.07	<0.05	<0.05	<0.05
Methylnaphthalene,2-(1-)	µg/L	1			<1	<1	<1	<1
Methylnaphthalene,2-	µg/L	0.05	2	INTERIM	<0.07	<0.05	<0.05	<0.05
Naphthalene	µg/L	0.05	7	INTERIM	<0.15	<0.07	<0.06	<0.06
Phenanthrene	µg/L	0.05	0.03	INTERIM	<0.08	<0.05	<0.05	<0.05
Pyrene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05

Comments:

14. Elevated RLs due to dilution



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Data Specialist

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: PWQO Limits  
INTERIM: Interim PWQO  
PWQO: PWQO



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**Data Specialist**

<b>Summary of Exceedances</b>		
<b>Interim PWQO</b>		
<b>SW-64</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	90	10
Benzo[a]anthracene	<0.15	0.0004
Benzo(g,h,i)perylene	<0.06	0.00002
Chrysene	<0.06	0.0001
Dibenzo(a,h)anthracene	<0.06	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.08	0.03
<b>SW-65</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	60	10
Benzo[a]anthracene	<0.07	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>SW-66</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	50	10
Benzo[a]anthracene	<0.06	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>SW-67</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	40	10
Benzo[a]anthracene	<0.06	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>PWQO</b>		
<b>SW-64</b>	<b>Found Value</b>	<b>Limit</b>
Iron (Total)	409	300
Anthracene	<0.05	0.0008




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<b>SW-65</b>	<b>Found Value</b>	<b>Limit</b>
Anthracene	<0.05	0.0008
<b>SW-66</b>	<b>Found Value</b>	<b>Limit</b>
Anthracene	<0.05	0.0008
<b>SW-67</b>	<b>Found Value</b>	<b>Limit</b>
Anthracene	<0.05	0.0008




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**Data Specialist**

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**C.O.C.:** G112665

**REPORT No:** 24-013711 - Rev. 0

**Report To:**

GEI Consultants  
 647 Welham Rd, Unit 14  
 Barrie, ON L4N 0B7

**CADUCEON Environmental Laboratories**

110 West Beaver Creek Rd  
 Unit #14  
 Richmond Hill, ON L4B 1J9

**Attention: Bethany Gruber**

DATE RECEIVED: 2024-May-14  
 DATE REPORTED: 2024-May-22  
 SAMPLE MATRIX: Surface Water

CUSTOMER PROJECT: 2400278  
 P.O. NUMBER:

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Anions (Liquid)	4	OTTAWA	LMACGREGOR	2024-May-16	A-IC-01	SM 4110B
BOD5 (Liquid)	4	KINGSTON	JWOLFE2	2024-May-16	BOD-001	SM 5210B
Cond/pH/Alk Auto (Liquid)	4	OTTAWA	SBOUDREAU	2024-May-16	COND-02/PH-02/A LK-02	SM 2510B/4500H/ 2320B
E.Coli m-TECH Media (Liquid)	4	KINGSTON	BBURTCH	2024-May-15	EC-001	MECP E3371
Fecal Coliforms (Liquid)	4	KINGSTON	BBURTCH	2024-May-15	FC-001	SM 9222D
ICP/MS Total (Liquid)	4	OTTAWA	AOZKAYMAK	2024-May-16	D-ICPMS-01	EPA 6020
ICP/OES Total (Liquid)	4	OTTAWA	NHOGAN	2024-May-16	D-ICP-01	SM 3120B
Ammonia & o-Phosphate (Liquid)	4	KINGSTON	JYEARWOOD	2024-May-16	NH3-001	SM 4500NH3
Oil & Grease (Liquid)	4	KINGSTON	MLANE	2024-May-15	O&G-001	SM 5520
SVOC - Semi-Volatiles (Liquid)	4	KINGSTON	EASIEDU	2024-May-15	NAB-W-001	EPA 8270D
Total Coliforms (m-Endo Media)	4	KINGSTON	BBURTCH	2024-May-15	TC-001	SM 9222B
TP & TKN (Liquid)	4	KINGSTON	KDIBBITS	2024-May-16	TPTKN-001	MECP E3516.2
TS (Liquid)	4	KINGSTON	JMACINNES	2024-May-21	TS-001	SM 2540
TSS (Liquid)	4	KINGSTON	DCASSIDY	2024-May-16	TSS-001	SM 2540D
Turbidity (Liquid)	4	OTTAWA	PLUSSIER	2024-May-15	A-TURB-01	SM 2130B

R.L. = Reporting Limit

NC = Not Calculated

Test methods may be modified from specified reference method unless indicated by an \*



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Parameter	Units	R.L.	Limits	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	Sample I.D.	Sample I.D.	Sample I.D.
					Date Collected	Date Collected	Date Collected	Date Collected
Total Coliform	CFU/100mL	1			300	1100	1300	1900
Background	CFU/100mL	1			>20000	>20000	>20000	>20000
E coli	CFU/100mL	1	100	PWQO	13	114	77	150
Fecal Coliform	CFU/100mL	1			17	176	127	199
Alkalinity(CaCO3) to pH4.5	mg/L	5			240	283	262	264
TDS (Calc. from Cond.)	mg/L	3			335	534	395	400
Conductivity @25°C	uS/cm	1			646	1000	756	764
pH @25°C	pH units	-	8.5	PWQO	8.27	8.38	8.35	8.36
Turbidity	NTU	0.1			4.0	2.0	4.4	3.4
Chloride	mg/L	0.5			56.4	139	77.4	79.4
Nitrate (N)	mg/L	0.05			1.12	4.32	1.89	2.08
Nitrite (N)	mg/L	0.05			<0.05	<0.05	<0.05	<0.05
BOD5	mg/L	3			<3	<3	<3	<3
Total Suspended Solids	mg/L	3			9	7	8	7
Total Solids	mg/L	30			420	635	490	510
Phosphorus (Total)	µg/L	10	10	INTERIM	50	50	40	50
Total Kjeldahl Nitrogen	mg/L	0.1			0.2	0.9	0.2	0.3
Ammonia (N)-Total (NH3+NH4)	mg/L	0.05			<0.05	<0.05	<0.05	<0.05
o-Phosphate (P)	mg/L	0.002			<0.002	0.002	<0.002	<0.002
Hardness (as CaCO3)	mg/L as CaCO3	-			259	318	276	283
Aluminum (Total)	µg/L	10			90	80	120	100



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Parameter	Units	R.L.	Limits	Client I.D.	SW-64	SW-65	SW-66	SW-67	
					Sample I.D.	24-013711-1	24-013711-2	24-013711-3	24-013711-4
					Date Collected	2024-May-13	2024-May-13	2024-May-13	2024-May-13
					-	-	-	-	
Barium (Total)	µg/L	1			45	37	48	49	
Boron (Total)	µg/L	5	200	INTERIM	26	32	27	26	
Calcium (Total)	µg/L	20			80600	101000	84200	86700	
Iron (Total)	µg/L	5	300	PWQO	291	69	259	245	
Magnesium (Total)	µg/L	20			14100	16000	15900	16100	
Manganese (Total)	µg/L	1			86	19	61	61	
Potassium (Total)	µg/L	100			2700	3700	3000	3000	
Silicon (Total)	µg/L	10			1560	490	1240	1400	
Sodium (Total)	µg/L	200			29800	80600	42500	43900	
Strontium (Total)	µg/L	1			255	247	272	276	
Tin (Total)	µg/L	50			<50	<50	<50	<50	
Titanium (Total)	µg/L	5			<5	<5	<5	<5	
Tungsten (Total)	µg/L	10	30	INTERIM	<10	<10	<10	<10	
Zinc (Total)	µg/L	5	20, 30	INTERIM, PWQO	8	8	7	8	
Zirconium (Total)	µg/L	3	4	INTERIM	<3	<3	<3	<3	
Antimony (Total)	µg/L	0.1	20	INTERIM	0.3	0.3	0.3	0.3	
Arsenic (Total)	µg/L	0.1	5, 5	INTERIM, PWQO	1.9	0.6	1.1	1.2	
Beryllium (Total)	µg/L	0.1	11	PWQO	<0.1	<0.1	<0.1	<0.1	
Cadmium (Total)	µg/L	0.015	0.1, 0.2	INTERIM, PWQO	<0.015	<0.015	<0.015	<0.015	
Chromium (Total)	µg/L	1			<1	<1	1	1	
Cobalt (Total)	µg/L	0.1	0.9	INTERIM	0.3	0.4	0.3	0.4	



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**Final Report**  
**REPORT No: 24-013711 - Rev. 0**

Parameter	Units	R.L.	Limits	INTERIM	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	24-013711-1	24-013711-2	24-013711-3	24-013711-4
					Date Collected	2024-May-13	2024-May-13	2024-May-13	2024-May-13
						-	-	-	-
Copper (Total)	µg/L	0.1	5	INTERIM	1.4	2.6	1.8	1.9	
Lead (Total)	µg/L	0.02	1, 5	INTERIM, PWQO	0.11	0.05	0.13	0.16	
Molybdenum (Total)	µg/L	0.1	40	INTERIM	0.6	0.4	0.5	0.5	
Nickel (Total)	µg/L	0.2	25	PWQO	0.8	2.0	2.0	2.0	
Selenium (Total)	µg/L	1	100	PWQO	<1	<1	<1	<1	
Silver (Total)	µg/L	0.1	0.1	PWQO	<0.1	<0.1	<0.1	<0.1	
Thallium (Total)	µg/L	0.05	0.3, 0.3	INTERIM, PWQO	<0.05	<0.05	<0.05	<0.05	
Uranium (Total)	µg/L	0.05	5	INTERIM	0.86	1.18	0.85	0.88	
Vanadium (Total)	µg/L	0.1	6	INTERIM	0.5	0.5	0.5	0.5	

Parameter	Units	R.L.	Limits	INTERIM <th>Client I.D.</th> <th>SW-64</th> <th>SW-65</th> <th>SW-66</th> <th>SW-67</th>	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	24-013711-1	24-013711-2	24-013711-3	24-013711-4
					Date Collected	2024-May-13	2024-May-13	2024-May-13	2024-May-13
						-	-	-	-
Oil & Grease (Total)	mg/L	1.0			2.1	2.1	2.8	2.6	




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Final Report  
REPORT No: 24-013711 - Rev. 0

Parameter	Units	R.L.	Limits	Client I.D.	SW-64	SW-65	SW-66	SW-67	
					Sample I.D.	24-013711-1	24-013711-2	24-013711-3	24-013711-4
					Date Collected	2024-May-13	2024-May-13	2024-May-13	2024-May-13
						-	-	-	-
Acenaphthene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Acenaphthylene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Anthracene	µg/L	0.05	0.0008	PWQO	<0.05	<0.05	<0.05	<0.05	
Benzo[a]anthracene	µg/L	0.05	0.0004	INTERIM	<0.06 (15)	<0.05	<0.05	<0.05	
Benzo(a)pyrene	µg/L	0.01			<0.01	<0.01	<0.01	<0.01	
Benzo(b)fluoranthene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Benzo(b+k)fluoranthene	µg/L	0.1			<0.1	<0.1	<0.1	<0.1	
Benzo(g,h,i)perylene	µg/L	0.05	0.00002	INTERIM	<0.05	<0.05	<0.05	<0.05	
Benzo(k)fluoranthene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Chrysene	µg/L	0.05	0.0001	INTERIM	<0.05	<0.05	<0.05	<0.05	
Dibenzo(a,h)anthracene	µg/L	0.05	0.002	INTERIM	<0.05	<0.05	<0.05	<0.05	
Fluoranthene	µg/L	0.05	0.0008	INTERIM	<0.05	<0.05	<0.05	<0.05	
Fluorene	µg/L	0.05	0.2	INTERIM	<0.05	<0.05	<0.05	<0.05	
Indeno(1,2,3,-cd)Pyrene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Methylnaphthalene,1-	µg/L	0.05	2	INTERIM	<0.05	<0.05	<0.05	<0.05	
Methylnaphthalene,2-(1-)	µg/L	1			<1	<1	<1	<1	
Methylnaphthalene,2-	µg/L	0.05	2	INTERIM	<0.05	<0.05	<0.05	<0.05	
Naphthalene	µg/L	0.05	7	INTERIM	<0.06	<0.05	<0.05	<0.05	
Phenanthrene	µg/L	0.05	0.03	INTERIM	<0.05	<0.05	<0.05	<0.05	
Pyrene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Total PAH	µg/L	0.1			<0.1	<0.1	<0.1	<0.1	



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Data Specialist

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**Comments:**

15. Elevated RL due to dilution

: PWQO Limits  
INTERIM: Interim PWQO  
PWQO: PWQO



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**Michelle Dubien**  
**Data Specialist**

<b>Summary of Exceedances</b>		
<b>Interim PWQO</b>		
<b>SW-64</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	50	10
Benzo[a]anthracene	<0.06	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>SW-65</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	50	10
Benzo[a]anthracene	<0.05	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>SW-66</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	40	10
Benzo[a]anthracene	<0.05	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>SW-67</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	50	10
Benzo[a]anthracene	<0.05	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>PWQO</b>		
<b>SW-64</b>	<b>Found Value</b>	<b>Limit</b>
Anthracene	<0.05	0.0008
<b>SW-65</b>	<b>Found Value</b>	<b>Limit</b>



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E coli	114	100
Anthracene	<0.05	0.0008
<b>SW-66</b>	<b>Found Value</b>	<b>Limit</b>
Anthracene	<0.05	0.0008
<b>SW-67</b>	<b>Found Value</b>	<b>Limit</b>
E coli	150	100
Anthracene	<0.05	0.0008




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**C.O.C.: G113853**

**REPORT No: 24-014984 - Rev. 0**

**Report To:**

GEI Consultants  
 647 Welham Rd, Unit 14  
 Barrie, ON L4N 0B7

**CADUCEON Environmental Laboratories**

110 West Beaver Creek Rd  
 Unit #14  
 Richmond Hill, ON L4B 1J9

**Attention: Bethany Gruber**

DATE RECEIVED: 2024-May-24  
 DATE REPORTED: 2024-Jun-03  
 SAMPLE MATRIX: Surface Water

CUSTOMER PROJECT: 2400278  
 P.O. NUMBER:

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Anions (Liquid)	4	OTTAWA	PCURIEL	2024-May-28	A-IC-01	SM 4110B
BOD5 (Liquid)	4	KINGSTON	DCASSIDY	2024-May-29	BOD-001	SM 5210B
Cond/pH/Alk Auto (Liquid)	4	OTTAWA	SBOUDREAU	2024-May-28	COND-02/PH-02/A LK-02	SM 2510B/4500H/ 2320B
E.Coli m-TECH Media (Liquid)	4	KINGSTON	BBURTCH	2024-May-25	EC-001	MECP E3371
Fecal Coliforms (Liquid)	4	KINGSTON	BBURTCH	2024-May-25	FC-001	SM 9222D
ICP/MS Total (Liquid)	4	OTTAWA	AOZKAYMAK	2024-May-29	D-ICPMS-01	EPA 6020
ICP/OES Total (Liquid)	4	OTTAWA	NHOGAN	2024-May-29	D-ICP-01	SM 3120B
Ammonia & o-Phosphate (Liquid)	4	KINGSTON	JYEARWOOD	2024-May-29	NH3-001	SM 4500NH3
Oil & Grease (Liquid)	4	KINGSTON	MLANE	2024-May-29	O&G-001	SM 5520
SVOC - Semi-Volatiles (Liquid)	4	KINGSTON	EASIEDU	2024-May-29	NAB-W-001	EPA 8270D
Total Coliforms (m-Endo Media)	4	KINGSTON	BBURTCH	2024-May-25	TC-001	SM 9222B
TP & TKN (Liquid)	4	KINGSTON	KDIBBITS	2024-May-30	TPTKN-001	MECP E3516.2
TS (Liquid)	4	KINGSTON	JMACINNES	2024-May-29	TS-001	SM 2540
TSS (Liquid)	4	KINGSTON	DCASSIDY	2024-May-28	TSS-001	SM 2540D
Turbidity (Liquid)	4	OTTAWA	PLUSSIER	2024-May-28	A-TURB-01	SM 2130B

R.L. = Reporting Limit

NC = Not Calculated

Test methods may be modified from specified reference method unless indicated by an \*




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Parameter	Units	R.L.	Limits	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	Sample I.D.	Sample I.D.	Sample I.D.
Date Collected					24-014984-1	24-014984-2	24-014984-3	24-014984-4
					2024-May-24	2024-May-24	2024-May-24	2024-May-24
					-	-	-	-
Total Coliform	CFU/100mL	1			NDOGT	NDOGT	NDOGT	NDOGT
Background	CFU/100mL	1			NDOGT	NDOGT	NDOGT	NDOGT
E coli	CFU/100mL	1	100	PWQO	188	>200	>200	103
Fecal Coliform	CFU/100mL	1			NDOGT	>200	>200	>200
Alkalinity(CaCO3) to pH4.5	mg/L	5			249	322	280	286
TDS (Calc. from Cond.)	mg/L	3			347	554	396	403
Conductivity @25°C	uS/cm	1			668	1040	757	769
pH @25°C	pH units	-	8.5	PWQO	8.07	8.22	8.21	8.19
Turbidity	NTU	0.1			4.7	1.2	4.0	2.5
Chloride	mg/L	0.5			54.5	130	66.6	66.8
Nitrate (N)	mg/L	0.05			1.30	3.02	0.86	1.05
Nitrite (N)	mg/L	0.05			<0.05	<0.05	<0.05	<0.05
BOD5	mg/L	3			<3	<3	<3	<3
Total Suspended Solids	mg/L	3			4	<3	6	3
Total Solids	mg/L	30			440	625	250	485
Phosphorus (Total)	µg/L	10	10	INTERIM	100	60	70	60
Total Kjeldahl Nitrogen	mg/L	0.1			1.3	1.3	1.1	0.9
Ammonia (N)-Total (NH3+NH4)	mg/L	0.05			0.06	<0.05	<0.05	<0.05
o-Phosphate (P)	mg/L	0.002			0.017	0.012	0.017	0.013
Hardness (as CaCO3)	mg/L as CaCO3	-			283	354	297	310
Aluminum (Total)	µg/L	10			130	90	120	80



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Parameter	Units	R.L.	Limits	Client I.D.	SW-64	SW-65	SW-66	SW-67	
					Sample I.D.	24-014984-1	24-014984-2	24-014984-3	24-014984-4
					Date Collected	2024-May-24	2024-May-24	2024-May-24	2024-May-24
					-	-	-	-	
Barium (Total)	µg/L	1			53	42	56	64	
Boron (Total)	µg/L	5	200	INTERIM	32	36	32	33	
Calcium (Total)	µg/L	20			86000	112000	88200	91800	
Iron (Total)	µg/L	5	300	PWQO	287	48	203	182	
Magnesium (Total)	µg/L	20			16500	18100	18700	19600	
Manganese (Total)	µg/L	1			128	14	66	78	
Potassium (Total)	µg/L	100			2700	4200	2800	2800	
Silicon (Total)	µg/L	10			3080	940	2890	3660	
Sodium (Total)	µg/L	200			30600	79800	35400	36600	
Strontium (Total)	µg/L	1			302	286	322	337	
Tin (Total)	µg/L	50			<50	<50	<50	<50	
Titanium (Total)	µg/L	5			<5	<5	<5	5	
Tungsten (Total)	µg/L	10	30	INTERIM	<10	<10	<10	<10	
Zinc (Total)	µg/L	5	20, 30	INTERIM, PWQO	15	12	9	10	
Zirconium (Total)	µg/L	3	4	INTERIM	<3	<3	<3	<3	
Antimony (Total)	µg/L	0.1	20	INTERIM	0.3	0.3	0.4	0.2	
Arsenic (Total)	µg/L	0.1	5, 5	INTERIM, PWQO	3.2	0.8	1.7	1.5	
Beryllium (Total)	µg/L	0.1	11	PWQO	<0.1	<0.1	<0.1	<0.1	
Cadmium (Total)	µg/L	0.015	0.1, 0.2	INTERIM, PWQO	<0.015	<0.015	<0.015	<0.015	
Chromium (Total)	µg/L	1			<1	<1	<1	<1	
Cobalt (Total)	µg/L	0.1	0.9	INTERIM	0.2	0.2	0.3	0.2	



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Parameter	Units	R.L.	Limits	INTERIM	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	24-014984-1	24-014984-2	24-014984-3	24-014984-4
					Date Collected	2024-May-24	2024-May-24	2024-May-24	2024-May-24
						-	-	-	-
Copper (Total)	µg/L	0.1	5	INTERIM	0.8	2.3	1.4	1.3	
Lead (Total)	µg/L	0.02	1, 5	INTERIM, PWQO	0.14	0.05	0.12	0.09	
Molybdenum (Total)	µg/L	0.1	40	INTERIM	0.6	0.5	0.6	0.6	
Nickel (Total)	µg/L	0.2	25	PWQO	0.7	1.7	0.8	0.9	
Selenium (Total)	µg/L	1	100	PWQO	<1	<1	<1	<1	
Silver (Total)	µg/L	0.1	0.1	PWQO	<0.1	<0.1	<0.1	<0.1	
Thallium (Total)	µg/L	0.05	0.3, 0.3	INTERIM, PWQO	<0.05	<0.05	<0.05	<0.05	
Uranium (Total)	µg/L	0.05	5	INTERIM	0.80	1.12	0.74	0.71	
Vanadium (Total)	µg/L	0.1	6	INTERIM	0.6	0.5	0.6	0.4	

Parameter	Units	R.L.	Limits	INTERIM <th>Client I.D.</th> <th>SW-64</th> <th>SW-65</th> <th>SW-66</th> <th>SW-67</th>	Client I.D.	SW-64	SW-65	SW-66	SW-67
					Sample I.D.	24-014984-1	24-014984-2	24-014984-3	24-014984-4
					Date Collected	2024-May-24	2024-May-24	2024-May-24	2024-May-24
						-	-	-	-
Oil & Grease (Total)	mg/L	1.0			2.2	<1.0	<1.0	1.1	




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Parameter	Units	R.L.	Limits	Client I.D.	SW-64	SW-65	SW-66	SW-67	
					Sample I.D.	24-014984-1	24-014984-2	24-014984-3	24-014984-4
					Date Collected	2024-May-24	2024-May-24	2024-May-24	2024-May-24
					-	-	-	-	
Acenaphthene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Acenaphthylene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Anthracene	µg/L	0.05	0.0008	PWQO	<0.05	<0.05	<0.05	<0.05	
Benzo[a]anthracene	µg/L	0.05	0.0004	INTERIM	<0.06 (14)	<0.06	<0.06	<0.06	
Benzo(a)pyrene	µg/L	0.01			<0.01	<0.01	0.02	<0.01	
Benzo(b)fluoranthene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Benzo(b+k)fluoranthene	µg/L	0.1			<0.1	<0.1	<0.1	<0.1	
Benzo(g,h,i)perylene	µg/L	0.05	0.00002	INTERIM	<0.05	<0.05	<0.05	<0.05	
Benzo(k)fluoranthene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Chrysene	µg/L	0.05	0.0001	INTERIM	<0.05	<0.05	<0.05	<0.05	
Dibenzo(a,h)anthracene	µg/L	0.05	0.002	INTERIM	<0.05	<0.05	<0.05	<0.05	
Fluoranthene	µg/L	0.05	0.0008	INTERIM	<0.05	<0.05	<0.05	<0.05	
Fluorene	µg/L	0.05	0.2	INTERIM	<0.05	<0.05	<0.05	<0.05	
Indeno(1,2,3,-cd)Pyrene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Methylnaphthalene,1-	µg/L	0.05	2	INTERIM	<0.05	<0.05	<0.05	<0.05	
Methylnaphthalene,2-(1-)	µg/L	1			<1	<1	<1	<1	
Methylnaphthalene,2-	µg/L	0.05	2	INTERIM	<0.05	<0.05	<0.05	<0.05	
Naphthalene	µg/L	0.05	7	INTERIM	<0.06	<0.06	<0.06	<0.06	
Phenanthrene	µg/L	0.05	0.03	INTERIM	<0.05	<0.05	<0.05	<0.05	
Pyrene	µg/L	0.05			<0.05	<0.05	<0.05	<0.05	
Total PAH	µg/L	0.1			<0.1	<0.1	0.3	<0.1	



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**Comments:**

14. Elevated RLs due to dilution

: PWQO Limits  
INTERIM: Interim PWQO  
PWQO: PWQO



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**Data Specialist**

Summary of Exceedances		
<b>Interim PWQO</b>		
<b>SW-64</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	100	10
Benzo[a]anthracene	<0.06	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>SW-65</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	60	10
Benzo[a]anthracene	<0.06	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>SW-66</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	70	10
Benzo[a]anthracene	<0.06	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>SW-67</b>	<b>Found Value</b>	<b>Limit</b>
Phosphorus (Total)	60	10
Benzo[a]anthracene	<0.06	0.0004
Benzo(g,h,i)perylene	<0.05	0.00002
Chrysene	<0.05	0.0001
Dibenzo(a,h)anthracene	<0.05	0.002
Fluoranthene	<0.05	0.0008
Phenanthrene	<0.05	0.03
<b>PWQO</b>		
<b>SW-64</b>	<b>Found Value</b>	<b>Limit</b>
E coli	188	100
Anthracene	<0.05	0.0008



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<b>SW-65</b>	<b>Found Value</b>	<b>Limit</b>
E coli	>200	100
Anthracene	<0.05	0.0008
<b>SW-66</b>	<b>Found Value</b>	<b>Limit</b>
E coli	>200	100
Anthracene	<0.05	0.0008
<b>SW-67</b>	<b>Found Value</b>	<b>Limit</b>
E coli	103	100
Anthracene	<0.05	0.0008



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